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NIST  
PUBLICATIONS

# NVLAP<sup>®</sup>

**National  
Voluntary  
Laboratory  
Accreditation  
Program**

## 2001 DIRECTORY

NIST Special Publication 810, 2001 Edition

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2001  
March  
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AUTHENTICATED  
U.S. GOVERNMENT  
INFORMATION

GPO



### NIST

**National Institute of Standards and Technology**  
Technology Administration, U.S. Department of Commerce

**T**he National Institute of Standards and Technology was established in 1988 by Congress to “assist industry in the development of technology . . . needed to improve product quality, to modernize manufacturing processes, to ensure product reliability . . . and to facilitate rapid commercialization . . . of products based on new scientific discoveries.”

NIST, originally founded as the National Bureau of Standards in 1901, works to strengthen U.S. industry's competitiveness; advance science and engineering; and improve public health, safety, and the environment. One of the agency's basic functions is to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for comparing standards used in science, engineering, manufacturing, commerce, industry, and education with the standards adopted or recognized by the Federal Government.

As an agency of the U.S. Commerce Department's Technology Administration, NIST conducts basic and applied research in the physical sciences and engineering, and develops measurement techniques, test methods, standards, and related services. The Institute does generic and precompetitive work on new and advanced technologies. NIST's research facilities are located at Gaithersburg, MD 20899, and at Boulder, CO 80303. Major technical operating units and their principal activities are listed below. For more information contact the Publications and Program Inquiries Desk, 301-975-3058.

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### **Office of the Director**

- National Quality Program
- International and Academic Affairs

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- Technology Partnerships
- Measurement Services
- Information Services

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- Information Technology and Applications
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### **Electronics and Electrical Engineering Laboratory**

- Microelectronics
- Law Enforcement Standards
- Electricity
- Semiconductor Electronics
- Radio-Frequency Technology<sup>1</sup>
- Electromagnetic Technology<sup>1</sup>
- Optoelectronics<sup>1</sup>

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- Ceramics
- Materials Reliability<sup>1</sup>
- Polymers
- Metallurgy
- NIST Center for Neutron Research

### **Chemical Science and Technology Laboratory**

- Biotechnology
- Physical and Chemical Properties<sup>2</sup>
- Analytical Chemistry
- Process Measurements
- Surface and Microanalysis Science

### **Physics Laboratory**

- Electron and Optical Physics
- Atomic Physics
- Optical Technology
- Ionizing Radiation
- Time and Frequency<sup>1</sup>
- Quantum Physics<sup>1</sup>

### **Manufacturing Engineering Laboratory**

- Precision Engineering
- Manufacturing Metrology
- Intelligent Systems
- Fabrication Technology
- Manufacturing Systems Integration

### **Building and Fire Research Laboratory**

- Applied Economics
- Structures
- Building Materials
- Building Environment
- Fire Safety Engineering
- Fire Science

### **Information Technology Laboratory**

- Mathematical and Computational Sciences<sup>2</sup>
- Advanced Network Technologies
- Computer Security
- Information Access
- Convergent Information Systems
- Information Services and Computing
- Software Diagnostics and Conformance Testing
- Statistical Engineering

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<sup>1</sup> At Boulder, CO 80303.

<sup>2</sup> Some elements at Boulder, CO.

NIST Special Publication 810, 2001 Edition

**National  
Voluntary  
Laboratory  
Accreditation  
Program**

**2001 DIRECTORY**

Vanda R. White, Editor  
National Voluntary Laboratory Accreditation Program  
Office of Standards Services  
Technology Services

March 2001

Supersedes NIST SP 810, 2000 Edition



U.S. Department of Commerce  
Donald L. Evans, Secretary

Technology Administration  
Karen H. Brown, Acting Under Secretary of Commerce for Technology

National Institute of Standards and Technology  
Karen H. Brown, Acting Director

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## NVLAP AND THE NVLAP LOGO

The term *NVLAP* (represented by the NVLAP logo) is a federally registered certification mark of the National Institute of Standards and Technology and the federal government, who retain exclusive rights to control the use thereof. Permission to use the term and/or logo is granted to NVLAP-accredited laboratories for the limited purposes of announcing their accredited status, and for use on reports that describe only testing and calibration within the scope of accreditation. NIST reserves the right to control the quality of the use of the term *NVLAP* and of the logo itself.



## INTRODUCTION

The laboratories listed in this Directory have been found to be competent to perform certain tests or calibrations as specified. These laboratories are allowed to use the NVLAP logo on their test or calibration certificates or reports, which implies that the processes used to achieve the tests or calibrations have been evaluated by NVLAP as being technically adequate when performed under the conditions specified in the laboratories' quality manuals and associated documentation. Further, NVLAP certifies that the laboratories have demonstrated traceability of their tests or calibrations to national standards at the appropriate levels of uncertainty for which the laboratories have been accredited.

As a prospective customer of the laboratories listed in this Directory, you should be aware that the laboratories are obligated to inform you, before the fact, whenever a test or a calibration service which you have requested is not covered by the NVLAP accreditation (NIST Handbook 150, Section 285.33(k)(8)). When contracting for the test or calibration service, you have the right to specify whether or not you desire a NVLAP-accredited test or calibration. Provision of a non-NVLAP-accredited test or calibration shall not be accompanied by the use of the NVLAP logo on the certificate or report, and NVLAP does not endorse any claims made regarding traceability and uncertainty of the measurements performed.

In addition, if a laboratory performs a combination of tests or calibrations, some of which have been accredited by NVLAP and some of which have not, the laboratory is bound by the provisions of NIST Handbook 150 to clearly identify the tests or calibrations covered by NVLAP accreditation and those not accredited by NVLAP on the test or calibration certificate or report.

Current information on the accreditation status of a laboratory can be obtained by contacting NVLAP as follows:

- (1) Address: Chief, Laboratory Accreditation Program  
National Institute of Standards and Technology  
100 Bureau Drive, Stop 2140  
Gaithersburg, MD 20899-2140;
- (2) Phone: (301) 975-4016;
- (3) Fax: (301) 926-2884; or
- (4) E-mail: [nvlap@nist.gov](mailto:nvlap@nist.gov).

NVLAP also maintains a directory of accredited laboratories on the Internet, which is updated quarterly. The URL for NVLAP's home page is <http://www.nist.gov/nvlap>.



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## PROGRAM SUMMARY

The National Institute of Standards and Technology (NIST) administers the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is comprised of a series of laboratory accreditation programs (LAPs) which are established on the basis of requests and demonstrated need. Each LAP includes specific calibration and/or test standards and related methods and protocols assembled to satisfy the unique needs for accreditation in a field of testing or calibration. NVLAP accredits public and private laboratories based on evaluation of their technical qualifications and competence to carry out specific calibrations or tests. Accreditation criteria are published in NIST Handbook 150, *NVLAP Procedures and General Requirements*, and encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002. Accreditation is granted following successful completion of a process which includes submission of an application and payment of fees by the laboratory, an on-site assessment, resolution of any deficiencies identified during the on-site assessment, participation in proficiency testing, and technical evaluation. The accreditation is formalized through issuance of a Certificate of Accreditation and Scope of Accreditation (fig. 1) and publicized by announcement in various government and private media.

NVLAP accreditation is available to commercial laboratories; manufacturers' in-house laboratories; university laboratories; and federal, state, and local government laboratories. Foreign-based laboratories may also be accredited if they meet the same requirements as domestic laboratories and pay any additional fees required for travel expenses.

NVLAP provides an unbiased third party evaluation and recognition of performance, as well as expert technical guidance to upgrade laboratory performance. NVLAP accreditation signifies that a laboratory has demonstrated that it operates in accordance with NVLAP requirements in the following areas: accommodation and environment; calibration and test methods; certificates and reports; complaints; equipment and reference materials; handling of calibration and test items; measurement traceability and calibration; organization and management; outside support services and supplies; personnel; quality system, audit and review; records; and subcontracting. NVLAP accreditation does not imply any guarantee (certification) of laboratory performance or test/calibration data; it is solely a finding of laboratory competence. A laboratory may cite its accredited status and use the NVLAP logo on reports, stationery, and in business and trade publications provided that this use does not imply product certification.

This Directory of laboratories is published annually and lists the name, address, contact person, phone and fax numbers, e-mail and URL addresses (if available), accreditation renewal date, and scope of accreditation for each laboratory. An updated listing of laboratories is published quarterly on NVLAP's home page on the Internet: <http://www.nist.gov/nvlap>.

### *Accreditation Renewal Date*

A laboratory accreditation is valid for one year and commences on one of four dates: January 1, April 1, July 1, or October 1; an accreditation will terminate after one year unless renewed by the laboratory. Users of this Directory who are considering selection of accredited laboratories should be aware of the renewal date and verify that the laboratory has retained its accreditation at the time its services are to be provided. Verification of accreditation status can be obtained by contacting NVLAP.

## *On-Site Assessment*

Before initial accreditation, an on-site assessment of each laboratory is conducted to determine compliance with the NVLAP criteria. After accreditation is granted, an on-site assessment must be conducted every two years in order for the laboratory to maintain accreditation. An assessment is conducted by one or more NVLAP assessors selected on the basis of their expertise in the field of testing or calibration to be reviewed. They may be engineers or scientists currently active in the field, consultants, college professors or retired persons. Their services are generally contracted as required.

For most programs, assessors use checklists provided by NVLAP so that each laboratory receives an assessment comparable to that received by others. However, assessors have some latitude to make judgments about a laboratory's compliance with the NVLAP criteria.

An assessment normally takes one to five days depending on the extent of the laboratory's application. Every effort is made to conduct an assessment with as little disruption as possible to the normal operations of the laboratory. During the assessment, the assessor carries out the following functions:

- meets with management and supervisory personnel responsible for the laboratory's activities to review the assessment process and to set the assessment agenda;
- examines the laboratory's quality assurance system, selects and traces the history of one or more samples from receipt to final issuance of reports, conducts a thorough review of the laboratory's quality manual, evaluates the training program, examines notebooks or records pertaining to the samples, checks sample identification and tracking procedures, determines whether the appropriate environmental conditions are maintained, and examines copies of completed reports;
- reviews records of periodic internal audits, use of check samples or participation in round-robin testing or other similar programs, personnel records including resumes and job descriptions of key personnel, competency evaluations for all staff members who routinely perform the testing or calibration for which accreditation is sought, calibration or verification records for apparatus used, reports, and sample control records;
- observes demonstrations of laboratory techniques and discusses them with the technical personnel to assure their understanding of the procedures; and
- examines major equipment, apparatus, and facilities.

At the conclusion of the assessment, the assessor will conduct an exit briefing to discuss observations and any deficiencies with responsible laboratory staff. A written assessment report will be left with the laboratory, and a copy forwarded to NVLAP.

If the on-site inspection reveals deficiencies that pertain to NVLAP requirements, the laboratory must respond in writing to NVLAP within 30 days of such notification. The response must provide documentation, signed by the Authorized Representative, that the specified deficiencies have either been corrected or include a plan of action to make corrections.

### ***Monitoring Visits***

Monitoring visits may be conducted at any time during the accreditation period for cause or on a random selection basis. These visits serve to verify reported changes in the laboratory's personnel, facilities, or operations, or to explore possible reasons for poor performance in proficiency testing. The scope of a monitoring visit may range from checking a few designated items to a complete review.

### ***Proficiency Testing***

Proficiency testing is an integral part of the NVLAP accreditation process. On-site demonstration of appropriate facilities, equipment, personnel, etc., is essential, but may not be sufficient for the continuing evaluation of laboratory competence. The production of test/calibration data using special proficiency testing samples or artifacts provides NVLAP with a means to determine the overall competence of the laboratory. Information obtained from proficiency testing helps to identify problems in a laboratory. When problems are found, NVLAP works with the laboratory staff to solve them.

Most fields of accreditation have proficiency testing requirements. Data submitted by the laboratories in response to specific NVLAP requirements are analyzed and reports of the results are made known to the participants. Summary results are available upon request to other interested parties; e.g., professional societies and standards writing bodies. The identity and performance of individual laboratories are kept confidential.

Satisfactory participation is based on specially tailored exercises designed to evaluate the ability of the laboratory to produce the services for which it is accredited. Some methods define pass/fail criteria; in other cases, individual laboratory results must fall within statistically acceptable limits of overall group performance. In a number of programs, NVLAP requires satisfactory participation in proficiency testing as a condition of initial, as well as continuing, accreditation.

### ***Technical Evaluation***

To determine if all technical requirements have been fulfilled by a laboratory, a final technical evaluation is performed by NVLAP. The evaluation is based on a review of the record of the laboratory as a whole, including:

- information provided on the application;
- results of quality system documentation review;
- on-site assessment reports;
- actions taken by the laboratory to correct deficiencies;
- results of proficiency testing; and
- information from any monitoring visits of the laboratory.

If the technical evaluation reveals additional deficiencies, written notification of the deficiencies will be sent to the laboratory. The laboratory must respond as specified in the previous section, *On-Site Assessment*. Clarification of some issues may be requested by telephone. All deficiencies must be resolved before accreditation can be granted.

### *Accreditation Actions*

After the technical evaluation has been completed and all financial and administrative requirements have been satisfied, NVLAP takes one of the following accreditation actions:

*Accreditation* The laboratory is issued a Certificate of Accreditation and a Scope of Accreditation.

*Denial* The laboratory is notified of a proposal to deny accreditation and the reason(s).

If an accredited laboratory is found to be out of compliance with the NVLAP criteria, NVLAP may take one of the following actions:

*Suspension* Suspension is a temporary removal of the accredited status of a laboratory when it is found to be out of compliance with the terms of its accreditation. The laboratory will be notified of the reasons for and conditions of the suspension and the action(s) that the laboratory must take to have the accreditation reinstated.

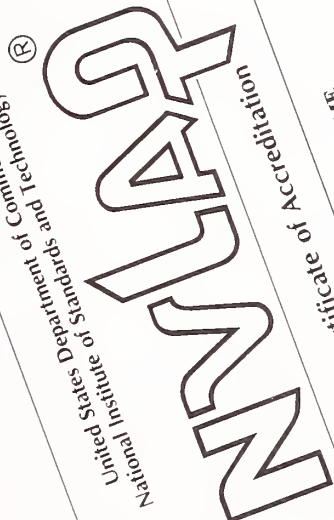
Reasons for suspension include: loss of key personnel, loss of major equipment, damage to laboratory by fire, changing laboratory location, proficiency test failure.

*Revocation* Revocation is the removal of the accredited status of a laboratory when it is found to have violated the terms of its accreditation. The laboratory will be notified of the reasons for proposed revocation and the procedure for appealing such a decision. If accreditation is revoked, the laboratory may be given the option of voluntarily terminating the accreditation. A laboratory whose accreditation has been revoked must return its Certificate of Accreditation and cease use of the NVLAP logo on any of its reports, correspondence, or advertising.

Reasons for revocation include: obtaining accreditation through fraud, refusal to resolve deficiencies, no longer providing the type of calibration or testing service for which accreditation was issued.

If denial or revocation has been proposed, the laboratory may appeal the decision to the Director of NIST. If an appeal is not requested, the action becomes final upon the expiration of the 30-day period following receipt of the notification.





**NVLAP**  
National Institute of Standards and Technology  
Department of Commerce

**Certificate of Accreditation**

ISO/IEC GUIDE 25:1990  
ISO 9002:1987



DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

**LABORATORY NAME**  
Anytown, USA

**Scope of Accreditation**

ISO/IEC GUIDE 25:1990  
ISO 9002:1987

**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

**LABORATORY NAME**  
Anytown, USA 00000-0000  
Mr. John Doe  
Phone: 000-000-0000 Fax: xxx-xxx-xxxx  
E-Mail: jdoe@labname.com  
URL: www.labname.com

**NVLAP LAB CODE** 100000-0

**Page 1 of 1**

**Designation/Description**

**Methods:**

IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

FCC Method - 47 CFR Part 15 - Digital Devices

Conducted Emissions, Power Lines, 450 KHz to 30 MHz

Radio Emissions

ICES 3548: Electromagnetic Interference - Limits and Methods of Measurement - Information Technology Equipment

**Effective through**

December 31, 20XX

*David F. Alderman*

For the National Institute of Standards and Technology

NVLAP-OTS (11-95)

Figure 1. NVLAP Certificate and Scope of Accreditation (sample)



## LABORATORY ACCREDITATION SUMMARY

The following table summarizes laboratory accreditations by field of testing or calibration as of the date this Directory was prepared for publication. Since some laboratories are accredited in more than one field, the total number of laboratories listed by field of accreditation (see Index B) is greater than the number of laboratories in the system (see Index A).

| <i>PROGRAM GROUP/Field of Accreditation</i>                         | <i>Number of Accreditations</i> |
|---------------------------------------------------------------------|---------------------------------|
| <b>CALIBRATION LABORATORIES GROUP</b>                               |                                 |
| Dimensional                                                         | 19                              |
| Electromagnetics - DC/Low Frequency                                 | 12                              |
| Electromagnetics - RF/Microwave                                     | 6                               |
| Ionizing Radiation                                                  | 6                               |
| Mechanical                                                          | 18                              |
| Optical Radiation                                                   | 2                               |
| Thermodynamic                                                       | 9                               |
| Time and Frequency                                                  | 12                              |
| <b>CHEMICAL CALIBRATION LABORATORIES GROUP</b>                      |                                 |
| NIST Traceable Reference Materials (NTRMs)                          | 3                               |
| Providers of Proficiency Testing (PPT)                              | 12                              |
| <b>DOSIMETRY GROUP/Ionizing Radiation Dosimetry</b>                 | 39                              |
| <b>ELECTROMAGNETIC COMPATIBILITY &amp; TELECOMMUNICATIONS GROUP</b> | 186                             |
| <b>ENVIRONMENTAL GROUP/Asbestos Fiber Analysis:</b>                 |                                 |
| PLM test method                                                     | 263                             |
| TEM test method                                                     | 75                              |
| <b>FASTENERS AND METALS GROUP</b>                                   | 49                              |
| <b>INFORMATION TECHNOLOGY SECURITY TESTING GROUP</b>                |                                 |
| Common Criteria Testing                                             | 5                               |
| Cryptographic Module Testing                                        | 5                               |
| <b>PRODUCT TESTING GROUP</b>                                        |                                 |
| Acoustical Testing Services                                         | 24                              |
| Carpet and Carpet Cushion                                           | 12                              |
| Commercial Products Testing                                         | 8                               |
| (Paints, Paper, Plastics, Plumbing, Roofing, Seals/Sealants)        |                                 |
| Construction Materials Testing                                      | 15                              |
| Efficiency of Electric Motors                                       | 11                              |
| Energy Efficient Lighting Products                                  | 11                              |
| Thermal Insulation Materials                                        | 15                              |
| Wood Based Products                                                 | 5                               |
| <b>TOTAL ACCREDITATIONS</b>                                         | 822                             |

## HOW TO USE THIS DIRECTORY

The *2001 Directory* lists laboratories accredited by NVLAP. It consists of six indexes which are cross-referenced by NVLAP Lab Code, a unique identifier assigned to each laboratory; e.g., 100000-0. The Directory enables the user to locate name, address, contact, and accreditation information about laboratories of interest. The user should contact the laboratories directly to get information beyond that provided here.

**INDEX A, LISTING BY LABORATORY NAME**, lists all laboratories in alphabetical order by laboratory name. The name of each laboratory is listed as it appears on its application for accreditation.

**INDEX B, LISTING BY FIELD OF ACCREDITATION**, lists all laboratories in alphabetical order by laboratory name within field of accreditation. The index is organized by PROGRAM GROUPS, which are groups of Laboratory Accreditation Programs (LAPs) assembled in categories of technical fields for efficiency in management (see page 6). Listed under each PROGRAM GROUP are the technical fields of accreditation managed within that GROUP. Laboratories accredited in more than one field will have more than one listing in this index.

**INDEX C, LISTING BY STATE/COUNTRY**, lists all laboratories in alphabetical order by laboratory name within state. The states are designated by the standard two-letter postal abbreviations. Laboratories located outside of the United States are listed at the end of the index. Index C also indicates the field of accreditation for each laboratory.

**INDEX D, LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE**, lists all testing laboratories in numerical order by NVLAP Lab Code. There is only one listing per Lab Code in Index D.

**INDEX E, LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE**, lists calibration laboratories in numerical order by NVLAP Lab Code. There is only one listing per Lab Code in Index E.

**INDEX F, LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE**, lists chemical calibration laboratories in numerical order by NVLAP Lab Code. There are two fields of accreditation listed in Index F: NIST Traceable Reference Materials (NTRMs) and Providers of Proficiency Testing (PPT).

### INFORMATION CONTAINED IN INDEXES D, E, AND F

Each laboratory receives a Certificate of Accreditation and a Scope of Accreditation when accreditation is granted or renewed. The Scope of Accreditation details the methods and services for which accreditation has been granted to a laboratory. Indexes D, E, and F present a condensation of the Scope(s) of Accreditation for testing, calibration, and chemical calibration laboratories, respectively.

The following information is presented for each laboratory listed in Indexes D, E, or F:

- (a) NVLAP Lab Code;
- (b) Laboratory name and address;
- (c) Authorized representative (contact);
- (d) Phone number;
- (e) Fax number;
- (f) E-mail address (if available);
- (g) URL (web site) address (if available);

- (h) Field of accreditation;
- (i) Accreditation expiration date; and
- (j) Scope of accreditation.

## HOW TO LOCATE SPECIFIC INFORMATION

### *For a laboratory whose name is known*

Refer to Index A and note the laboratory's NVLAP Lab Code. Look up the Lab Code in Index D, E or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

### *For a laboratory in a particular geographic area*

Determine the states (or country) included in the geographic area of interest. Refer to Index C to obtain the NVLAP Lab Code of a laboratory within the selected geographic area for a given field of accreditation. Look up the Lab Code in Index D, E, or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

### *For a laboratory in a particular field of accreditation*

Choose the field of accreditation from the list on page 6. Refer to Index B and note the name and Lab Code of each laboratory of interest. Index B is organized by field of accreditation within major program group. Look up the Lab Code in Index D, E, or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

## SPECIAL NOTE ABOUT LABORATORIES ACCREDITED IN ASBESTOS FIBER ANALYSIS

The test method designations for Bulk Asbestos Analysis (PLM) and Airborne Asbestos Analysis (TEM) are as follows:

### **NVLAP**

#### ***Code                      Program Title/Test Method Designation***

18/A01                      BULK ASBESTOS ANALYSIS (PLM)

U.S. Environmental Protection Agency (EPA) "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" as found in 40 Code of Federal Regulations (CFR), Part 763, Subpart F, Appendix A, or the current U.S. EPA method for the analysis of asbestos in building material.

18/A02                      AIRBORNE ASBESTOS ANALYSIS (TEM)

U.S. Environmental Protection Agency (EPA) "Interim Transmission Electron Microscopy Analytical Methods—Mandatory and Nonmandatory—and Mandatory Section to Determine Completion of Response Actions" as found in 40 Code of Federal Regulations (CFR), Part 763, Subpart E, Appendix A.

**INDEX**

**A**

**LISTING BY  
LABORATORY  
NAME**





# INDEX A. LISTING BY LABORATORY NAME

| LABORATORY NAME                                                     | NVLAP<br>LAB CODE | CITY               | STATE/<br>COUNTRY |
|---------------------------------------------------------------------|-------------------|--------------------|-------------------|
| <b>3</b>                                                            |                   |                    |                   |
| 3M Product Safety EMC Laboratory                                    | 200033-0          | St. Paul           | MN                |
| <b>A</b>                                                            |                   |                    |                   |
| A & B Environmental Services, Inc.                                  | 101793-0          | Houston            | TX                |
| A-Pex International Co., Ltd. Yamakita<br>Laboratory                | 200441-0          | Ashigarakami-gun   | JAPAN             |
| A-Pex International Co., Ltd. Yokowa<br>Laboratory                  | 200109-0          | Mie-ken            | JAPAN             |
| A.E.S.L. Environmental Laboratory                                   | 200303-0          | Tempe              | AZ                |
| A.O. Smith (Lexington) Engineering<br>Laboratory                    | 200053-0          | Lexington          | TN                |
| A.R.C. Laboratories, Inc.                                           | 101832-0          | Grand Forks        | ND                |
| Absolute Standards, Inc.                                            | 200390-0          | Hamden             | CT                |
| Accredited Environmental Technologies, Inc.                         | 101051-0          | Media              | PA                |
| AccuStandard, Inc.                                                  | 200389-0          | New Haven          | CT                |
| ACM Environmental, Inc.                                             | 101977-0          | South Bend         | IN                |
| Acos Villares SA - Chemical Laboratory                              | 200394-0          | Pindamonhangaba SP | BRAZIL            |
| Acoustic Systems Acoustical Research<br>Facility                    | 100286-0          | Austin             | TX                |
| Advance Data Technology Corporation                                 | 200102-0          | Taipei Hsien       | TAIWAN            |
| Advance Data Technology Corporation Hsin<br>Chu EMC Laboratory      | 200376-0          | Hsin Chu Hsien     | TAIWAN            |
| Advanced Compliance Laboratory                                      | 200101-0          | Hillsborough       | NJ                |
| Advanced Energy, Industrial Energy<br>Laboratory                    | 200081-0          | Raleigh            | NC                |
| Advanced Industrial Hygiene Services, Inc.                          | 101006-0          | Miami              | FL                |
| Advantest Analysis Labroatory Ltd. EMC<br>Center                    | 200477-0          | Gunma              | JAPAN             |
| Aearo Company, E·A·RCAL Acoustical<br>Laboratory                    | 100374-0          | Indianapolis       | IN                |
| Aerospace NYLOK - a subsidiary of the<br>NYLOK Fastener Corporation | 200271-0          | Hawthorne          | NJ                |
| AES International                                                   | 200051-0          | Santurce           | PR                |
| AGX, Inc.                                                           | 101578-0          | Cranberry Township | PA                |
| AHD                                                                 | 200129-0          | Dowagiac           | MI                |
| Aires Consulting Group, Inc.                                        | 101014-0          | Batavia            | IL                |
| Airtek Environmental Corp.                                          | 102011-0          | New York           | NY                |
| Akzo Kashima Ltd., Kawasaki Technical<br>Center                     | 200300-0          | Kawasaki           | JAPAN             |
| Akzo Nobel K.K., Kakegawa EMC Test Site                             | 100290-2          | Shizuoka           | JAPAN             |
| Akzo Nobel K.K., Kashima EMC Site                                   | 100290-0          | Ibaraki            | JAPAN             |
| Akzo Nobel K.K., Matsuda EMC Test Site                              | 100290-4          | Kanagawa           | JAPAN             |
| Akzo Nobel K.K., Nagano EMC Test Site                               | 100290-3          | Nagano             | JAPAN             |
| Akzo Nobel K.K., Tochigi EMC Test Site                              | 100290-5          | Tochigi            | JAPAN             |
| ALAC                                                                | 200323-0          | New York           | NY                |
| Allegheny Asbestos Analysis                                         | 101704-0          | Carnegie           | PA                |
| Alpine Consulting, Inc.                                             | 102089-0          | Colorado Springs   | CO                |
| AMA Analytical Services, Inc.                                       | 101143-0          | Lanham             | MD                |
| Ambient Group, Inc.                                                 | 101618-0          | Glen Cove          | NY                |
| AMEC Earth & Environmental, Inc., PLM<br>LAB                        | 200444-0          | Phoenix            | AZ                |
| American Asbestos Laboratories, Inc.                                | 101775-0          | Miami Lakes        | FL                |
| American Carpet Laboratories, Inc.                                  | 100139-0          | Ringgold           | GA                |

# INDEX A. LISTING BY LABORATORY NAME - continued

| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY                | STATE/<br>COUNTRY |
|----------------------------------------------------------------------|-------------------|---------------------|-------------------|
| American Medical Laboratories, Inc.                                  | 101136-0          | Chantilly           | VA                |
| American Testing Laboratories, Inc.                                  | 100146-0          | Lancaster           | PA                |
| Analab, LLC                                                          | 200260-0          | Sterling            | PA                |
| Analytica Solutions, Inc.                                            | 101086-0          | Thornton            | CO                |
| Analytical Chemistry Services (ACS), Dolan<br>Chemical Lab           | 102102-0          | Columbus            | OH                |
| Analytical Environmental Services, Inc.                              | 102082-0          | Atlanta             | GA                |
| Analytical Industries, Inc.                                          | 101855-0          | Paducah             | KY                |
| Analytical Labs San Francisco, Inc.                                  | 101909-0          | San Francisco       | CA                |
| Analytical Products Group, Inc.                                      | 200384-0          | Belpre              | OH                |
| AnalyticaLab                                                         | 101727-0          | Willow Springs      | IL                |
| Analytics Corporation                                                | 101004-0          | Richmond            | VA                |
| Andover Corporation                                                  | 200461-0          | Salem               | NH                |
| APA - The Engineered Wood Association<br>Research Center             | 100423-0          | Tacoma              | WA                |
| Apex Research, Inc.                                                  | 102118-0          | Whitmore Lake       | MI                |
| Apollo Environmental, Inc.                                           | 101871-0          | Gibsonston          | FL                |
| Apple Computer, Inc., EMC Compliance<br>Laboratory                   | 200071-0          | Cupertino           | CA                |
| Applied Environmental, Inc.                                          | 101611-0          | Reston              | VA                |
| Architectural Testing Inc.                                           | 200361-0          | York                | PA                |
| Armstrong Acoustic Labs, Armstrong World<br>Ind., Inc. Innov. Center | 100228-0          | Lancaster           | PA                |
| ASBESTECH                                                            | 101442-0          | Carmichael          | CA                |
| Asbestos Analysis and Information Service,<br>Inc.                   | 101261-0          | Four Oaks           | NC                |
| Asbestos Consulting & Testing (ACT)                                  | 101649-0          | Lenexa              | KS                |
| Asbestos TEM Laboratories, Inc.                                      | 101891-0          | Berkeley            | CA                |
| Asbestos TEM Laboratories, Inc.                                      | 200104-0          | Sparks              | NV                |
| Assaigai Analytical Laboratories, Inc.                               | 101457-0          | Albuquerque         | NM                |
| AST International Environmental Consultants<br>Inc.                  | 200474-0          | Spring Valley       | CA                |
| ATC Associates Inc.                                                  | 101187-0          | New York            | NY                |
| ATC Associates Inc.                                                  | 200250-0          | Columbia            | MD                |
| ATC Associates, Inc.                                                 | 102031-0          | Englewood           | CO                |
| Athenica Environmental Services, Inc.                                | 101958-0          | Long Island City    | NY                |
| Atlan Laboratories                                                   | 200492-0          | McLean              | VA                |
| Atomic Energy Industrial Laboratory of the<br>Southwest, Inc.        | 100556-0          | Houston             | TX                |
| Auditory Systems Laboratory, ISE<br>Department, Virginia Tech        | 200479-0          | Blacksburg          | VA                |
| Audix Technology (Shanghai) Co., Ltd.                                | 200371-0          | Shanghai            | CHINA             |
| AUDIX Technology (Shenzhen) Co., Ltd.                                | 200372-0          | Shenzhen, Guangdong | CHINA             |
| Aurora Consolidated Laboratories                                     | 101661-0          | West Allis          | WI                |

## B

|                                                     |          |               |                |
|-----------------------------------------------------|----------|---------------|----------------|
| BAE Environmental and EMC Test Centre               | 200304-0 | Kent          | UNITED KINGDOM |
| BAE Systems                                         | 200425-0 | Nashua        | NH             |
| Batta Laboratories, Inc.                            | 101032-0 | Newark        | DE             |
| Battelle - Pacific Northwest National<br>Laboratory | 200216-0 | Richland      | WA             |
| Bay Area Air Quality Management District            | 102090-0 | San Francisco | CA             |
| Bay Area Compliance Laboratory, Corp.               | 200167-0 | Sunnyvale     | CA             |
| BCAG Fastener Quality Test Lab Everett Site         | 200292-0 | Seattle       | WA             |
| Beaulieu of America - Carpet Testing Lab            | 100190-0 | Dalton        | GA             |

**INDEX A. LISTING BY LABORATORY NAME - continued**

| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>              | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|--------------------------|---------------------------|
| Beaulieu of America Hollytex Division                                | 100247-0                  | Anadarko                 | OK                        |
| Bechtel BWXT Idaho, Standards and<br>Calibration Lab                 | 200115-0                  | Idaho Falls              | ID                        |
| Bella Donna Labs Inc.                                                | 101868-0                  | Wauwatosa                | WI                        |
| Benesol Corp.                                                        | 200438-0                  | Sagamihara-shi, Kanagawa | JAPAN                     |
| Bentley Testing Laboratory                                           | 100288-0                  | City of Industry         | CA                        |
| Best Laboratory                                                      | 200484-0                  | Taipei Hsein             | TAIWAN                    |
| Binder Metal Products, Inc.                                          | 200321-0                  | Gardena                  | CA                        |
| Boeing - St. Louis Electromagnetic<br>Compatibility Laboratory       | 200382-0                  | St. Louis                | MO                        |
| BPB America, Inc.                                                    | 200520-0                  | St. Petersburg           | FL                        |
| Braun Intertec Corporation                                           | 101234-0                  | Minneapolis              | MN                        |
| Brewer Environmental Services Industrial<br>Hygiene Group Laboratory | 102085-0                  | Honolulu                 | HI                        |
| <b>C</b>                                                             |                           |                          |                           |
| CA Laboratories, L.L.C.                                              | 200452-0                  | Baton Rouge              | LA                        |
| Cabletron Systems, Inc.                                              | 200121-0                  | Rochester                | NH                        |
| California Screw Products                                            | 200183-0                  | Paramount                | CA                        |
| Calvert Cliffs Nuclear Power Plant, Inc.                             | 100501-0                  | Lusby                    | MD                        |
| CAM Environmental Services                                           | 200240-0                  | Pasadena                 | TX                        |
| CAMCO Lab                                                            | 101803-0                  | Fontana                  | CA                        |
| Canon D5 RF Anechoic Chamber; FCC Part<br>15; CISPR 22/AS/NZS 3548   | 200478-0                  | Ibaraki                  | JAPAN                     |
| Cape Environmental Management, Inc.                                  | 102111-0                  | Atlanta                  | GA                        |
| Carolina Environmental, Inc.                                         | 101768-0                  | Cary                     | NC                        |
| Carolina Power & Light Company, Harris<br>Energy & Enviro. Center    | 100517-0                  | New Hill                 | NC                        |
| Casey Products, Inc.                                                 | 200278-0                  | Lisle                    | IL                        |
| CBS Fasteners, Inc.                                                  | 200253-0                  | Anaheim                  | CA                        |
| CDRH X-Ray Calibration Laboratory                                    | 105018-0                  | Rockville                | MD                        |
| Celotex Technical Center                                             | 100417-0                  | St. Petersburg           | FL                        |
| Chatfield Technical Consulting Limited                               | 101103-0                  | Mississauga Ontario      | CANADA                    |
| Chemitox EMC Research, Inc.                                          | 200120-0                  | Yamanashi-ken            | JAPAN                     |
| ChemScope, Inc.                                                      | 101061-0                  | North Haven              | CT                        |
| Chomerics Test Services (CTS)                                        | 100296-0                  | Woburn                   | MA                        |
| Chrisope Technologies, A Division of Remel                           | 200388-0                  | Lake Charles             | LA                        |
| Cisco Systems, Inc.                                                  | 200114-0                  | San Jose                 | CA                        |
| City of Los Angeles Department of Water and<br>Power                 | 101111-0                  | Los Angeles              | CA                        |
| City of San Jose, Materials Testing<br>Laboratory                    | 100325-0                  | San Jose                 | CA                        |
| Clark Seif Clark, Inc.                                               | 200324-0                  | Chatsworth               | CA                        |
| Clayton Group Services                                               | 101106-0                  | Seattle                  | WA                        |
| Clayton Group Services                                               | 101125-0                  | Kennesaw                 | GA                        |
| Clinton Power Station                                                | 100570-0                  | Clinton                  | IL                        |
| COACT Inc. CAFE Laboratory                                           | 200416-0                  | Columbia                 | MD                        |
| Commercial Testing Company                                           | 100120-0                  | Dalton                   | GA                        |
| Communication Certification Laboratory                               | 100272-0                  | Salt Lake City           | UT                        |
| Compaq Computer Corp. EMC Test Facility                              | 200078-0                  | Colorado Springs         | CO                        |
| Compaq Computer Corp. Emissions Control<br>Lab                       | 200058-0                  | Houston                  | TX                        |
| Compaq Corporate Metrology                                           | 200154-0                  | Houston                  | TX                        |
| Compaq Regulatory Compliance Engineering<br>- East                   | 100413-0                  | Marlboro                 | MA                        |

**INDEX A. LISTING BY LABORATORY NAME - continued**

| <b>LABORATORY NAME</b>                                                  | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>          | <b>STATE/<br/>COUNTRY</b> |
|-------------------------------------------------------------------------|---------------------------|----------------------|---------------------------|
| Compatible Electronics, Inc.                                            | 200063-0                  | Agoura               | CA                        |
| Compliance Eng. Svces, Inc., Compliance<br>Certification Services       | 200065-0                  | Sunnyvale            | CA                        |
| Compliance Test Laboratories, Inc.                                      | 200237-0                  | Liberty              | SC                        |
| Composite Panel Association (CPA)                                       | 100418-0                  | Gaithersburg         | MD                        |
| Comprehensive Health<br>Services-Environmental Health PLM<br>Laboratory | 101759-0                  | Kennedy Space Center | FL                        |
| Computer Sciences Corporation                                           | 200426-0                  | Hanover              | MD                        |
| Con Edison, EH&S - ChemLab                                              | 101558-0                  | Long Island City     | NY                        |
| Con Edison, Indian Point                                                | 100538-0                  | Buchanan             | NY                        |
| Concord Analysis, Inc.                                                  | 101884-0                  | Chatsworth           | CA                        |
| Continental Envirotech, Inc.                                            | 200080-0                  | Mesa                 | AZ                        |
| Converse Consultants                                                    | 102091-0                  | Reno                 | NV                        |
| Cooper Lighting - Metalux Research<br>Laboratories                      | 200050-0                  | Americus             | GA                        |
| Cosmos Corporation                                                      | 200151-0                  | Watarai-gun Mie      | JAPAN                     |
| Covino Environmental Associates, Inc.                                   | 101781-0                  | Woburn               | MA                        |
| Crisp Analytical Laboratory                                             | 200349-0                  | Carrollton           | TX                        |
| Criterion Laboratories, Inc.                                            | 102046-0                  | Bensalem             | PA                        |
| Criterion Technology Corp.                                              | 100396-0                  | Rollinsville         | CO                        |
| CSA International                                                       | 100322-0                  | Toronto Ontario      | CANADA                    |
| CTL Environmental Services                                              | 101216-0                  | Harbor City          | CA                        |
| Cygnacom Solutions, Inc. An Entrust<br>Technologies Company             | 200002-0                  | McLean               | VA                        |

**D**

|                                                                     |          |                 |        |
|---------------------------------------------------------------------|----------|-----------------|--------|
| D.L.S. Electronic Systems, Inc.                                     | 100276-0 | Wheeling        | IL     |
| Dames & Moore, Inc.                                                 | 101433-0 | Salem           | NH     |
| DataChem Laboratories                                               | 101917-0 | Cincinnati      | OH     |
| David L. Ellis Co., Incorporated                                    | 200127-0 | Acton           | MA     |
| Davis & Floyd, Inc.                                                 | 101410-0 | Greenwood       | SC     |
| Davis Environmental Labs, Inc.                                      | 101039-0 | Chicago         | IL     |
| Daybrite Lighting (Genlyte Thomas Group)<br>Photometric Laboratory  | 200016-0 | Tupelo          | MS     |
| Dayton T. Brown, Inc.                                               | 200422-0 | Bohemia         | NY     |
| DCM Science Laboratory, Inc.                                        | 101258-0 | Wheat Ridge     | CO     |
| Dell Regulatory Test Laboratories                                   | 200052-0 | Round Rock      | TX     |
| Denver Instrument Co. Weight Lab                                    | 200106-0 | Arvada          | CO     |
| Design for Health Environmental Services                            | 101864-0 | San Diego       | CA     |
| Detroit Edison, Fermi 2 Dosimetry<br>Laboratory                     | 100529-0 | Newport         | MI     |
| Dexter Fastener Technologies, Inc.                                  | 200144-0 | Dexter          | MI     |
| DH Analytical Services                                              | 102086-0 | Stafford        | TX     |
| DHMH-Air Quality Laboratory                                         | 101523-0 | Baltimore       | MD     |
| Diversified T.E.S.T. Technologies, Inc.                             | 200340-0 | Groton          | NY     |
| Dixon Information Inc.                                              | 101012-0 | South Salt Lake | UT     |
| DL Labs, Inc.                                                       | 100252-0 | New York        | NY     |
| Dodge-Regupol, Inc. Laboratory                                      | 200030-0 | Lancaster       | PA     |
| DOMUS ITSL                                                          | 200017-0 | Ottawa Ontario  | CANADA |
| Dove Environmental Corporation                                      | 102053-0 | Miami           | FL     |
| Dow Chemical N. America Foam Products<br>Research, Prod. Perf. Lab. | 100103-0 | Midland         | MI     |
| Duke Engineering and Services<br>Environmental Laboratory           | 100524-0 | Marlborough     | MA     |



# INDEX A. LISTING BY LABORATORY NAME - continued

| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY            | STATE/<br>COUNTRY |
|----------------------------------------------------------------------|-------------------|-----------------|-------------------|
| Duke Power Company Dosimetry Laboratory                              | 100505-0          | Charlotte       | NC                |
| Durkee Testing Laboratories, Inc.                                    | 200178-0          | Paramount       | CA                |
| Dwight D.I.C., Inc.                                                  | 200405-0          | Lyndhurst       | NJ                |
| <b>E</b>                                                             |                   |                 |                   |
| E. M. Analytical, Inc.                                               | 101902-0          | Dania           | FL                |
| EA Group                                                             | 101019-0          | Mentor          | OH                |
| EAI, Inc.                                                            | 102114-0          | Jersey City     | NJ                |
| Eastern Analytical Services, Inc.                                    | 101646-0          | Elmsford        | NY                |
| Eastern Materials Testing Lab a division of<br>Jaworski Geotech      | 100315-0          | Berlin          | CT                |
| Eastman Kodak Co.-Regulatory Compliance<br>Center-EMC Facility       | 200313-0          | Rochester       | NY                |
| Eaton E3 Laboratory                                                  | 100382-0          | Southfield      | MI                |
| EcoSystems Environmental, Inc.                                       | 101162-0          | Carrollton      | TX                |
| Electric Boat Corp/A General Dynamics Co.<br>Radiological Ctrl. Dept | 100560-0          | Groton          | CT                |
| Electro Magnetic Test, Inc.                                          | 200147-0          | Mountain View   | CA                |
| Electronic Automation                                                | 200410-0          | Grand Rapids    | MI                |
| Electronic Research & Service<br>Organization/ITRI                   | 200118-0          | Chutung Hsinchu | TAIWAN            |
| Electronics Test Centre                                              | 200282-0          | Kanata, Ont.    | CANADA            |
| Electronics Testing Center, Taiwan                                   | 200133-0          | Taoyuan Hsien   | TAIWAN            |
| Elite Electronic Engineering Inc.                                    | 100278-0          | Downers Grove   | IL                |
| Elliott Laboratories, Inc.                                           | 200069-0          | Sunnyvale       | CA                |
| EMC Automation, a TDK Group Company                                  | 200430-0          | Cedar Park      | TX                |
| EMC Compliance Mgmt Group, dba<br>Turntech Scientific & Instr., Inc. | 200068-0          | Mountain View   | CA                |
| EMC Corporation                                                      | 100339-0          | Westboro        | MA                |
| EMCE Engineering, Inc.                                               | 200092-0          | Fremont         | CA                |
| EMS Laboratories, Inc.                                               | 101218-0          | Pasadena        | CA                |
| EMSL Analytical Inc. Bulk And Airborne<br>Asbestos Fiber Analysis    | 200399-0          | Chicago         | IL                |
| EMSL Analytical Inc. Mobile Laboratory                               | 200481-0          | Westmont        | NJ                |
| EMSL Analytical, Inc.                                                | 101048-0          | Westmont        | NJ                |
| EMSL Analytical, Inc.                                                | 101048-1          | Atlanta         | GA                |
| EMSL Analytical, Inc.                                                | 101048-2          | Piscataway      | NJ                |
| EMSL Analytical, Inc.                                                | 101048-3          | Milpitas        | CA                |
| EMSL Analytical, Inc.                                                | 101048-4          | Ann Arbor       | MI                |
| EMSL Analytical, Inc.                                                | 101048-9          | New York        | NY                |
| EMSL Analytical, Inc.                                                | 101048-10         | Carle Place     | NY                |
| EMSL Analytical, Inc.                                                | 101151-0          | Orlando         | FL                |
| EMSL Analytical, Inc.                                                | 102104-0          | Greensboro      | NC                |
| EMSL Analytical, Inc.                                                | 102106-0          | Houston         | TX                |
| EMSL Analytical, Inc.                                                | 200019-0          | Minneapolis     | MN                |
| EMSL Analytical, Inc.                                                | 200034-0          | Dallas          | TX                |
| EMSL Analytical, Inc.                                                | 200056-0          | Williamsville   | NY                |
| EMSL Analytical, Inc.                                                | 200188-0          | Indianapolis    | IN                |
| EMSL Analytical, Inc.                                                | 200204-0          | N. Miami Beach  | FL                |
| EMSL Analytical, Inc.                                                | 200293-0          | Beltsville      | MD                |
| EMSL Analytical, Inc.                                                | 200333-0          | Elmsford        | NY                |
| EMSL Analytical, Inc.                                                | 200375-0          | Baton Rouge     | LA                |
| ENCORP                                                               | 200013-0          | El Segundo      | CA                |
| Entergy Operations, Inc.                                             | 100535-0          | Killona         | LA                |
| Enviro Techniques, Inc.                                              | 200024-0          | Paterson        | NJ                |
| Enviro-Probe, Inc.                                                   | 101222-0          | Bronx           | NY                |



**INDEX A. LISTING BY LABORATORY NAME - continued**

| <b>LABORATORY NAME</b>                                     | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>            | <b>STATE/<br/>COUNTRY</b> |
|------------------------------------------------------------|---------------------------|------------------------|---------------------------|
| EnviroHealth Technologies, Inc.                            | 200374-0                  | St. Louis              | MO                        |
| EnviroMed Services, Inc.                                   | 101514-0                  | New Haven              | CT                        |
| Environmental Enterprise Group(EEG), Inc.                  | 101587-0                  | Russellville           | AR                        |
| Environmental Hazards Services, L.L.C.                     | 101882-0                  | Richmond               | VA                        |
| Environmental Health Laboratories                          | 101506-0                  | Clayton                | MO                        |
| Environmental Management Consultants, Inc.                 | 101926-0                  | Scottsdale             | AZ                        |
| Environmental Monitoring & Consulting Associates           | 101087-0                  | Somerville             | NJ                        |
| Environmental Resource Associates (ERA)                    | 200386-0                  | Arvada                 | CO                        |
| Environmental Science Services, Inc.                       | 200424-0                  | Lockeford              | CA                        |
| Environmental Services International, Inc.                 | 101306-0                  | St. Albans             | WV                        |
| Environmental Testing and Monitoring Services, Inc.        | 200131-0                  | Virginia Beach         | VA                        |
| Environmental Testing, Inc.                                | 101848-0                  | Middletown             | DE                        |
| Envirotest, Inc.                                           | 101595-0                  | Houston                | TX                        |
| ERI Consulting Engineers, Inc.                             | 101232-0                  | Tyler                  | TX                        |
| ESG Laboratories                                           | 102029-0                  | Indianapolis           | IN                        |
| EssTek Ohio, Inc.                                          | 102093-0                  | Middleburg Heights     | OH                        |
| Exelon Generation Company, LLC - TLD Processing Laboratory | 100541-0                  | Wilmington             | IL                        |
| <b>F</b>                                                   |                           |                        |                           |
| Fairfield Testing Laboratory, Inc.                         | 100317-0                  | Stamford               | CT                        |
| Fairway Testing Company, Inc.                              | 100340-0                  | Stony Point            | NY                        |
| Family Analytical Laboratory Services, Inc.                | 200448-0                  | Denver                 | CO                        |
| Fastener Innovation Technology, Inc.                       | 200179-0                  | Gardena                | CA                        |
| FENOC, Beaver Valley Power Station                         | 100521-0                  | Shippingport           | PA                        |
| Fiberquant, Inc.                                           | 101031-0                  | Phoenix                | AZ                        |
| Fibertec, Inc.                                             | 101510-0                  | Holt                   | MI                        |
| Flextronics EMC Laboratories East Coast Operations         | 200094-0                  | Youngsville            | NC                        |
| Florida Power & Light Company                              | 100544-0                  | Juno Beach             | FL                        |
| Fluke Corporation Primary Standards Laboratory             | 105016-0                  | Everett                | WA                        |
| Fluor Fernald, Inc., Analytical Laboratory Services        | 102010-0                  | Cincinnati             | OH                        |
| Fong Prean Industrial Co., Ltd.                            | 200288-0                  | Kaohsiung Hsien        | TAIWAN                    |
| Forensic Analytical                                        | 101459-0                  | Hayward                | CA                        |
| Forensic Analytical Specialties, Inc.                      | 101459-1                  | Rancho Domingues       | CA                        |
| FRS Geotech, Inc.                                          | 102078-0                  | Denver                 | CO                        |
| Fuji Buhin Kogyo Kabushiki Kaisha                          | 200203-0                  | Ohta Gunma             | JAPAN                     |
| Fuji Component Parts USA, Inc.                             | 200180-0                  | Indianapolis           | IN                        |
| Fujitsu Evaluation Engineering Laboratory                  | 200281-0                  | Numazu, Shizuoka-Pref. | JAPAN                     |
| Fujitsu General EMC Laboratory                             | 200373-0                  | Kawasaki               | JAPAN                     |
| <b>G</b>                                                   |                           |                        |                           |
| Galson Laboratories                                        | 101375-0                  | East Syracuse          | NY                        |
| Garwood Laboratories, Inc.                                 | 200119-0                  | Placentia              | CA                        |
| GE Industrial Systems                                      | 200029-0                  | Rome                   | NY                        |
| GE Lighting- Product Testing                               | 100398-0                  | Cleveland              | OH                        |
| GE Owensboro Test Laboratory                               | 200305-0                  | Owensboro              | KY                        |
| Gelles Laboratories, Division, CC Technologies             | 101170-0                  | Dublin                 | OH                        |
| Genicom Corporation                                        | 200342-0                  | Waynesboro             | VA                        |
| Georgia Power Company/Enviro. Affairs,                     | 100551-0                  | Smyrna                 | GA                        |

## INDEX A. LISTING BY LABORATORY NAME - continued

| LABORATORY NAME                      | NVLAP<br>LAB CODE | CITY          | STATE/<br>COUNTRY |
|--------------------------------------|-------------------|---------------|-------------------|
| Enviro. Lab-Dosimetry                |                   |               |                   |
| Geoscience Ltd.                      | 100142-0          | San Diego     | CA                |
| Ginna Nuclear Station                | 100514-0          | Ontario       | NY                |
| GLE Associates, Inc.                 | 102003-0          | Tampa         | FL                |
| Global EMC Standard Tech. Corp.      | 200085-0          | Taipei County | TAIWAN            |
| Global Testing                       | 200436-0          | Santa Ana     | CA                |
| GSC Environmental Laboratories, Inc. | 101626-0          | Augusta       | GA                |
| GTE Electronic Repair Services       | 200352-0          | Fort Wayne    | IN                |

## H

|                                               |          |                |        |
|-----------------------------------------------|----------|----------------|--------|
| Hart Scientific Calibration Laboratory        | 200348-0 | American Fork  | UT     |
| Health Science Associates                     | 101384-0 | Los Alamitos   | CA     |
| Henry Troemner, LLC                           | 105013-0 | Thorofare      | NJ     |
| Hewlett Packard, Product Test Lab, San Diego  | 200138-0 | San Diego      | CA     |
| Hi-Tech Environmental and Laboratory Services | 102013-0 | Cypress        | CA     |
| HIH Laboratory, Inc.                          | 101233-0 | Webster        | TX     |
| Hillmann Environmental Group, L.L.C.          | 101421-0 | Union          | NJ     |
| Hitachi Information Technology Co., Ltd.      | 200186-0 | Kanagawa       | JAPAN  |
| Holmes Environmental, Inc.                    | 200467-0 | Norfolk        | VA     |
| Holometrix - Micromet                         | 100113-0 | Bedford        | MA     |
| HomeTek Technology Inc.                       | 200331-0 | Taipei Shien   | TAIWAN |
| Honeywell FM&T Metrology                      | 200108-0 | Kansas City    | MO     |
| Howard Leight Acoustical Testing Laboratory   | 200475-0 | San Diego      | CA     |
| Hubbell Lighting Photometric Laboratory       | 200020-0 | Christiansburg | VA     |
| Hufcor Laboratory                             | 100239-0 | Janesville     | WI     |
| Hygeia Laboratories Inc.                      | 102116-0 | Sierra Madre   | CA     |
| Hygeia Laboratories, Inc.                     | 102087-0 | Marietta       | GA     |
| Hygeia Laboratories, Inc.                     | 200335-0 | Miami          | FL     |
| HYGENIX, INC.                                 | 101199-0 | Stamford       | CT     |
| Hygieneering, Inc.                            | 101997-0 | Willowbrook    | IL     |
| Hygienetics Laboratory Services               | 101147-0 | Boston         | MA     |

## I

|                                                                |          |                        |       |
|----------------------------------------------------------------|----------|------------------------|-------|
| IAPMO Testing and Services, L.L.C.                             | 200460-0 | Walnut                 | CA    |
| IBM Austin EMC                                                 | 200112-0 | Austin                 | TX    |
| IBM Endicott EMC Lab                                           | 200418-0 | Endicott               | NY    |
| IBM Hudson Valley Acoustics Laboratory                         | 100323-0 | Poughkeepsie           | NY    |
| IBM Poughkeepsie EMC Laboratory                                | 200435-0 | Poughkeepsie           | NY    |
| IBM Rochester EMC Lab                                          | 200091-0 | Rochester              | MN    |
| IBM RTP PSG EMC Test Labs                                      | 200200-0 | Research Triangle Park | NC    |
| IBM Shock and Vibration Laboratory                             | 200503-0 | Poughkeepsie           | NY    |
| IBM Yamato EMC Engineering                                     | 200198-0 | Yamato Kanagawa        | JAPAN |
| ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc. | 100555-0 | Costa Mesa             | CA    |
| IIT Research Institute/R&B Operation                           | 100280-0 | West Conshohocken      | PA    |
| Independent Materials Testing Laboratories, Inc.               | 100316-0 | Plainville             | CT    |
| Independent Textile Testing Service, Inc.                      | 100166-0 | Dalton                 | GA    |
| Indiana Division of Weights and Measures                       | 200421-0 | Indianapolis           | IN    |
| Industrial Acoustics Company, Inc.,                            | 100404-0 | Bronx                  | NY    |
| Aero-Acoustics Laboratory                                      |          |                        |       |
| Industrial Laboratory                                          | 102115-0 | Portsmouth             | VA    |

**INDEX A. LISTING BY LABORATORY NAME - continued**

| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>          | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|----------------------|---------------------------|
| INEEL Materials Testing Lab CFA 602                                  | 200415-0                  | Idaho Falls          | ID                        |
| InFocus Systems, Inc.                                                | 200152-0                  | Wilsonville          | OR                        |
| InfoGard Laboratories, Inc.                                          | 100432-0                  | San Luis Obispo      | CA                        |
| Ingersoll Fasteners                                                  | 200208-0                  | Ingersoll Ontario    | CANADA                    |
| Inland Foundation Engineering, Inc.                                  | 100406-0                  | San Jacinto          | CA                        |
| Institute for Environmental Assessment                               | 101249-0                  | Brooklyn Park        | MN                        |
| Instron Field Calibration Laboratory                                 | 200301-0                  | Canton               | MA                        |
| Instron Force Calibration Laboratory                                 | 105023-0                  | Canton               | MA                        |
| Instrument Specialties Co., Inc.                                     | 200076-0                  | Delaware Water Gap   | PA                        |
| Integrex Testing Systems - Product Testing<br>Laboratory             | 100109-0                  | Granville            | OH                        |
| Integrity Design & Test Services, an Entela<br>Company               | 200004-0                  | Littleton            | MA                        |
| Interface Testing Laboratory                                         | 200402-0                  | LaGrange             | GA                        |
| Intermec Technologies Corporation                                    | 100269-0                  | Cedar Rapids         | IA                        |
| International Asbestos Testing Laboratory                            | 101165-0                  | Mt. Laurel           | NJ                        |
| International Standards Laboratory                                   | 200234-0                  | Hsichih Chen, Taipei | TAIWAN                    |
| International Technology Company (ITC)                               | 200172-0                  | Sunol                | CA                        |
| InterOcean EMC Technology Corp.                                      | 200458-0                  | Taipei County        | TAIWAN                    |
| Intertek Testing Services                                            | 200201-0                  | Menlo Park           | CA                        |
| Intertek Testing Services NA Inc.                                    | 100270-0                  | Boxborough           | MA                        |
| Intertek Testing Services NA Inc.                                    | 100274-0                  | Lexington            | KY                        |
| Intertek Testing Services NA Inc.                                    | 100402-0                  | Cortland             | NY                        |
| Intertek Testing Services NA Inc.                                    | 100409-0                  | Duluth               | GA                        |
| Intertek Testing Services NA Inc.                                    | 200031-0                  | Middleton            | WI                        |
| Intertek Testing Services NA Inc.                                    | 200297-0                  | Laguna Niguel        | CA                        |
| Intertek Testing Services NA, Inc.                                   | 200049-0                  | Oakdale              | MN                        |
| Inventec Corp. (Taoyuan) EMC Labs                                    | 200140-0                  | Taoyuan              | TAIWAN                    |
| Iowa Environmental Services, Inc.                                    | 101990-0                  | Des Moines           | IA                        |
| IPS Corporation                                                      | 200012-0                  | Nagano               | JAPAN                     |
| Ivaco Rolling Mills, Chemistry Laboratory                            | 200143-0                  | L'Orignal Ontario    | CANADA                    |
| <b>J</b>                                                             |                           |                      |                           |
| Japan Quality Assurance Org. Chubu Testing<br>Center Shikatsu Branch | 200190-0                  | Aichi                | JAPAN                     |
| Japan Quality Assurance Org. Safety Testing<br>Ctr. Tsuru EMC Branch | 200192-0                  | Yamanashi            | JAPAN                     |
| Japan Quality Assurance Organization<br>Kita-Kansai Testing Center   | 200191-0                  | Osaka                | JAPAN                     |
| Japan Quality Assurance Organization Safety<br>Testing Center        | 200189-0                  | Tokyo                | JAPAN                     |
| Jimmie Ann Bolton                                                    | 101735-0                  | Austin               | TX                        |
| JLC Environmental Consultants, Inc.                                  | 101953-0                  | New York             | NY                        |
| JMR Compliance Engineering                                           | 200413-0                  | Chatsworth           | CA                        |
| JMR Environmental Services Inc.                                      | 200067-0                  | San Diego            | CA                        |
| JMS Environmental Associates, Ltd.                                   | 102012-0                  | Westmont             | IL                        |
| Johns Manville Technical Center                                      | 100425-0                  | Littleton            | CO                        |
| <b>K</b>                                                             |                           |                      |                           |
| KAM Consultants                                                      | 102047-0                  | Long Island City     | NY                        |
| Kansai Electronic Industry Development<br>Center, Ikoma Testing Lab. | 200207-0                  | Ikoma Nara           | JAPAN                     |
| Kellco Services, Inc.                                                | 101331-0                  | Hayward              | CA                        |
| Kevco Services, Inc.                                                 | 101941-0                  | Butler               | PA                        |
| Key Tronic Corp.                                                     | 200096-0                  | Spokane              | WA                        |

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| LABORATORY NAME                                                     | NVLAP<br>LAB CODE | CITY                   | STATE/<br>COUNTRY |
|---------------------------------------------------------------------|-------------------|------------------------|-------------------|
| Kingston Environmental Laboratory                                   | 200041-0          | Lee's Summit           | MO                |
| Knauf Fiber Glass Research Laboratory                               | 100248-0          | Shelbyville            | IN                |
| Kobelco Research Institute, Inc. Stock<br>Company                   | 200169-0          | Kobe                   | JAPAN             |
| Korea Testing & Research Inst. for Chemical<br>Industry-Inchon Off. | 200177-0          | Inchon                 | KOREA             |
| KSL                                                                 | 200442-0          | Jackson                | CA                |
| KTL Dallas, Inc.                                                    | 100426-0          | Lewisville             | TX                |
| KTL Ottawa Inc.                                                     | 100351-0          | Ottawa Ontario         | CANADA            |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory                            | 200274-0          | Komatsu City, Ishikawa | JAPAN             |
| Kyushu Matsushita Electric Test Lab EMC<br>Center                   | 200364-0          | Tosu-shi Saga-ken      | JAPAN             |

## L

|                                                                      |          |                |        |
|----------------------------------------------------------------------|----------|----------------|--------|
| LA Testing                                                           | 200232-0 | S. Pasadena    | CA     |
| Lab/Cor, Inc.                                                        | 101920-0 | Seattle        | WA     |
| Landauer, Inc.                                                       | 100518-0 | Glenwood       | IL     |
| Larron Laboratory                                                    | 101415-0 | Cape Girardeau | MO     |
| Law Engineering and Environmental<br>Services, Inc.                  | 101066-0 | Birmingham     | AL     |
| Law Engineering and Environmental<br>Services, Inc.                  | 101515-0 | Tampa          | FL     |
| Law Engineering and Environmental<br>Services, Inc.                  | 101515-1 | Miami Lakes    | FL     |
| Law Engineering and Environmental<br>Services, Inc.                  | 101973-0 | Dallas         | TX     |
| Law Engineering and Environmental<br>Services, Inc.                  | 102035-0 | Phoenix        | AZ     |
| Leeson Electric - Grafton Engineering<br>Laboratory                  | 200483-0 | Grafton        | WI     |
| Legend Technical Services, Inc.                                      | 102081-0 | St. Paul       | MN     |
| Leland-Powell Fasteners, Inc. Fastener<br>Testing Laboratory         | 200171-0 | Martin         | TN     |
| Levecque Technical Center                                            | 100101-0 | Blue Bell      | PA     |
| LEX Scientific Inc.                                                  | 101949-0 | Guelph Ontario | CANADA |
| LG Electronics, Inc., Quality and Reliability<br>Center              | 200040-0 | Seoul          | KOREA  |
| Liberty Labs, Inc.                                                   | 200123-0 | Kimballton     | IA     |
| Lighting Research Center Lighting Products                           | 200480-0 | Troy           | NY     |
| Litetronics International                                            | 200504-0 | Alsip          | IL     |
| Lithonia Testing Laboratories                                        | 200007-0 | Conyers        | GA     |
| Lockheed Martin Control Systems EMI<br>Laboratory                    | 200142-0 | Johnson City   | NY     |
| Loflin Environmental Services, Inc.                                  | 102044-0 | Houston        | TX     |
| Los Angeles Unified School District                                  | 101505-0 | Los Angeles    | CA     |
| Louisiana Department of Environmental<br>Quality Microanalytical Lab | 102000-0 | Baton Rouge    | LA     |
| Lucent Technologies, Global Product<br>Compliance Lab                | 100275-0 | Holmdel        | NJ     |

## M

|                                        |          |                       |    |
|----------------------------------------|----------|-----------------------|----|
| m.a.c. Paran Consulting Services, Inc. | 102108-0 | Amelia                | OH |
| MAC Fasteners, Inc.                    | 200141-0 | Ottawa                | KS |
| MacLean Fasteners - QC Laboratory      | 200153-0 | Mundelein             | IL |
| MacLean Maynard Laboratory Services    | 200451-0 | Chesterfield Township | MI |



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| <b>LABORATORY NAME</b>                                              | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>        | <b>STATE/<br/>COUNTRY</b> |
|---------------------------------------------------------------------|---------------------------|--------------------|---------------------------|
| MACS Lab, Inc.                                                      | 101948-0                  | Santa Clara        | CA                        |
| Mallinckrodt, Inc.                                                  | 100503-0                  | Maryland Heights   | MO                        |
| Marathon Electric - Wausau Engineering Lab.                         | 200134-0                  | Wausau             | WI                        |
| Marine Chemist Service, Inc.                                        | 101425-0                  | Newport News       | VA                        |
| Materials Analytical Services, Inc.                                 | 101235-0                  | Suwanee            | GA                        |
| Materials Testing, Inc.                                             | 100320-0                  | Milford            | CT                        |
| Matsushita EMC Center                                               | 100428-0                  | Sasayama, Hyogo    | JAPAN                     |
| McCall and Spero Environmental, Inc.                                | 101895-0                  | Louisville         | KY                        |
| McGill AirFlow Corp. Airflow and<br>Acoustical Testing Laboratory   | 200463-0                  | Westerville        | OH                        |
| McKee Environmental Health, Inc.                                    | 101135-0                  | Friendswood        | TX                        |
| MDS Nordion Dosimetry Laboratory                                    | 200370-0                  | Kanata Ontario     | CANADA                    |
| Met Laboratories Incorporated                                       | 200445-0                  | Union City         | CA                        |
| MET Laboratories, Inc.                                              | 100273-0                  | Baltimore          | MD                        |
| Metroplex Metrology Lab, Inc.                                       | 200262-0                  | Fort Worth         | TX                        |
| Michael & Associates                                                | 100427-0                  | State College      | PA                        |
| Michigan Dept. of Agriculture, E.C. Heffron<br>Metrology Laboratory | 200408-0                  | Williamston        | MI                        |
| Micro Air of Texas, Inc.                                            | 102008-0                  | Houston            | TX                        |
| Micro Air, Inc.                                                     | 101221-0                  | Indianapolis       | IN                        |
| Micro Analytical Laboratories, Inc.                                 | 101872-0                  | Emeryville         | CA                        |
| Micro Analytical, Inc.                                              | 101247-0                  | Milwaukee          | WI                        |
| Microcheck, Inc.                                                    | 200391-0                  | Northfield         | VT                        |
| Micron Environmental Labs                                           | 200294-0                  | Arcadia            | CA                        |
| Microscopic Analysis, Inc.                                          | 101037-0                  | St. Louis          | MO                        |
| Midwest Laboratories, Inc.                                          | 101894-0                  | Countryside        | IL                        |
| Minebea Co., Ltd. Fujisawa Manufacturing<br>Unit                    | 200229-0                  | Fujisawa, Kanagawa | JAPAN                     |
| Minnesota Metrology Laboratory                                      | 105003-0                  | St. Paul           | MN                        |
| Minolta Co., Ltd. Toyokawa EMC Lab                                  | 200434-0                  | Toyokawa, Aichi    | JAPAN                     |
| Modern Plating Corporation                                          | 200320-0                  | Freeport           | IL                        |
| Mohawk Industries, Inc.- Lyerly Plant                               | 100156-0                  | Lyerly             | GA                        |
| Motorola EMC Test Services Lab                                      | 200005-0                  | Mansfield          | MA                        |
| Motorola PPG Compliance Laboratory                                  | 200318-0                  | Boynton Beach      | FL                        |
| Motorola SSG EMC/TEMPEST Laboratory                                 | 100405-0                  | Scottsdale         | AZ                        |
| Mountain Laboratories                                               | 101890-0                  | Spokane            | WA                        |
| Murata Mfg. Co., Ltd. Yokohama Technical<br>Center EMM Office       | 200263-0                  | Kanagawa           | JAPAN                     |
| Mystic Air Quality Consultants, Inc.                                | 101282-0                  | Groton             | CT                        |
| <b>N</b>                                                            |                           |                    |                           |
| NAHB Research Center, Inc.                                          | 100104-0                  | Upper Marlboro     | MD                        |
| National Econ Corporation                                           | 102062-0                  | Tustin             | CA                        |
| National Econ Corporation                                           | 200047-0                  | Memphis            | TN                        |
| National Environmental Reference<br>Laboratory                      | 101593-0                  | Denver             | CO                        |
| National Technical Systems                                          | 100347-0                  | Boxborough         | MA                        |
| National Technical Systems                                          | 200245-0                  | Plano              | TX                        |
| Naval Dosimetry Center                                              | 100504-0                  | Bethesda           | MD                        |
| Naval Nuclear Propulsion Program<br>Directorate, Washington, DC     | 100565-0                  | Bremerton          | WA                        |
| NAWC AD 5.1.7.2. EMI Lab                                            | 100408-0                  | Patuxent River     | MD                        |
| NAWC-Aircraft Div. Lakehurst<br>Electromagnetic Interference Lab.   | 200222-0                  | Lakehurst          | NJ                        |
| NCR Corp. San Diego EMC Lab                                         | 200383-0                  | San Diego          | CA                        |



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| <b>LABORATORY NAME</b>                                       | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>           | <b>STATE/<br/>COUNTRY</b> |
|--------------------------------------------------------------|---------------------------|-----------------------|---------------------------|
| NEC Kofu, Ltd., EMC Center                                   | 200433-0                  | Yamanashi             | JAPAN                     |
| NEC Niigata, Ltd, EMC Group                                  | 200490-0                  | Niigata               | JAPAN                     |
| NEC Shizuoka, Ltd. EMC Center                                | 200488-0                  | Shizuoka-ken          | JAPAN                     |
| Nemko EESI, Inc.                                             | 200116-0                  | San Diego             | CA                        |
| Neutron Engineering Inc.                                     | 200145-0                  | Taipei                | TAIWAN                    |
| New York Testing Laboratories, Inc.                          | 101332-0                  | Bay Shore             | NY                        |
| Newport News Shipbuilding Radiological<br>Control Department | 100561-0                  | Newport News          | VA                        |
| NGC Testing Services, National Gypsum<br>Research Center     | 200291-0                  | Buffalo               | NY                        |
| Niche Analysis, Inc.                                         | 102057-0                  | Mount Vernon          | NY                        |
| Nortel Networks BVW Lab                                      | 200098-0                  | Belleville, Ontario   | CANADA                    |
| Northeast Nuclear Energy Co. Dosimetry<br>Laboratory         | 100540-0                  | Waterford             | CT                        |
| Northern Analytical Laboratories, Inc.                       | 101292-0                  | Billings              | MT                        |
| Northern Industrial Hygiene, Inc.                            | 200511-0                  | Burien                | WA                        |
| Northern Testing Laboratories, Inc.                          | 101463-0                  | Fairbanks             | AK                        |
| Northwest EMC, Inc.                                          | 200059-0                  | Hillsboro             | OR                        |
| Northwestern Steel and Wire Company                          | 200224-0                  | Sterling              | IL                        |
| Nova Consulting Group, Inc.                                  | 101545-0                  | Chaska                | MN                        |
| NOVA Machine Products                                        | 200202-0                  | Middleburg Heights    | OH                        |
| Nowicki & Associates, Inc.                                   | 200322-0                  | Federal Way           | WA                        |
| NSI Solutions, Inc.                                          | 200440-0                  | Raleigh               | NC                        |
| NVL Laboratories, Inc.                                       | 102063-0                  | Seattle               | WA                        |
| NY Environmental & Analytical Labs, Inc.                     | 101967-0                  | Port Washington       | NY                        |
| NYLOK Fastener Corporation                                   | 200272-0                  | Anaheim               | CA                        |
| NYLOK Fastener Corporation                                   | 200273-0                  | Macomb                | MI                        |
| NYLOK Fastener Corporation - Chicago<br>Testing Laboratory   | 200275-0                  | Lincolnwood           | IL                        |
| NYS DOH Environmental Laboratory<br>Approval Program         | 200387-0                  | Albany                | NY                        |
| <b>O</b>                                                     |                           |                       |                           |
| O & K Company Limited, Osaka Test Center                     | 200166-0                  | Osaka-Shi             | JAPAN                     |
| O'Brien & Gere Laboratories, Inc.                            | 101343-0                  | Syracuse              | NY                        |
| Oak Ridge Metrology Center                                   | 105000-0                  | Oak Ridge             | TN                        |
| OCCU-TEC, Inc.                                               | 102025-0                  | Kansas City           | MO                        |
| Occupational Health Conservation, Inc.                       | 102050-0                  | Jacksonville          | FL                        |
| Ohio E.M.A. Radiological Instrument<br>Calibration Facility  | 200419-0                  | Columbus              | OH                        |
| Ohtama Co., Ltd. Yamanashi EMC Test Site                     | 200175-0                  | Yamanashi             | JAPAN                     |
| Okai Iron Works Co., Ltd.                                    | 200299-0                  | Izumisano Osaka       | JAPAN                     |
| Okawa Laboratory                                             | 200296-0                  | Naka-gun, Ibaraki-ken | JAPAN                     |
| Oklahoma Bureau of Standards                                 | 200396-0                  | Oklahoma City         | OK                        |
| Oklahoma Dept. of Environmental<br>Quality-DEQ Laboratory    | 102112-0                  | Oklahoma City         | OK                        |
| Olympus EMC Laboratory                                       | 200472-0                  | Tokyo                 | JAPAN                     |
| Omega Environmental Services                                 | 101289-0                  | Hackensack            | NJ                        |
| Omni Environmental, Inc.                                     | 102061-0                  | Austin                | TX                        |
| Optiglass Ltd.                                               | 200466-0                  | Hainault Essex        | UNITED KINGDOM            |
| Orfield Laboratories, Inc.                                   | 200248-0                  | Minneapolis           | MN                        |
| ORIX Rentec EMC Center; Electromagnetic<br>Compatibility     | 200404-0                  | Aiko-Gun, Kanagawa    | JAPAN                     |
| OSRAM SYLVANIA, Test & Measurements<br>Laboratory            | 100403-0                  | Beverly               | MA                        |

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| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY                  | STATE/<br>COUNTRY |
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| <b>P</b>                                                             |                   |                       |                   |
| PA DEP Bureau of Laboratories                                        | 101323-0          | Harrisburg            | PA                |
| Pacific Gas & Electric Company, Diablo<br>Canyon Nuclear Power Plant | 100537-0          | Avila Beach           | CA                |
| Pacific Northwest National Laboratory /<br>Battelle                  | 105020-0          | Richland              | WA                |
| Pacific Rim Environmental, Inc.                                      | 101631-0          | Tukwila               | WA                |
| Palmetto Laboratory, Inc.                                            | 102077-0          | St. Petersburg        | FL                |
| Paradyne Corporation                                                 | 200125-0          | Largo                 | FL                |
| Patriot Environmental Laboratory Services,<br>Inc.                   | 200358-0          | Garden Grove          | CA                |
| PB Fasteners                                                         | 200139-0          | Gardena               | CA                |
| PBS Environmental Building Consultants,<br>Inc.                      | 101910-0          | Portland              | OR                |
| PCI Industries Acoustical Testing<br>Laboratories                    | 200453-0          | Fort Worth            | TX                |
| PCTEST Engineering Laboratory, Inc.                                  | 100431-0          | Columbia              | MD                |
| PDE Laboratories                                                     | 200082-0          | San Clemente          | CA                |
| PEP Testing Laboratory                                               | 200097-0          | Taipei Hsien          | TAIWAN            |
| PFS Corporation                                                      | 100421-0          | Madison               | WI                |
| PFU TECHNOCONSUL EMC Center                                          | 200259-0          | Ishikawa-Ken          | JAPAN             |
| Philip Analytical Services                                           | 101262-0          | Reading               | PA                |
| Philip Environmental Services Corp.                                  | 101192-0          | Columbia              | IL                |
| Philips Electronics Industries (TAIWAN)<br>Ltd.                      | 200137-0          | Chungli, Taoyuan      | TAIWAN            |
| Philips Lighting Corporate Calibration &<br>Standards Laboratory     | 100399-0          | Fairmont              | WV                |
| Philips Testing Service                                              | 200409-0          | Knoxville             | TN                |
| Pinchin Environmental Ltd.                                           | 101270-0          | Mississauga Ontario   | CANADA            |
| Pinnacle West Energy Corp., Palo Verde<br>Nuclear Generating Station | 100536-0          | Tonopah               | AZ                |
| Piolax Inc.                                                          | 200411-0          | Mooka-shi Tochigi-ken | JAPAN             |
| PMK Group, Inc.                                                      | 101301-0          | Kenilworth            | NJ                |
| PPL Susquehanna, LLC                                                 | 100554-0          | Allentown             | PA                |
| Pratt & Whitney Materials Control<br>Lab/Quality & Standards Lab     | 200336-0          | East Hartford         | CT                |
| Precision Testing Laboratories, Inc.                                 | 101580-0          | Moore                 | OK                |
| Professional Service Industries, Inc.,<br>Pittsburgh Test. Lab. Div. | 100430-0          | Eugene                | OR                |
| Professional Testing (EMI), Inc.                                     | 200062-0          | Round Rock            | TX                |
| Professional Testing Laboratory, Inc.                                | 100297-0          | Dalton                | GA                |
| ProScience Analytical Services, Inc.                                 | 200090-0          | Woburn                | MA                |
| Prospect Testing Labs, Inc.                                          | 200328-0          | Des Plaines           | IL                |
| Protocol Analytical Supplies, Inc.                                   | 200395-0          | Middlesex             | NJ                |
| Prottsa, S.A. de C.V.                                                | 200261-0          | Mexico City           | MEXICO            |
| Proxtronic, Inc.                                                     | 100573-0          | Burke                 | VA                |
| PSI                                                                  | 101350-0          | Pittsburgh            | PA                |
| Puget Sound Naval Shipyard                                           | 101539-0          | Bremerton             | WA                |
| PWC Environmental Laboratory, Pearl<br>Harbor                        | 200369-0          | Pearl Harbor          | HI                |
| <b>Q</b>                                                             |                   |                       |                   |
| QuanTEM Laboratories, LLC                                            | 101959-0          | Oklahoma City         | OK                |
| Quest Engineering Solutions, Inc.                                    | 200036-0          | N. Billerica          | MA                |

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|--------------------------------------------------------------------|---------------------------|----------------------|---------------------------|
| Quest MicroAnalytics                                               | 200249-0                  | Dallas               | TX                        |
| Quietek Corporation                                                | 200347-0                  | Hsin-Chu Country     | TAIWAN                    |
| <b>R</b>                                                           |                           |                      |                           |
| R & D Services, Inc.                                               | 200265-0                  | Cookeville           | TN                        |
| R. Robinson Analytical Services, Inc.                              | 102041-0                  | Pensacola            | FL                        |
| Radiation Detection Company                                        | 100512-0                  | Sunnyvale            | CA                        |
| Radiation Laboratory, Taiwan Power Company                         | 100562-0                  | Shihmen, Taipei      | TAIWAN                    |
| Raymond-Beling, Inc.                                               | 101356-0                  | Moline               | IL                        |
| Raytheon Electronic Systems, California Engineering EEE Laboratory | 200431-0                  | El Segundo           | CA                        |
| Raytheon Technical Services Co. EMI Laboratory                     | 200317-0                  | Indianapolis         | IN                        |
| RCM Laboratories, Inc.                                             | 101853-0                  | Countryside          | IL                        |
| Republic Technologies International, Franklin Chemical Laboratory  | 200148-0                  | Johnstown            | PA                        |
| Reservoirs Environmental Services, Inc.                            | 101896-0                  | Denver               | CO                        |
| Resource Technology Corporation (RTC)                              | 200393-0                  | Laramie              | WY                        |
| Retlif Testing Laboratories                                        | 100267-0                  | Ronkonkoma           | NY                        |
| Retlif Testing Laboratories                                        | 100267-1                  | Goffstown            | NH                        |
| Rhein Tech Laboratories, Inc.                                      | 200061-0                  | Herndon              | VA                        |
| RI Analytical Laboratories, Inc.                                   | 101440-0                  | Warwick              | RI                        |
| Rice Lake Weighing Systems                                         | 105001-0                  | Rice Lake            | WI                        |
| Ricoh Company LTD. Ohmori Acoustics Test Site                      | 200345-0                  | Tokyo                | JAPAN                     |
| Ricoh Company, Ltd. Ohmori EMC Center                              | 200163-0                  | Tokyo                | JAPAN                     |
| Riverbank Acoustical Laboratories                                  | 100227-0                  | Geneva               | IL                        |
| RJ Lee Group, Inc.                                                 | 101208-0                  | Monroeville          | PA                        |
| RJ Lee Group, Inc.                                                 | 101208-2                  | San Leandro          | CA                        |
| RJ Lee Group, Inc.                                                 | 101208-3                  | Manassas             | VA                        |
| Rockford Bolt & Steel Co.                                          | 200255-0                  | Rockford             | IL                        |
| Rogers Labs, Inc.                                                  | 200087-0                  | Louisburg            | KS                        |
| Roy F. Weston, Inc.                                                | 101254-0                  | Auburn               | AL                        |
| <b>S</b>                                                           |                           |                      |                           |
| S&ME, Inc.                                                         | 102075-0                  | Charlotte            | NC                        |
| Safe Environment of America, Inc.                                  | 102021-0                  | Auburn               | WA                        |
| SAIC Common Criteria Testing Laboratory                            | 200427-0                  | Columbia             | MD                        |
| Samsung Electronics EMC Laboratory                                 | 200447-0                  | Suwon, Kyungki Do    | KOREA                     |
| San Shing Hardware Works Co., Ltd. Test Laboratory                 | 200158-0                  | Tainan               | TAIWAN                    |
| Sandia National Laboratories                                       | 105002-0                  | Albuquerque          | NM                        |
| Sanmina Homologation Services                                      | 100411-0                  | Santa Clara          | CA                        |
| Saturn Fasteners, Inc.                                             | 200327-0                  | Burbank              | CA                        |
| Schneider Laboratories, Inc.                                       | 101150-0                  | Richmond             | VA                        |
| Scientific Laboratories, Inc.                                      | 101904-0                  | Midlothian           | VA                        |
| Scientific Laboratories, Inc.                                      | 101904-1                  | New York             | NY                        |
| SCILAB BOSTON, Inc.                                                | 102079-0                  | East Weymouth        | MA                        |
| SCILAB California, Inc.                                            | 200346-0                  | Carson               | CA                        |
| SE Laboratories                                                    | 200338-0                  | Santa Clara          | CA                        |
| SEAS, Inc.                                                         | 101185-0                  | Blacksburg           | VA                        |
| Seiko Epson Corporation                                            | 200157-0                  | Shiojiri-City Nagano | JAPAN                     |
| SGS U.S. Testing Company, Inc.                                     | 100416-0                  | Tulsa                | OK                        |
| Shanghai Testing & Inspection Institute for                        | 200407-0                  | Shanghai             | CHINA                     |

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| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>                    | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|--------------------------------|---------------------------|
| Electrical Equipment                                                 |                           |                                |                           |
| Sharp Nara EMC Center, EMI Measurement<br>for ITE                    | 200457-0                  | Yamatokooriyama-shi Nara       | JAPAN                     |
| Shaw Industries, Inc., Central Laboratory<br>Operations              | 100193-0                  | Dalton                         | GA                        |
| SK Tech Co., LTD.                                                    | 200220-0                  | Namyangju-si, Kyunggi-Do       | KOREA                     |
| Small IAC Test Laboratory                                            | 200287-0                  | Peterborough, ON               | CANADA                    |
| SNB Laboratory                                                       | 200308-0                  | Cumberland                     | RI                        |
| Solar Environmental Services, Inc.                                   | 102006-0                  | Anchorage                      | AK                        |
| Sony Bonson EMC Test Laboratory                                      | 200456-0                  | Saitama-ken                    | JAPAN                     |
| Sony Electronics Inc. Product Quality<br>Division EMC Group          | 200312-0                  | San Diego                      | CA                        |
| Sony Ikegami EMC Site                                                | 200439-0                  | Shinagawa, Tokyo               | JAPAN                     |
| Sony Kisarazu EMC Test Laboratory                                    | 200432-0                  | Kisarazu Chiba                 | JAPAN                     |
| Sony Kohda EMC Test Laboratory                                       | 200398-0                  | Nukata-gun Aichi               | JAPAN                     |
| Sony Minokamo EMC Site                                               | 200368-0                  | Gifu-Pref.                     | JAPAN                     |
| South Carolina Department of Health &<br>Environmental Control       | 101572-0                  | Columbia                       | SC                        |
| South Coast Air Quality Management District                          | 101567-0                  | Diamond Bar                    | CA                        |
| South Texas Project Dosimetry Laboratory                             | 100519-0                  | Wadsworth                      | TX                        |
| Southern California Edison                                           | 100506-0                  | San Clemente                   | CA                        |
| Southern California Edison Company                                   | 105014-0                  | Westminster                    | CA                        |
| Special Testing Laboratories, Inc.                                   | 100308-0                  | Bethel                         | CT                        |
| Spectrum Research & Testing Laboratory,<br>Inc.                      | 200099-0                  | Chung-Li, Taoyuan              | TAIWAN                    |
| Spex Certiprep Inc.                                                  | 200392-0                  | Metuchen                       | NJ                        |
| Sporton International, Inc.                                          | 200079-0                  | Taipei Hsien                   | TAIWAN                    |
| SPS Technologies Aerospace Fasteners<br>Group                        | 200298-0                  | Santa Ana                      | CA                        |
| St. of California, Bur. of Home Furnishings<br>& Thermal Insulation  | 100251-0                  | North Highlands                | CA                        |
| STAT Analysis Corporation                                            | 101202-0                  | Chicago                        | IL                        |
| State of Connecticut                                                 | 101237-0                  | Hartford                       | CT                        |
| State of Virginia Metrology Lab                                      | 105007-0                  | Richmond                       | VA                        |
| STERIS-Isomedix Services                                             | 200235-0                  | Morton Grove                   | IL                        |
| Steve Moody Micro Services, Inc.                                     | 102056-0                  | Carrollton                     | TX                        |
| Storagtek Open Area Test Site                                        | 200251-0                  | Louisville                     | CO                        |
| Stork-Twin City Testing Corporation                                  | 200046-0                  | St. Paul                       | MN                        |
| Strategic Weapons Fac. Pacific Cal. Lab.<br>Oper. by Lockheed Martin | 200406-0                  | Silverdale                     | WA                        |
| Strom Environmental                                                  | 200450-0                  | Denver                         | CO                        |
| STS Consultants, Ltd.                                                | 100191-0                  | Vernon Hills                   | IL                        |
| Sumitomo Metals (Kokura), Ltd. Quality<br>System Section             | 200215-0                  | Kitakyushu                     | JAPAN                     |
| Sun City Analytical, Inc.                                            | 101870-0                  | El Paso                        | TX                        |
| Sun Microsystems, Inc. EMC Testing                                   | 200363-0                  | Palo Alto                      | CA                        |
| Sundram Fasteners Limited (Inhouse test<br>laboratory)               | 200212-0                  | Chennai (Madras), Taonil, Nadu | INDIA                     |
| Sundram Fasteners Limited Chemical Testing<br>Laboratory             | 200256-0                  | Andhra Pradesh                 | INDIA                     |
| SWFLANT Calibration Laboratory Operated<br>by Lockheed Martin        | 200403-0                  | Kings Bay                      | GA                        |
| Syonan Site Testing Laboratory as Conducted<br>& Radiated Emissions  | 200482-0                  | Kanagawa                       | JAPAN                     |



# INDEX A. LISTING BY LABORATORY NAME - continued

| LABORATORY NAME                                                 | NVLAP<br>LAB CODE | CITY                      | STATE/<br>COUNTRY |
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| <b>T</b>                                                        |                   |                           |                   |
| Taiwan Tokin EMC Eng. Corp.                                     | 200077-0          | Taipei                    | TAIWAN            |
| Taylor Environmental Group, Inc.                                | 102101-0          | Floral Park               | NY                |
| TDK Corporation's 10m Anechoic Chamber                          | 200309-0          | Ichikawa-shi, Chiba-ken   | JAPAN             |
| TDK Corporation's Chikumagawa Open Site                         | 200319-0          | Saku-shi, Nagano-ken      | JAPAN             |
| TEAC Corporation EMC Center                                     | 200362-0          | Saitama-ken               | JAPAN             |
| TEC-AN, Inc.                                                    | 200325-0          | Oklahoma City             | OK                |
| Techni-Cal Services of Orange Cty, Inc.                         | 200459-0          | Monroe                    | NY                |
| TECO Electric & Machinery Co., Ltd.                             | 200378-0          | Taoyuan                   | TAIWAN            |
| Teco Industry (Malaysia) SDN. BHD.                              | 200476-0          | Penang                    | MALAYSIA          |
| TEM, Incorporated                                               | 101130-0          | Glen Ellyn                | IL                |
| Tennessee Valley Authority External Dosimetry Service           | 100516-0          | Soddy-Daisy               | TN                |
| Test Site Services, Inc.                                        | 100419-0          | Marlboro                  | MA                |
| Test-Con Incorporated                                           | 200018-0          | Danbury                   | CT                |
| Testing Mechanics Corp.                                         | 102001-0          | Seaford                   | NY                |
| Testwell Laboratories, Inc./Testwell Industries, Inc.           | 200083-0          | Ossining                  | NY                |
| The Dow Chemical Company- NA System House-Joliet                | 100210-0          | Joliet                    | IL                |
| The Saul Corporation                                            | 200473-0          | Houston                   | TX                |
| The Scott Lawson Group, Ltd.                                    | 101228-0          | Concord                   | NH                |
| Thermo Spectronic                                               | 200462-0          | Cambridge                 | UNITED KINGDOM    |
| Timberco, Inc.- dba TECO                                        | 100420-0          | Eugene                    | OR                |
| Tokin EMC Engineering Co., Ltd. Kawasaki Facility               | 200217-0          | Kawasaki-city, Kanagawa   | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory       | 200219-0          | Daian-cho, Inabe-gun, Mie | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory        | 200218-0          | Sanda-city, Hyogo         | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory      | 200221-0          | Tsukuba-city, Ibaraki     | JAPAN             |
| TolTest, Inc.                                                   | 101594-0          | Toledo                    | OH                |
| Toshiba Corp., Ome Operations                                   | 200107-0          | Ome Tokyo                 | JAPAN             |
| Toshiba/Houston Test Laboratory                                 | 200088-0          | Houston                   | TX                |
| Training Research Co., Ltd.                                     | 200174-0          | Taipei Hsien              | TAIWAN            |
| TRC Environmental Corporation                                   | 101424-0          | Windsor                   | CT                |
| Tremco, Inc. - Roofing Division, An RPM Company                 | 101188-0          | Beachwood                 | OH                |
| Tri-State Materials Testing Lab, Inc.                           | 200010-0          | Wallingford               | CT                |
| Triad Environmental Consulting, Inc.                            | 102073-0          | Huntington                | WV                |
| Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs | 100559-0          | Research Triangle Park    | NC                |
| TSi, Testing Services, Inc.                                     | 100108-0          | Dalton                    | GA                |
| TUV Product Service, Inc.                                       | 100268-0          | San Diego                 | CA                |
| TUV Product Service, Inc.                                       | 100271-0          | New Brighton              | MN                |
| TUV Product Service, Inc.                                       | 100271-1          | Boulder                   | CO                |
| TUV Rheinland of North America, Inc.                            | 200111-0          | Newtown                   | CT                |
| TUV Telecom Services, Inc.                                      | 200039-0          | St. Paul                  | MN                |
| TUViT, IT Security Laboratory                                   | 200428-0          | Austin                    | TX                |
| Twin Ports Testing, Inc.                                        | 102083-0          | Superior                  | WI                |
| TXU Electric - Comanche Peak Steam Electric Station             | 100528-0          | Glen Rose                 | TX                |



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| LABORATORY NAME                                                  | NVLAP<br>LAB CODE | CITY                    | STATE/<br>COUNTRY |
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| <b>U</b>                                                         |                   |                         |                   |
| U.S. Army Center for Health Promotion and Preventive Medicine    | 200044-0          | Aberdeen Proving Ground | MD                |
| U.S. Army Radiation Standards & Dosimetry Laboratory             | 100539-0          | Redstone Arsenal        | AL                |
| U.S. EPA                                                         | 200231-0          | Las Vegas               | NV                |
| U.S. EPA - National Enforcement Investigations Center            | 101703-0          | Denver                  | CO                |
| Ultra Scientific, Inc.                                           | 200379-0          | North Kingstown         | RI                |
| UltraTech Engineering Labs Inc.                                  | 200093-0          | Oakville, Ontario       | CANADA            |
| Underwriters Laboratories                                        | 200252-0          | Santa Clara             | CA                |
| Underwriters Laboratories Inc.                                   | 100414-0          | Northbrook              | IL                |
| Underwriters Laboratories Inc.                                   | 200214-0          | Camas                   | WA                |
| Underwriters Laboratories, Inc.                                  | 100255-0          | Melville                | NY                |
| Underwriters Laboratories, Inc.                                  | 200246-0          | Research Triangle Park  | NC                |
| Union Electric Company, Callaway Plant                           | 100502-0          | Fulton                  | MO                |
| United Analytical Services, Inc.                                 | 101732-0          | Downers Grove           | IL                |
| United States Dosimetry Technology, Inc.                         | 100571-0          | Richland                | WA                |
| United States Technologies, Inc.                                 | 200162-0          | Alpharetta              | GA                |
| United Steel and Fasteners Inc.                                  | 200341-0          | Itasca                  | IL                |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0          | Concord Ontario         | CANADA            |
| Universal Compliance Laboratories                                | 200117-0          | San Jose                | CA                |
| University (State) Hygienic Laboratory                           | 101288-0          | Iowa City               | IA                |
| University of Alabama Asbestos Laboratory                        | 102005-0          | Tuscaloosa              | AL                |
| US Air Force Center for Radiation Dosimetry                      | 100548-0          | Brooks AFB              | TX                |
| USEM de Mexico, S.A. de C.V.                                     | 200506-0          | Apodaca NL              | Mexico            |
| USG Research - Construction Systems Laboratory                   | 200132-0          | Libertyville            | IL                |
| <b>V</b>                                                         |                   |                         |                   |
| Vartest Laboratories, Inc.                                       | 200027-0          | New York                | NY                |
| Vermont Fasteners Manufacturing                                  | 200254-0          | Swanton                 | VT                |
| Vibro-Acoustics Laboratory                                       | 100424-0          | Scarborough Ontario     | CANADA            |
| VLSI Standards, Inc.                                             | 200302-0          | San Jose                | CA                |
| Volz Environmental Services, Inc.                                | 101269-0          | Pittsburgh              | PA                |
| <b>W</b>                                                         |                   |                         |                   |
| W.R. Grace & Co.                                                 | 200258-0          | Cambridge               | MA                |
| Washington Laboratories, Ltd.                                    | 200066-0          | Gaithersburg            | MD                |
| Wayne Langston, Inc.                                             | 200021-0          | League City             | TX                |
| Webber Gage Division / L.S. Starrett Co.                         | 200038-0          | Cleveland               | OH                |
| Western Analytical Laboratory                                    | 200037-0          | Arleta                  | CA                |
| Western Electro-Acoustic Lab., Inc.                              | 100256-0          | Santa Monica            | CA                |
| White Environmental Consultants Inc.                             | 200124-0          | Anchorage               | AK                |
| White Environmental Consultants, Inc.                            | 200350-0          | Honolulu                | HI                |
| Willamette Industries, Inc. West Coast Development Lab           | 200045-0          | Wilsonville             | OR                |
| Windermere Info. Tech. Sys.                                      | 200084-0          | Annapolis               | MD                |
| Military/Commercial Compliance Lab.                              |                   |                         |                   |
| Wisconsin Occupational Health Laboratory                         | 101109-0          | Madison                 | WI                |
| WKP Laboratories, Inc.                                           | 101950-0          | New York City           | NY                |
| Wolverine Plating Corp.                                          | 200230-0          | Roseville               | MI                |
| Wonder Makers Environmental, Inc.                                | 102065-0          | Kalamazoo               | MI                |

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| <b>LABORATORY NAME</b>                                  | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>              | <b>STATE/<br/>COUNTRY</b> |
|---------------------------------------------------------|---------------------------|--------------------------|---------------------------|
| <b>Y</b>                                                |                           |                          |                           |
| Yamaha EMC Center                                       | 200455-0                  | Tenryu-shi, Shizuoka-ken | JAPAN                     |
| <b>Z</b>                                                |                           |                          |                           |
| Zacta Technology Corporation Yonezawa<br>Testing Center | 200306-0                  | Yonezawa-shi Yamagata    | JAPAN                     |



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**B**

**LISTING BY  
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## INDEX B. LISTING BY FIELD OF ACCREDITATION

| LABORATORY NAME                                                   | NVLAP<br>LAB CODE | CITY            | STATE/<br>COUNTRY |
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| <b>CALIBRATION LABORATORIES GROUP</b>                             |                   |                 |                   |
| <i><b>Dimensional</b></i>                                         |                   |                 |                   |
| Bechtel BWXT Idaho, Standards and Calibration Lab                 | 200115-0          | Idaho Falls     | ID                |
| Dwight D.I.C., Inc.                                               | 200405-0          | Lyndhurst       | NJ                |
| GE Industrial Systems                                             | 200029-0          | Rome            | NY                |
| Honeywell FM&T Metrology                                          | 200108-0          | Kansas City     | MO                |
| Indiana Division of Weights and Measures                          | 200421-0          | Indianapolis    | IN                |
| Instron Field Calibration Laboratory                              | 200301-0          | Canton          | MA                |
| Metroplex Metrology Lab, Inc.                                     | 200262-0          | Fort Worth      | TX                |
| Michigan Dept. of Agriculture, E.C. Heffron Metrology Laboratory  | 200408-0          | Williamston     | MI                |
| Minnesota Metrology Laboratory                                    | 105003-0          | St. Paul        | MN                |
| Oak Ridge Metrology Center                                        | 105000-0          | Oak Ridge       | TN                |
| Oklahoma Bureau of Standards                                      | 200396-0          | Oklahoma City   | OK                |
| Sandia National Laboratories                                      | 105002-0          | Albuquerque     | NM                |
| Southern California Edison Company                                | 105014-0          | Westminster     | CA                |
| State of Virginia Metrology Lab                                   | 105007-0          | Richmond        | VA                |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0          | Silverdale      | WA                |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin        | 200403-0          | Kings Bay       | GA                |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc.  | 200311-0          | Concord Ontario | CANADA            |
| VLSI Standards, Inc.                                              | 200302-0          | San Jose        | CA                |
| Webber Gage Division / L.S. Starrett Co.                          | 200038-0          | Cleveland       | OH                |
| <i><b>Electromagnetics - DC/Low Frequency</b></i>                 |                   |                 |                   |
| Bechtel BWXT Idaho, Standards and Calibration Lab                 | 200115-0          | Idaho Falls     | ID                |
| Compaq Corporate Metrology                                        | 200154-0          | Houston         | TX                |
| Electronic Automation                                             | 200410-0          | Grand Rapids    | MI                |
| Fluke Corporation Primary Standards Laboratory                    | 105016-0          | Everett         | WA                |
| GE Industrial Systems                                             | 200029-0          | Rome            | NY                |
| GTE Electronic Repair Services                                    | 200352-0          | Fort Wayne      | IN                |
| Hart Scientific Calibration Laboratory                            | 200348-0          | American Fork   | UT                |
| Sandia National Laboratories                                      | 105002-0          | Albuquerque     | NM                |
| SE Laboratories                                                   | 200338-0          | Santa Clara     | CA                |
| Southern California Edison Company                                | 105014-0          | Westminster     | CA                |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0          | Silverdale      | WA                |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin        | 200403-0          | Kings Bay       | GA                |
| <i><b>Electromagnetics - RF/Microwave</b></i>                     |                   |                 |                   |
| Compaq Corporate Metrology                                        | 200154-0          | Houston         | TX                |
| Honeywell FM&T Metrology                                          | 200108-0          | Kansas City     | MO                |
| IPS Corporation                                                   | 200012-0          | Nagano          | JAPAN             |
| Liberty Labs, Inc.                                                | 200123-0          | Kimballton      | IA                |
| Sandia National Laboratories                                      | 105002-0          | Albuquerque     | NM                |
| SE Laboratories                                                   | 200338-0          | Santa Clara     | CA                |

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| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY            | STATE/<br>COUNTRY |
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| <b><i>Ionizing Radiation</i></b>                                     |                   |                 |                   |
| CDRH X-Ray Calibration Laboratory                                    | 105018-0          | Rockville       | MD                |
| MDS Nordion Dosimetry Laboratory                                     | 200370-0          | Kanata Ontario  | CANADA            |
| Ohio E.M.A. Radiological Instrument<br>Calibration Facility          | 200419-0          | Columbus        | OH                |
| Pacific Northwest National Laboratory /<br>Battelle                  | 105020-0          | Richland        | WA                |
| Sandia National Laboratories                                         | 105002-0          | Albuquerque     | NM                |
| STERIS-Isomedix Services                                             | 200235-0          | Morton Grove    | IL                |
| <b><i>Mechanical</i></b>                                             |                   |                 |                   |
| Bechtel BWXT Idaho, Standards and<br>Calibration Lab                 | 200115-0          | Idaho Falls     | ID                |
| David L. Ellis Co., Incorporated                                     | 200127-0          | Acton           | MA                |
| Denver Instrument Co. Weight Lab                                     | 200106-0          | Arvada          | CO                |
| Henry Troemner, LLC                                                  | 105013-0          | Thorofare       | NJ                |
| Honeywell FM&T Metrology                                             | 200108-0          | Kansas City     | MO                |
| Indiana Division of Weights and Measures                             | 200421-0          | Indianapolis    | IN                |
| Instron Field Calibration Laboratory                                 | 200301-0          | Canton          | MA                |
| Instron Force Calibration Laboratory                                 | 105023-0          | Canton          | MA                |
| Michigan Dept. of Agriculture, E.C. Heffron<br>Metrology Laboratory  | 200408-0          | Williamston     | MI                |
| Minnesota Metrology Laboratory                                       | 105003-0          | St. Paul        | MN                |
| Oak Ridge Metrology Center                                           | 105000-0          | Oak Ridge       | TN                |
| Oklahoma Bureau of Standards                                         | 200396-0          | Oklahoma City   | OK                |
| Rice Lake Weighing Systems                                           | 105001-0          | Rice Lake       | WI                |
| Sandia National Laboratories                                         | 105002-0          | Albuquerque     | NM                |
| Southern California Edison Company                                   | 105014-0          | Westminster     | CA                |
| State of Virginia Metrology Lab                                      | 105007-0          | Richmond        | VA                |
| Strategic Weapons Fac. Pacific Cal. Lab.<br>Oper. by Lockheed Martin | 200406-0          | Silverdale      | WA                |
| United Testing Sys. Canada, Ltd., Dynamic<br>Testing Sys. Int. Inc.  | 200311-0          | Concord Ontario | CANADA            |
| <b><i>Optical Radiation</i></b>                                      |                   |                 |                   |
| Electronic Automation                                                | 200410-0          | Grand Rapids    | MI                |
| Techni-Cal Services of Orange Cty, Inc.                              | 200459-0          | Monroe          | NY                |
| <b><i>Thermodynamic</i></b>                                          |                   |                 |                   |
| Bechtel BWXT Idaho, Standards and<br>Calibration Lab                 | 200115-0          | Idaho Falls     | ID                |
| Electronic Automation                                                | 200410-0          | Grand Rapids    | MI                |
| Fluke Corporation Primary Standards<br>Laboratory                    | 105016-0          | Everett         | WA                |
| GE Industrial Systems                                                | 200029-0          | Rome            | NY                |
| Hart Scientific Calibration Laboratory                               | 200348-0          | American Fork   | UT                |
| Minnesota Metrology Laboratory                                       | 105003-0          | St. Paul        | MN                |
| Oak Ridge Metrology Center                                           | 105000-0          | Oak Ridge       | TN                |
| Sandia National Laboratories                                         | 105002-0          | Albuquerque     | NM                |
| State of Virginia Metrology Lab                                      | 105007-0          | Richmond        | VA                |

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| <b><i>Time &amp; Frequency</i></b>                                |                           |              |                           |
| Bechtel BWXT Idaho, Standards and Calibration Lab                 | 200115-0                  | Idaho Falls  | ID                        |
| Compaq Corporate Metrology                                        | 200154-0                  | Houston      | TX                        |
| Electronic Automation                                             | 200410-0                  | Grand Rapids | MI                        |
| Fluke Corporation Primary Standards Laboratory                    | 105016-0                  | Everett      | WA                        |
| Honeywell FM&T Metrology                                          | 200108-0                  | Kansas City  | MO                        |
| Indiana Division of Weights and Measures                          | 200421-0                  | Indianapolis | IN                        |
| Oak Ridge Metrology Center                                        | 105000-0                  | Oak Ridge    | TN                        |
| Sandia National Laboratories                                      | 105002-0                  | Albuquerque  | NM                        |
| SE Laboratories                                                   | 200338-0                  | Santa Clara  | CA                        |
| State of Virginia Metrology Lab                                   | 105007-0                  | Richmond     | VA                        |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0                  | Silverdale   | WA                        |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin        | 200403-0                  | Kings Bay    | GA                        |

**CHEMICAL CALIBRATION GROUP**
***NIST Traceable Reference Materials***

|                     |          |                |                |
|---------------------|----------|----------------|----------------|
| Andover Corporation | 200461-0 | Salem          | NH             |
| Optiglass Ltd.      | 200466-0 | Hainault Essex | UNITED KINGDOM |
| Thermo Spectronic   | 200462-0 | Cambridge      | UNITED KINGDOM |

***Providers of Proficiency Testing***

|                                                   |          |                 |    |
|---------------------------------------------------|----------|-----------------|----|
| Absolute Standards, Inc.                          | 200390-0 | Hamden          | CT |
| AccuStandard, Inc.                                | 200389-0 | New Haven       | CT |
| Analytical Products Group, Inc.                   | 200384-0 | Belpre          | OH |
| Chrisope Technologies, A Division of Remel        | 200388-0 | Lake Charles    | LA |
| Environmental Resource Associates (ERA)           | 200386-0 | Arvada          | CO |
| Microcheck, Inc.                                  | 200391-0 | Northfield      | VT |
| NSI Solutions, Inc.                               | 200440-0 | Raleigh         | NC |
| NYS DOH Environmental Laboratory Approval Program | 200387-0 | Albany          | NY |
| Protocol Analytical Supplies, Inc.                | 200395-0 | Middlesex       | NJ |
| Resource Technology Corporation (RTC)             | 200393-0 | Laramie         | WY |
| Spex Certiprep Inc.                               | 200392-0 | Metuchen        | NJ |
| Ultra Scientific, Inc.                            | 200379-0 | North Kingstown | RI |

**DOSIMETRY GROUP**
***Ionizing Radiation Dosimetry***

|                                                                |          |          |    |
|----------------------------------------------------------------|----------|----------|----|
| Atomic Energy Industrial Laboratory of the Southwest, Inc.     | 100556-0 | Houston  | TX |
| Battelle - Pacific Northwest National Laboratory               | 200216-0 | Richland | WA |
| Calvert Cliffs Nuclear Power Plant, Inc.                       | 100501-0 | Lusby    | MD |
| Carolina Power & Light Company, Harris Energy & Enviro. Center | 100517-0 | New Hill | NC |
| Clinton Power Station                                          | 100570-0 | Clinton  | IL |
| Con Edison, Indian Point                                       | 100538-0 | Buchanan | NY |
| Detroit Edison, Fermi 2 Dosimetry Laboratory                   | 100529-0 | Newport  | MI |

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|----------------------------------------------------------------------|---------------------------|------------------------|---------------------------|
| Duke Engineering and Services<br>Environmental Laboratory            | 100524-0                  | Marlborough            | MA                        |
| Duke Power Company Dosimetry Laboratory                              | 100505-0                  | Charlotte              | NC                        |
| Electric Boat Corp/A General Dynamics Co.<br>Radiological Ctrl. Dept | 100560-0                  | Groton                 | CT                        |
| Entergy Operations, Inc.                                             | 100535-0                  | Killona                | LA                        |
| Exelon Generation Company, LLC - TLD<br>Processing Laboratory        | 100541-0                  | Wilmington             | IL                        |
| FENOC, Beaver Valley Power Station                                   | 100521-0                  | Shippingport           | PA                        |
| Florida Power & Light Company                                        | 100544-0                  | Juno Beach             | FL                        |
| Georgia Power Company/Enviro. Affairs,<br>Enviro. Lab-Dosimetry      | 100551-0                  | Smyrna                 | GA                        |
| Ginna Nuclear Station                                                | 100514-0                  | Ontario                | NY                        |
| ICN Worldwide Dosimetry Service, Div. of<br>ICN Biomedicals, Inc.    | 100555-0                  | Costa Mesa             | CA                        |
| Landauer, Inc.                                                       | 100518-0                  | Glenwood               | IL                        |
| Mallinckrodt, Inc.                                                   | 100503-0                  | Maryland Heights       | MO                        |
| Naval Dosimetry Center                                               | 100504-0                  | Bethesda               | MD                        |
| Naval Nuclear Propulsion Program<br>Directorate, Washington, DC      | 100565-0                  | Bremerton              | WA                        |
| Newport News Shipbuilding Radiological<br>Control Department         | 100561-0                  | Newport News           | VA                        |
| Northeast Nuclear Energy Co. Dosimetry<br>Laboratory                 | 100540-0                  | Waterford              | CT                        |
| Pacific Gas & Electric Company, Diablo<br>Canyon Nuclear Power Plant | 100537-0                  | Avila Beach            | CA                        |
| Pinnacle West Energy Corp., Palo Verde<br>Nuclear Generating Station | 100536-0                  | Tonopah                | AZ                        |
| PPL Susquehanna, LLC                                                 | 100554-0                  | Allentown              | PA                        |
| Proxtronics, Inc.                                                    | 100573-0                  | Burke                  | VA                        |
| Radiation Detection Company                                          | 100512-0                  | Sunnyvale              | CA                        |
| Radiation Laboratory, Taiwan Power<br>Company                        | 100562-0                  | Shihmen, Taipei        | TAIWAN                    |
| South Texas Project Dosimetry Laboratory                             | 100519-0                  | Wadsworth              | TX                        |
| Southern California Edison                                           | 100506-0                  | San Clemente           | CA                        |
| Tennessee Valley Authority External<br>Dosimetry Service             | 100516-0                  | Soddy-Daisy            | TN                        |
| Troxler Radiation Monitoring Svc. a div. of<br>Troxler Elect. Labs   | 100559-0                  | Research Triangle Park | NC                        |
| TXU Electric - Comanche Peak Steam<br>Electric Station               | 100528-0                  | Glen Rose              | TX                        |
| U.S. Army Radiation Standards & Dosimetry<br>Laboratory              | 100539-0                  | Redstone Arsenal       | AL                        |
| U.S. EPA                                                             | 200231-0                  | Las Vegas              | NV                        |
| Union Electric Company, Callaway Plant                               | 100502-0                  | Fulton                 | MO                        |
| United States Dosimetry Technology, Inc.                             | 100571-0                  | Richland               | WA                        |
| US Air Force Center for Radiation Dosimetry                          | 100548-0                  | Brooks AFB             | TX                        |

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| <b>LABORATORY NAME</b>                                              | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>              | <b>STATE/<br/>COUNTRY</b> |
|---------------------------------------------------------------------|---------------------------|--------------------------|---------------------------|
| <b>ELECTROMAGNETIC COMPATIBILITY &amp; TELECOMMUNICATIONS GROUP</b> |                           |                          |                           |
| <i>Electromagnetic Compatibility &amp; Telecommunications</i>       |                           |                          |                           |
| 3M Product Safety EMC Laboratory                                    | 200033-0                  | St. Paul                 | MN                        |
| A-Pex International Co., Ltd. Yamakita<br>Laboratory                | 200441-0                  | Ashigarakami-gun         | JAPAN                     |
| A-Pex International Co., Ltd. Yokowa<br>Laboratory                  | 200109-0                  | Mie-ken                  | JAPAN                     |
| Advance Data Technology Corporation                                 | 200102-0                  | Taipei Hsien             | TAIWAN                    |
| Advance Data Technology Corporation Hsin<br>Chu EMC Laboratory      | 200376-0                  | Hsin Chu Hsien           | TAIWAN                    |
| Advanced Compliance Laboratory                                      | 200101-0                  | Hillsborough             | NJ                        |
| Advantest Analysis Labroatory Ltd. EMC<br>Center                    | 200477-0                  | Gunma                    | JAPAN                     |
| AHD                                                                 | 200129-0                  | Dowagiac                 | MI                        |
| Akzo Kashima Ltd., Kawasaki Technical<br>Center                     | 200300-0                  | Kawasaki                 | JAPAN                     |
| Akzo Nobel K.K., Kakegawa EMC Test Site                             | 100290-2                  | Shizuoka                 | JAPAN                     |
| Akzo Nobel K.K., Kashima EMC Site                                   | 100290-0                  | Ibaraki                  | JAPAN                     |
| Akzo Nobel K.K., Matsuda EMC Test Site                              | 100290-4                  | Kanagawa                 | JAPAN                     |
| Akzo Nobel K.K., Nagano EMC Test Site                               | 100290-3                  | Nagano                   | JAPAN                     |
| Akzo Nobel K.K., Tochigi EMC Test Site                              | 100290-5                  | Tochigi                  | JAPAN                     |
| Analab, LLC                                                         | 200260-0                  | Sterling                 | PA                        |
| Apple Computer, Inc., EMC Compliance<br>Laboratory                  | 200071-0                  | Cupertino                | CA                        |
| Audix Technology (Shanghai) Co., Ltd.                               | 200371-0                  | Shanghai                 | CHINA                     |
| AUDIX Technology (Shenzhen) Co., Ltd.                               | 200372-0                  | Shenzhen, Guangdong      | CHINA                     |
| BAE Environmental and EMC Test Centre                               | 200304-0                  | Kent                     | UNITED KINGDOM            |
| BAE Systems                                                         | 200425-0                  | Nashua                   | NH                        |
| Bay Area Compliance Laboratory, Corp.                               | 200167-0                  | Sunnyvale                | CA                        |
| Benesol Corp.                                                       | 200438-0                  | Sagamihara-shi, Kanagawa | JAPAN                     |
| Best Laboratory                                                     | 200484-0                  | Taipei Hsein             | TAIWAN                    |
| Boeing - St. Louis Electromagnetic<br>Compatibility Laboratory      | 200382-0                  | St. Louis                | MO                        |
| Cabletron Systems, Inc.                                             | 200121-0                  | Rochester                | NH                        |
| Canon D5 RF Anechoic Chamber; FCC Part<br>15; CISPR 22/AS/NZS 3548  | 200478-0                  | Ibaraki                  | JAPAN                     |
| Chemitox EMC Research, Inc.                                         | 200120-0                  | Yamanashi-ken            | JAPAN                     |
| Chomerics Test Services (CTS)                                       | 100296-0                  | Woburn                   | MA                        |
| Cisco Systems, Inc.                                                 | 200114-0                  | San Jose                 | CA                        |
| Communication Certification Laboratory                              | 100272-0                  | Salt Lake City           | UT                        |
| Compaq Computer Corp. EMC Test Facility                             | 200078-0                  | Colorado Springs         | CO                        |
| Compaq Computer Corp. Emissions Control<br>Lab                      | 200058-0                  | Houston                  | TX                        |
| Compaq Regulatory Compliance Engineering<br>- East                  | 100413-0                  | Marlboro                 | MA                        |
| Compatible Electronics, Inc.                                        | 200063-0                  | Agoura                   | CA                        |
| Compliance Eng. Svces, Inc., Compliance<br>Certification Services   | 200065-0                  | Sunnyvale                | CA                        |
| Compliance Test Laboratories, Inc.                                  | 200237-0                  | Liberty                  | SC                        |
| Cosmos Corporation                                                  | 200151-0                  | Watarai-gun Mie          | JAPAN                     |
| Criterion Technology Corp.                                          | 100396-0                  | Rollinsville             | CO                        |



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| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>            | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|------------------------|---------------------------|
| CSA International                                                    | 100322-0                  | Toronto Ontario        | CANADA                    |
| D.L.S. Electronic Systems, Inc.                                      | 100276-0                  | Wheeling               | IL                        |
| Dayton T. Brown, Inc.                                                | 200422-0                  | Bohemia                | NY                        |
| Dell Regulatory Test Laboratories                                    | 200052-0                  | Round Rock             | TX                        |
| Diviersified T.E.S.T. Technologies, Inc.                             | 200340-0                  | Groton                 | NY                        |
| Eastman Kodak Co.-Regulatory Compliance<br>Center-EMC Facility       | 200313-0                  | Rochester              | NY                        |
| Eaton E3 Laboratory                                                  | 100382-0                  | Southfield             | MI                        |
| Electro Magnetic Test, Inc.                                          | 200147-0                  | Mountain View          | CA                        |
| Electronic Research & Service<br>Organization/ITRI                   | 200118-0                  | Chutung Hsinchu        | TAIWAN                    |
| Electronics Test Centre                                              | 200282-0                  | Kanata, Ont.           | CANADA                    |
| Electronics Test Centre                                              | 200282-0                  | Kanata, Ont.           | CANADA                    |
| Electronics Testing Center, Taiwan                                   | 200133-0                  | Taoyuan Hsien          | TAIWAN                    |
| Elite Electronic Engineering Inc.                                    | 100278-0                  | Downers Grove          | IL                        |
| Elliott Laboratories, Inc.                                           | 200069-0                  | Sunnyvale              | CA                        |
| EMC Automation, a TDK Group Company                                  | 200430-0                  | Cedar Park             | TX                        |
| EMC Compliance Mgmt Group, dba<br>Turntech Scientific & Instr., Inc. | 200068-0                  | Mountain View          | CA                        |
| EMC Corporation                                                      | 100339-0                  | Westboro               | MA                        |
| EMCE Engineering, Inc.                                               | 200092-0                  | Fremont                | CA                        |
| Flextronics EMC Laboratories East Coast<br>Operations                | 200094-0                  | Youngsville            | NC                        |
| Fujitsu Evaluation Engineering Laboratory                            | 200281-0                  | Numazu, Shizuoka-Pref. | JAPAN                     |
| Fujitsu General EMC Laboratory                                       | 200373-0                  | Kawasaki               | JAPAN                     |
| Garwood Laboratories, Inc.                                           | 200119-0                  | Placentia              | CA                        |
| Genicom Corporation                                                  | 200342-0                  | Waynesboro             | VA                        |
| Global EMC Standard Tech. Corp.                                      | 200085-0                  | Taipei County          | TAIWAN                    |
| Global Testing                                                       | 200436-0                  | Santa Ana              | CA                        |
| Hewlett Packard, Product Test Lab, San<br>Diego                      | 200138-0                  | San Diego              | CA                        |
| Hitachi Information Technology Co., Ltd.                             | 200186-0                  | Kanagawa               | JAPAN                     |
| HomeTek Technology Inc.                                              | 200331-0                  | Taipei Shien           | TAIWAN                    |
| IBM Austin EMC                                                       | 200112-0                  | Austin                 | TX                        |
| IBM Endicott EMC Lab                                                 | 200418-0                  | Endicott               | NY                        |
| IBM Poughkeepsie EMC Laboratory                                      | 200435-0                  | Poughkeepsie           | NY                        |
| IBM Rochester EMC Lab                                                | 200091-0                  | Rochester              | MN                        |
| IBM RTP PSG EMC Test Labs                                            | 200200-0                  | Research Triangle Park | NC                        |
| IBM Yamato EMC Engineering                                           | 200198-0                  | Yamato Kanagawa        | JAPAN                     |
| IIT Research Institute/R&B Operation                                 | 100280-0                  | West Conshohocken      | PA                        |
| InFocus Systems, Inc.                                                | 200152-0                  | Wilsonville            | OR                        |
| Instrument Specialties Co., Inc.                                     | 200076-0                  | Delaware Water Gap     | PA                        |
| Integrity Design & Test Services, an Entela<br>Company               | 200004-0                  | Littleton              | MA                        |
| Intermec Technologies Corporation                                    | 100269-0                  | Cedar Rapids           | IA                        |
| International Standards Laboratory                                   | 200234-0                  | Hsichih Chen, Taipei   | TAIWAN                    |
| International Technology Company (ITC)                               | 200172-0                  | Sunol                  | CA                        |
| Interoccean EMC Technology Corp.                                     | 200458-0                  | Taipei County          | TAIWAN                    |
| Intertek Testing Services                                            | 200201-0                  | Menlo Park             | CA                        |
| Intertek Testing Services NA Inc.                                    | 100270-0                  | Boxborough             | MA                        |
| Intertek Testing Services NA Inc.                                    | 100274-0                  | Lexington              | KY                        |
| Intertek Testing Services NA Inc.                                    | 100409-0                  | Duluth                 | GA                        |

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| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>         | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|---------------------|---------------------------|
| Intertek Testing Services NA Inc.                                    | 200297-0                  | Laguna Niguel       | CA                        |
| Intertek Testing Services NA, Inc.                                   | 200049-0                  | Oakdale             | MN                        |
| Inventec Corp. (Taoyuan) EMC Labs                                    | 200140-0                  | Taoyuan             | TAIWAN                    |
| IPS Corporation                                                      | 200012-0                  | Nagano              | JAPAN                     |
| Japan Quality Assurance Org. Chubu Testing<br>Center Shikatsu Branch | 200190-0                  | Aichi               | JAPAN                     |
| Japan Quality Assurance Org. Safety Testing<br>Ctr. Tsuru EMC Branch | 200192-0                  | Yamanashi           | JAPAN                     |
| Japan Quality Assurance Organization<br>Kita-Kansai Testing Center   | 200191-0                  | Osaka               | JAPAN                     |
| Japan Quality Assurance Organization Safety<br>Testing Center        | 200189-0                  | Tokyo               | JAPAN                     |
| JMR Compliance Engineering                                           | 200413-0                  | Chatsworth          | CA                        |
| Kansai Electronic Industry Development<br>Center, Ikoma Testing Lab. | 200207-0                  | Ikoma Nara          | JAPAN                     |
| Key Tronic Corp.                                                     | 200096-0                  | Spokane             | WA                        |
| KTL Dallas, Inc.                                                     | 100426-0                  | Lewisville          | TX                        |
| KTL Ottawa Inc.                                                      | 100351-0                  | Ottawa Ontario      | CANADA                    |
| Kyushu Matsushita Electric Test Lab EMC<br>Center                    | 200364-0                  | Tosu-shi Saga-ken   | JAPAN                     |
| LG Electronics, Inc., Quality and Reliability<br>Center              | 200040-0                  | Seoul               | KOREA                     |
| Lockheed Martin Control Systems EMI<br>Laboratory                    | 200142-0                  | Johnson City        | NY                        |
| Lucent Technologies, Global Product<br>Compliance Lab                | 100275-0                  | Holmdel             | NJ                        |
| Matsushita EMC Center                                                | 100428-0                  | Sasayama, Hyogo     | JAPAN                     |
| Met Laboratories Incorporated                                        | 200445-0                  | Union City          | CA                        |
| MET Laboratories, Inc.                                               | 100273-0                  | Baltimore           | MD                        |
| Minolta Co., Ltd. Toyokawa EMC Lab                                   | 200434-0                  | Toyokawa, Aichi     | JAPAN                     |
| Motorola EMC Test Services Lab                                       | 200005-0                  | Mansfield           | MA                        |
| Motorola PPG Compliance Laboratory                                   | 200318-0                  | Boynton Beach       | FL                        |
| Motorola SSG EMC/TEMPEST Laboratory                                  | 100405-0                  | Scottsdale          | AZ                        |
| Murata Mfg. Co., Ltd. Yokohama Technical<br>Center EMM Office        | 200263-0                  | Kanagawa            | JAPAN                     |
| National Technical Systems                                           | 100347-0                  | Boxborough          | MA                        |
| National Technical Systems                                           | 200245-0                  | Plano               | TX                        |
| NAWC AD 5.1.7.2. EMI Lab                                             | 100408-0                  | Patuxent River      | MD                        |
| NAWC-Aircraft Div. Lakehurst<br>Electromagnetic Interference Lab.    | 200222-0                  | Lakehurst           | NJ                        |
| NCR Corp. San Diego EMC Lab                                          | 200383-0                  | San Diego           | CA                        |
| NEC Kofu, Ltd., EMC Center                                           | 200433-0                  | Yamanashi           | JAPAN                     |
| NEC Niigata, Ltd, EMC Group                                          | 200490-0                  | Niigata             | JAPAN                     |
| NEC Shizuoka, Ltd. EMC Center                                        | 200488-0                  | Shizuoka-ken        | JAPAN                     |
| Nemko EESI, Inc.                                                     | 200116-0                  | San Diego           | CA                        |
| Neutron Engineering Inc.                                             | 200145-0                  | Taipei              | TAIWAN                    |
| Nortel Networks BVW Lab                                              | 200098-0                  | Belleville, Ontario | CANADA                    |
| Northwest EMC, Inc.                                                  | 200059-0                  | Hillsboro           | OR                        |
| Ohtama Co., Ltd. Yamanashi EMC Test Site                             | 200175-0                  | Yamanashi           | JAPAN                     |
| Olympus EMC Laboratory                                               | 200472-0                  | Tokyo               | JAPAN                     |
| ORIX Rentec EMC Center; Electromagnetic<br>Compatibility             | 200404-0                  | Aiko-Gun, Kanagawa  | JAPAN                     |

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| LABORATORY NAME                                                       | NVLAP<br>LAB CODE | CITY                      | STATE/<br>COUNTRY |
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| Paradyne Corporation                                                  | 200125-0          | Largo                     | FL                |
| PCTEST Engineering Laboratory, Inc.                                   | 100431-0          | Columbia                  | MD                |
| PDE Laboratories                                                      | 200082-0          | San Clemente              | CA                |
| PEP Testing Laboratory                                                | 200097-0          | Taipei Hsien              | TAIWAN            |
| PFU TECHNOCONSUL EMC Center                                           | 200259-0          | Ishikawa-Ken              | JAPAN             |
| Philips Electronics Industries (TAIWAN)<br>Ltd.                       | 200137-0          | Chungli, Taoyuan          | TAIWAN            |
| Philips Testing Service                                               | 200409-0          | Knoxville                 | TN                |
| Professional Testing (EMI), Inc.                                      | 200062-0          | Round Rock                | TX                |
| Quest Engineering Solutions, Inc.                                     | 200036-0          | N. Billerica              | MA                |
| Quietek Corporation                                                   | 200347-0          | Hsin-Chu Country          | TAIWAN            |
| Raytheon Electronic Systems, California<br>Engineering EEE Laboratory | 200431-0          | El Segundo                | CA                |
| Raytheon Technical Services Co. EMI<br>Laboratory                     | 200317-0          | Indianapolis              | IN                |
| Rethif Testing Laboratories                                           | 100267-0          | Ronkonkoma                | NY                |
| Rethif Testing Laboratories                                           | 100267-1          | Goffstown                 | NH                |
| Rhein Tech Laboratories, Inc.                                         | 200061-0          | Herndon                   | VA                |
| Ricoh Company, Ltd. Ohmori EMC Center                                 | 200163-0          | Tokyo                     | JAPAN             |
| Rogers Labs, Inc.                                                     | 200087-0          | Louisburg                 | KS                |
| Samsung Electronics EMC Laboratory                                    | 200447-0          | Suwon, Kyungki Do         | KOREA             |
| Sammina Homologation Services                                         | 100411-0          | Santa Clara               | CA                |
| Seiko Epson Corporation                                               | 200157-0          | Shiojiri-City Nagano      | JAPAN             |
| Sharp Nara EMC Center, EMI Measurement<br>for ITE                     | 200457-0          | Yamatokooryama-shi Nara   | JAPAN             |
| SK Tech Co., LTD.                                                     | 200220-0          | Namyangju-si, Kyunggi-Do  | KOREA             |
| Sony Bonson EMC Test Laboratory                                       | 200456-0          | Saitama-ken               | JAPAN             |
| Sony Electronics Inc. Product Quality<br>Division EMC Group           | 200312-0          | San Diego                 | CA                |
| Sony Ikegami EMC Site                                                 | 200439-0          | Shinagawa, Tokyo          | JAPAN             |
| Sony Kisarazu EMC Test Laboratory                                     | 200432-0          | Kisarazu Chiba            | JAPAN             |
| Sony Kohda EMC Test Laboratory                                        | 200398-0          | Nukata-gun Aichi          | JAPAN             |
| Sony Minokamo EMC Site                                                | 200368-0          | Gifu-Pref.                | JAPAN             |
| Spectrum Research & Testing Laboratory,<br>Inc.                       | 200099-0          | Chung-Li, Taoyuan         | TAIWAN            |
| Sporton International, Inc.                                           | 200079-0          | Taipei Hsien              | TAIWAN            |
| StorageTek Open Area Test Site                                        | 200251-0          | Louisville                | CO                |
| Sun Microsystems, Inc. EMC Testing                                    | 200363-0          | Palo Alto                 | CA                |
| Syonan Site Testing Laboratory as Conducted<br>& Radiated Emissions   | 200482-0          | Kanagawa                  | JAPAN             |
| Taiwan Tokin EMC Eng. Corp.                                           | 200077-0          | Taipei                    | TAIWAN            |
| TDK Corporation's 10m Anechoic Chamber                                | 200309-0          | Ichikawa-shi, Chiba-ken   | JAPAN             |
| TDK Corporation's Chikumagawa Open Site                               | 200319-0          | Saku-shi, Nagano-ken      | JAPAN             |
| TEAC Corporation EMC Center                                           | 200362-0          | Saitama-ken               | JAPAN             |
| Test Site Services, Inc.                                              | 100419-0          | Marlboro                  | MA                |
| Tokin EMC Engineering Co., Ltd. Kawasaki<br>Facility                  | 200217-0          | Kawasaki-city, Kanagawa   | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Nagoya<br>Testing Laboratory          | 200219-0          | Daian-cho, Inabe-gun, Mie | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Osaka<br>Testing Laboratory           | 200218-0          | Sanda-city, Hyogo         | JAPAN             |
| Tokin EMC Engineering Co., Ltd. Tsukuba                               | 200221-0          | Tsukuba-city, Ibaraki     | JAPAN             |

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| LABORATORY NAME                                         | NVLAP<br>LAB CODE | CITY                     | STATE/<br>COUNTRY |
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| Testing Laboratory                                      |                   |                          |                   |
| Toshiba Corp., Ome Operations                           | 200107-0          | Ome Tokyo                | JAPAN             |
| Training Research Co., Ltd.                             | 200174-0          | Taipei Hsien             | TAIWAN            |
| TUV Product Service, Inc.                               | 100268-0          | San Diego                | CA                |
| TUV Product Service, Inc.                               | 100271-0          | New Brighton             | MN                |
| TUV Product Service, Inc.                               | 100271-1          | Boulder                  | CO                |
| TUV Rheinland of North America, Inc.                    | 200111-0          | Newtown                  | CT                |
| TUV Telecom Services, Inc.                              | 200039-0          | St. Paul                 | MN                |
| UltraTech Engineering Labs Inc.                         | 200093-0          | Oakville, Ontario        | CANADA            |
| Underwriters Laboratories                               | 200252-0          | Santa Clara              | CA                |
| Underwriters Laboratories Inc.                          | 100414-0          | Northbrook               | IL                |
| Underwriters Laboratories Inc.                          | 200214-0          | Camas                    | WA                |
| Underwriters Laboratories, Inc.                         | 100255-0          | Melville                 | NY                |
| Underwriters Laboratories, Inc.                         | 200246-0          | Research Triangle Park   | NC                |
| United States Technologies, Inc.                        | 200162-0          | Alpharetta               | GA                |
| Universal Compliance Laboratories                       | 200117-0          | San Jose                 | CA                |
| Washington Laboratories, Ltd.                           | 200066-0          | Gaithersburg             | MD                |
| Wayne Langston, Inc.                                    | 200021-0          | League City              | TX                |
| Windermere Info. Tech. Sys.                             | 200084-0          | Annapolis                | MD                |
| Military/Commercial Compliance Lab.                     |                   |                          |                   |
| Yamaha EMC Center                                       | 200455-0          | Tenryu-shi, Shizuoka-ken | JAPAN             |
| Zacta Technology Corporation Yonezawa<br>Testing Center | 200306-0          | Yonezawa-shi Yamagata    | JAPAN             |

## ENVIRONMENTAL GROUP

### *Asbestos Fiber Analysis (PLM Test Method)*

|                                                            |          |                    |    |
|------------------------------------------------------------|----------|--------------------|----|
| A & B Environmental Services, Inc.                         | 101793-0 | Houston            | TX |
| A.E.S.L. Environmental Laboratory                          | 200303-0 | Tempe              | AZ |
| A.R.C. Laboratories, Inc.                                  | 101832-0 | Grand Forks        | ND |
| Accredited Environmental Technologies, Inc.                | 101051-0 | Media              | PA |
| ACM Environmental, Inc.                                    | 101977-0 | South Bend         | IN |
| Advanced Industrial Hygiene Services, Inc.                 | 101006-0 | Miami              | FL |
| AES International                                          | 200051-0 | Santurce           | PR |
| AGX, Inc.                                                  | 101578-0 | Cranberry Township | PA |
| Aires Consulting Group, Inc.                               | 101014-0 | Batavia            | IL |
| Airtek Environmental Corp.                                 | 102011-0 | New York           | NY |
| ALAC                                                       | 200323-0 | New York           | NY |
| Allegheny Asbestos Analysis                                | 101704-0 | Carnegie           | PA |
| Alpine Consulting, Inc.                                    | 102089-0 | Colorado Springs   | CO |
| AMA Analytical Services, Inc.                              | 101143-0 | Lanham             | MD |
| Ambient Group, Inc.                                        | 101618-0 | Glen Cove          | NY |
| AMEC Earth & Environmental, Inc., PLM<br>LAB               | 200444-0 | Phoenix            | AZ |
| American Asbestos Laboratories, Inc.                       | 101775-0 | Miami Lakes        | FL |
| American Medical Laboratories, Inc.                        | 101136-0 | Chantilly          | VA |
| Analytica Solutions, Inc.                                  | 101086-0 | Thornton           | CO |
| Analytical Chemistry Services (ACS), Dolan<br>Chemical Lab | 102102-0 | Columbus           | OH |
| Analytical Environmental Services, Inc.                    | 102082-0 | Atlanta            | GA |
| Analytical Industries, Inc.                                | 101855-0 | Paducah            | KY |
| Analytical Labs San Francisco, Inc.                        | 101909-0 | San Francisco      | CA |
| AnalyticaLab                                               | 101727-0 | Willow Springs     | IL |



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| LABORATORY NAME                                                         | NVLAP<br>LAB CODE | CITY                 | STATE/<br>COUNTRY |
|-------------------------------------------------------------------------|-------------------|----------------------|-------------------|
| Analytics Corporation                                                   | 101004-0          | Richmond             | VA                |
| Apex Research, Inc.                                                     | 102118-0          | Whitmore Lake        | MI                |
| Apollo Environmental, Inc.                                              | 101871-0          | Gibsonton            | FL                |
| Applied Environmental, Inc.                                             | 101611-0          | Reston               | VA                |
| ASBESTECH                                                               | 101442-0          | Carmichael           | CA                |
| Asbestos Analysis and Information Service,<br>Inc.                      | 101261-0          | Four Oaks            | NC                |
| Asbestos Consulting & Testing (ACT)                                     | 101649-0          | Lenexa               | KS                |
| Asbestos TEM Laboratories, Inc.                                         | 101891-0          | Berkeley             | CA                |
| Asbestos TEM Laboratories, Inc.                                         | 200104-0          | Sparks               | NV                |
| Assaigai Analytical Laboratories, Inc.                                  | 101457-0          | Albuquerque          | NM                |
| AST International Environmental Consultants<br>Inc.                     | 200474-0          | Spring Valley        | CA                |
| ATC Associates Inc.                                                     | 101187-0          | New York             | NY                |
| ATC Associates Inc.                                                     | 200250-0          | Columbia             | MD                |
| ATC Associates, Inc.                                                    | 102031-0          | Englewood            | CO                |
| Athenica Environmental Services, Inc.                                   | 101958-0          | Long Island City     | NY                |
| Aurora Consolidated Laboratories                                        | 101661-0          | West Allis           | WI                |
| Batta Laboratories, Inc.                                                | 101032-0          | Newark               | DE                |
| Bay Area Air Quality Management District                                | 102090-0          | San Francisco        | CA                |
| Bella Donna Labs Inc.                                                   | 101868-0          | Wauwatosa            | WI                |
| Braun Intertec Corporation                                              | 101234-0          | Minneapolis          | MN                |
| Brewer Environmental Services Industrial<br>Hygiene Group Laboratory    | 102085-0          | Honolulu             | HI                |
| CA Laboratories, L.L.C.                                                 | 200452-0          | Baton Rouge          | LA                |
| CAM Environmental Services                                              | 200240-0          | Pasadena             | TX                |
| CAMCO Lab                                                               | 101803-0          | Fontana              | CA                |
| Cape Environmental Management, Inc.                                     | 102111-0          | Atlanta              | GA                |
| Carolina Environmental, Inc.                                            | 101768-0          | Cary                 | NC                |
| Chatfield Technical Consulting Limited                                  | 101103-0          | Mississauga Ontario  | CANADA            |
| ChemScope, Inc.                                                         | 101061-0          | North Haven          | CT                |
| City of Los Angeles Department of Water<br>and Power                    | 101111-0          | Los Angeles          | CA                |
| Clark Seif Clark, Inc.                                                  | 200324-0          | Chatsworth           | CA                |
| Clayton Group Services                                                  | 101106-0          | Seattle              | WA                |
| Clayton Group Services                                                  | 101125-0          | Kennesaw             | GA                |
| Comprehensive Health<br>Services-Environmental Health PLM<br>Laboratory | 101759-0          | Kennedy Space Center | FL                |
| Con Edison, EH&S - ChemLab                                              | 101558-0          | Long Island City     | NY                |
| Concord Analysis, Inc.                                                  | 101884-0          | Chatsworth           | CA                |
| Continental Envirotech, Inc.                                            | 200080-0          | Mesa                 | AZ                |
| Converse Consultants                                                    | 102091-0          | Reno                 | NV                |
| Covino Environmental Associates, Inc.                                   | 101781-0          | Woburn               | MA                |
| Crisp Analytical Laboratory                                             | 200349-0          | Carrollton           | TX                |
| Criterion Laboratories, Inc.                                            | 102046-0          | Bensalem             | PA                |
| CTL Environmental Services                                              | 101216-0          | Harbor City          | CA                |
| Dames & Moore, Inc.                                                     | 101433-0          | Salem                | NH                |
| DataChem Laboratories                                                   | 101917-0          | Cincinnati           | OH                |
| Davis & Floyd, Inc.                                                     | 101410-0          | Greenwood            | SC                |
| Davis Environmental Labs, Inc.                                          | 101039-0          | Chicago              | IL                |
| DCM Science Laboratory, Inc.                                            | 101258-0          | Wheat Ridge          | CO                |



**INDEX B. LISTING BY FIELD OF ACCREDITATION - continued**

| <b>LABORATORY NAME</b>                                            | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>        | <b>STATE/<br/>COUNTRY</b> |
|-------------------------------------------------------------------|---------------------------|--------------------|---------------------------|
| Design for Health Environmental Services                          | 101864-0                  | San Diego          | CA                        |
| DH Analytical Services                                            | 102086-0                  | Stafford           | TX                        |
| DHMH-Air Quality Laboratory                                       | 101523-0                  | Baltimore          | MD                        |
| Dixon Information Inc.                                            | 101012-0                  | South Salt Lake    | UT                        |
| Dove Environmental Corporation                                    | 102053-0                  | Miami              | FL                        |
| EA Group                                                          | 101019-0                  | Mentor             | OH                        |
| EAI, Inc.                                                         | 102114-0                  | Jersey City        | NJ                        |
| Eastern Analytical Services, Inc.                                 | 101646-0                  | Elmsford           | NY                        |
| EcoSystems Environmental, Inc.                                    | 101162-0                  | Carrollton         | TX                        |
| EMS Laboratories, Inc.                                            | 101218-0                  | Pasadena           | CA                        |
| EMSL Analytical Inc. Bulk And Airborne<br>Asbestos Fiber Analysis | 200399-0                  | Chicago            | IL                        |
| EMSL Analytical Inc. Mobile Laboratory                            | 200481-0                  | Westmont           | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-0                  | Westmont           | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-1                  | Atlanta            | GA                        |
| EMSL Analytical, Inc.                                             | 101048-2                  | Piscataway         | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-3                  | Milpitas           | CA                        |
| EMSL Analytical, Inc.                                             | 101048-4                  | Ann Arbor          | MI                        |
| EMSL Analytical, Inc.                                             | 101048-9                  | New York           | NY                        |
| EMSL Analytical, Inc.                                             | 101048-10                 | Carle Place        | NY                        |
| EMSL Analytical, Inc.                                             | 101151-0                  | Orlando            | FL                        |
| EMSL Analytical, Inc.                                             | 102104-0                  | Greensboro         | NC                        |
| EMSL Analytical, Inc.                                             | 102106-0                  | Houston            | TX                        |
| EMSL Analytical, Inc.                                             | 200019-0                  | Minneapolis        | MN                        |
| EMSL Analytical, Inc.                                             | 200034-0                  | Dallas             | TX                        |
| EMSL Analytical, Inc.                                             | 200056-0                  | Williamsville      | NY                        |
| EMSL Analytical, Inc.                                             | 200188-0                  | Indianapolis       | IN                        |
| EMSL Analytical, Inc.                                             | 200204-0                  | N. Miami Beach     | FL                        |
| EMSL Analytical, Inc.                                             | 200293-0                  | Beltsville         | MD                        |
| EMSL Analytical, Inc.                                             | 200333-0                  | Elmsford           | NY                        |
| EMSL Analytical, Inc.                                             | 200375-0                  | Baton Rouge        | LA                        |
| ENCORP                                                            | 200013-0                  | El Segundo         | CA                        |
| Enviro Techniques, Inc.                                           | 200024-0                  | Paterson           | NJ                        |
| Enviro-Probe, Inc.                                                | 101222-0                  | Bronx              | NY                        |
| EnviroHealth Technologies, Inc.                                   | 200374-0                  | St. Louis          | MO                        |
| EnviroMed Services, Inc.                                          | 101514-0                  | New Haven          | CT                        |
| Environmental Enterprise Group(EEG), Inc.                         | 101587-0                  | Russellville       | AR                        |
| Environmental Hazards Services, L.L.C.                            | 101882-0                  | Richmond           | VA                        |
| Environmental Health Laboratories                                 | 101506-0                  | Clayton            | MO                        |
| Environmental Management Consultants, Inc.                        | 101926-0                  | Scottsdale         | AZ                        |
| Environmental Monitoring & Consulting<br>Associates               | 101087-0                  | Somerville         | NJ                        |
| Environmental Science Services, Inc.                              | 200424-0                  | Lockeford          | CA                        |
| Environmental Services International, Inc.                        | 101306-0                  | St. Albans         | WV                        |
| Environmental Testing and Monitoring<br>Services, Inc.            | 200131-0                  | Virginia Beach     | VA                        |
| Environmental Testing, Inc.                                       | 101848-0                  | Middletown         | DE                        |
| Envirotest, Inc.                                                  | 101595-0                  | Houston            | TX                        |
| ERI Consulting Engineers, Inc.                                    | 101232-0                  | Tyler              | TX                        |
| ESG Laboratories                                                  | 102029-0                  | Indianapolis       | IN                        |
| EssTek Ohio, Inc.                                                 | 102093-0                  | Middleburg Heights | OH                        |
| Family Analytical Laboratory Services, Inc.                       | 200448-0                  | Denver             | CO                        |

**INDEX B. LISTING BY FIELD OF ACCREDITATION - continued**

| <b>LABORATORY NAME</b>                                 | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>      | <b>STATE/<br/>COUNTRY</b> |
|--------------------------------------------------------|---------------------------|------------------|---------------------------|
| Fiberquant, Inc.                                       | 101031-0                  | Phoenix          | AZ                        |
| Fibertec, Inc.                                         | 101510-0                  | Holt             | MI                        |
| Fluor Fernald, Inc., Analytical Laboratory<br>Services | 102010-0                  | Cincinnati       | OH                        |
| Forensic Analytical                                    | 101459-0                  | Hayward          | CA                        |
| Forensic Analytical Specialties, Inc.                  | 101459-1                  | Rancho Domingues | CA                        |
| FRS Geotech, Inc.                                      | 102078-0                  | Denver           | CO                        |
| Galson Laboratories                                    | 101375-0                  | East Syracuse    | NY                        |
| Gelles Laboratories, Division, CC<br>Technologies      | 101170-0                  | Dublin           | OH                        |
| GLE Associates, Inc.                                   | 102003-0                  | Tampa            | FL                        |
| GSC Environmental Laboratories, Inc.                   | 101626-0                  | Augusta          | GA                        |
| Health Science Associates                              | 101384-0                  | Los Alamitos     | CA                        |
| Hi-Tech Environmental and Laboratory<br>Services       | 102013-0                  | Cypress          | CA                        |
| HH Laboratory, Inc.                                    | 101233-0                  | Webster          | TX                        |
| Hillmann Environmental Group, L.L.C.                   | 101421-0                  | Union            | NJ                        |
| Holmes Environmental, Inc.                             | 200467-0                  | Norfolk          | VA                        |
| Hygeia Laboratories Inc.                               | 102116-0                  | Sierra Madre     | CA                        |
| Hygeia Laboratories, Inc.                              | 102087-0                  | Marietta         | GA                        |
| Hygeia Laboratories, Inc.                              | 200335-0                  | Miami            | FL                        |
| HYGENIX, INC.                                          | 101199-0                  | Stamford         | CT                        |
| Hygieneering, Inc.                                     | 101997-0                  | Willowbrook      | IL                        |
| Hygienetics Laboratory Services                        | 101147-0                  | Boston           | MA                        |
| Industrial Laboratory                                  | 102115-0                  | Portsmouth       | VA                        |
| Institute for Environmental Assessment                 | 101249-0                  | Brooklyn Park    | MN                        |
| International Asbestos Testing Laboratory              | 101165-0                  | Mt. Laurel       | NJ                        |
| Iowa Environmental Services, Inc.                      | 101990-0                  | Des Moines       | IA                        |
| Jimmie Ann Bolton                                      | 101735-0                  | Austin           | TX                        |
| JLC Environmental Consultants, Inc.                    | 101953-0                  | New York         | NY                        |
| JMR Environmental Services Inc.                        | 200067-0                  | San Diego        | CA                        |
| JMS Environmental Associates, Ltd.                     | 102012-0                  | Westmont         | IL                        |
| KAM Consultants                                        | 102047-0                  | Long Island City | NY                        |
| Kellco Services, Inc.                                  | 101331-0                  | Hayward          | CA                        |
| Kevco Services, Inc.                                   | 101941-0                  | Butler           | PA                        |
| Kingston Environmental Laboratory                      | 200041-0                  | Lee's Summit     | MO                        |
| KSL                                                    | 200442-0                  | Jackson          | CA                        |
| LA Testing                                             | 200232-0                  | S. Pasadena      | CA                        |
| Larron Laboratory                                      | 101415-0                  | Cape Girardeau   | MO                        |
| Law Engineering and Environmental<br>Services, Inc.    | 101066-0                  | Birmingham       | AL                        |
| Law Engineering and Environmental<br>Services, Inc.    | 101515-0                  | Tampa            | FL                        |
| Law Engineering and Environmental<br>Services, Inc.    | 101515-1                  | Miami Lakes      | FL                        |
| Law Engineering and Environmental<br>Services, Inc.    | 101973-0                  | Dallas           | TX                        |
| Law Engineering and Environmental<br>Services, Inc.    | 102035-0                  | Phoenix          | AZ                        |
| Legend Technical Services, Inc.                        | 102081-0                  | St. Paul         | MN                        |
| LEX Scientific Inc.                                    | 101949-0                  | Guelph Ontario   | CANADA                    |
| Loflin Environmental Services, Inc.                    | 102044-0                  | Houston          | TX                        |

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| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>         | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|---------------------|---------------------------|
| Los Angeles Unified School District                                  | 101505-0                  | Los Angeles         | CA                        |
| Louisiana Department of Environmental<br>Quality Microanalytical Lab | 102000-0                  | Baton Rouge         | LA                        |
| m.a.c. Paran Consulting Services, Inc.                               | 102108-0                  | Amelia              | OH                        |
| MACS Lab, Inc.                                                       | 101948-0                  | Santa Clara         | CA                        |
| Marine Chemist Service, Inc.                                         | 101425-0                  | Newport News        | VA                        |
| Materials Analytical Services, Inc.                                  | 101235-0                  | Suwanee             | GA                        |
| McCall and Spero Environmental, Inc.                                 | 101895-0                  | Louisville          | KY                        |
| McKee Environmental Health, Inc.                                     | 101135-0                  | Friendswood         | TX                        |
| Micro Air of Texas, Inc.                                             | 102008-0                  | Houston             | TX                        |
| Micro Air, Inc.                                                      | 101221-0                  | Indianapolis        | IN                        |
| Micro Analytical Laboratories, Inc.                                  | 101872-0                  | Emeryville          | CA                        |
| Micro Analytical, Inc.                                               | 101247-0                  | Milwaukee           | WI                        |
| Micron Environmental Labs                                            | 200294-0                  | Arcadia             | CA                        |
| Microscopic Analysis, Inc.                                           | 101037-0                  | St. Louis           | MO                        |
| Midwest Laboratories, Inc.                                           | 101894-0                  | Countryside         | IL                        |
| Mountain Laboratories                                                | 101890-0                  | Spokane             | WA                        |
| Mystic Air Quality Consultants, Inc.                                 | 101282-0                  | Groton              | CT                        |
| National Econ Corporation                                            | 102062-0                  | Tustin              | CA                        |
| National Econ Corporation                                            | 200047-0                  | Memphis             | TN                        |
| National Environmental Reference<br>Laboratory                       | 101593-0                  | Denver              | CO                        |
| New York Testing Laboratories, Inc.                                  | 101332-0                  | Bay Shore           | NY                        |
| Niche Analysis, Inc.                                                 | 102057-0                  | Mount Vernon        | NY                        |
| Northern Analytical Laboratories, Inc.                               | 101292-0                  | Billings            | MT                        |
| Northern Industrial Hygiene, Inc.                                    | 200511-0                  | Burien              | WA                        |
| Northern Testing Laboratories, Inc.                                  | 101463-0                  | Fairbanks           | AK                        |
| Nova Consulting Group, Inc.                                          | 101545-0                  | Chaska              | MN                        |
| Nowicki & Associates, Inc.                                           | 200322-0                  | Federal Way         | WA                        |
| NVL Laboratories, Inc.                                               | 102063-0                  | Seattle             | WA                        |
| NY Environmental & Analytical Labs, Inc.                             | 101967-0                  | Port Washington     | NY                        |
| O'Brien & Gere Laboratories, Inc.                                    | 101343-0                  | Syracuse            | NY                        |
| OCCU-TEC, Inc.                                                       | 102025-0                  | Kansas City         | MO                        |
| Occupational Health Conservation, Inc.                               | 102050-0                  | Jacksonville        | FL                        |
| Oklahoma Dept. of Environmental<br>Quality-DEQ Laboratory            | 102112-0                  | Oklahoma City       | OK                        |
| Omega Environmental Services                                         | 101289-0                  | Hackensack          | NJ                        |
| Omni Environmental, Inc.                                             | 102061-0                  | Austin              | TX                        |
| PA DEP Bureau of Laboratories                                        | 101323-0                  | Harrisburg          | PA                        |
| Pacific Rim Environmental, Inc.                                      | 101631-0                  | Tukwila             | WA                        |
| Palmetto Laboratory, Inc.                                            | 102077-0                  | St. Petersburg      | FL                        |
| Patriot Environmental Laboratory Services,<br>Inc.                   | 200358-0                  | Garden Grove        | CA                        |
| PBS Environmental Building Consultants,<br>Inc.                      | 101910-0                  | Portland            | OR                        |
| Philip Analytical Services                                           | 101262-0                  | Reading             | PA                        |
| Philip Environmental Services Corp.                                  | 101192-0                  | Columbia            | IL                        |
| Pinchin Environmental Ltd.                                           | 101270-0                  | Mississauga Ontario | CANADA                    |
| PMK Group, Inc.                                                      | 101301-0                  | Kenilworth          | NJ                        |
| Precision Testing Laboratories, Inc.                                 | 101580-0                  | Moore               | OK                        |
| ProScience Analytical Services, Inc.                                 | 200090-0                  | Woburn              | MA                        |
| PSI                                                                  | 101350-0                  | Pittsburgh          | PA                        |

**INDEX B. LISTING BY FIELD OF ACCREDITATION - continued**

| <b>LABORATORY NAME</b>                                        | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>             | <b>STATE/<br/>COUNTRY</b> |
|---------------------------------------------------------------|---------------------------|-------------------------|---------------------------|
| Puget Sound Naval Shipyard                                    | 101539-0                  | Bremerton               | WA                        |
| PWC Environmental Laboratory, Pearl Harbor                    | 200369-0                  | Pearl Harbor            | HI                        |
| QuanTEM Laboratories, LLC                                     | 101959-0                  | Oklahoma City           | OK                        |
| Quest MicroAnalytics                                          | 200249-0                  | Dallas                  | TX                        |
| R. Robinson Analytical Services, Inc.                         | 102041-0                  | Pensacola               | FL                        |
| Raymond-Beling, Inc.                                          | 101356-0                  | Moline                  | IL                        |
| RCM Laboratories, Inc.                                        | 101853-0                  | Countryside             | IL                        |
| Reservoirs Environmental Services, Inc.                       | 101896-0                  | Denver                  | CO                        |
| RI Analytical Laboratories, Inc.                              | 101440-0                  | Warwick                 | RI                        |
| RJ Lee Group, Inc.                                            | 101208-0                  | Monroeville             | PA                        |
| RJ Lee Group, Inc.                                            | 101208-2                  | San Leandro             | CA                        |
| RJ Lee Group, Inc.                                            | 101208-3                  | Manassas                | VA                        |
| Roy F. Weston, Inc.                                           | 101254-0                  | Auburn                  | AL                        |
| S&ME, Inc.                                                    | 102075-0                  | Charlotte               | NC                        |
| Safe Environment of America, Inc.                             | 102021-0                  | Auburn                  | WA                        |
| Schneider Laboratories, Inc.                                  | 101150-0                  | Richmond                | VA                        |
| Scientific Laboratories, Inc.                                 | 101904-0                  | Midlothian              | VA                        |
| Scientific Laboratories, Inc.                                 | 101904-1                  | New York                | NY                        |
| SCILAB BOSTON, Inc.                                           | 102079-0                  | East Weymouth           | MA                        |
| SCILAB California, Inc.                                       | 200346-0                  | Carson                  | CA                        |
| SEAS, Inc.                                                    | 101185-0                  | Blacksburg              | VA                        |
| Solar Environmental Services, Inc.                            | 102006-0                  | Anchorage               | AK                        |
| South Carolina Department of Health & Environmental Control   | 101572-0                  | Columbia                | SC                        |
| South Coast Air Quality Management District                   | 101567-0                  | Diamond Bar             | CA                        |
| STAT Analysis Corporation                                     | 101202-0                  | Chicago                 | IL                        |
| State of Connecticut                                          | 101237-0                  | Hartford                | CT                        |
| Steve Moody Micro Services, Inc.                              | 102056-0                  | Carrollton              | TX                        |
| Strom Environmental                                           | 200450-0                  | Denver                  | CO                        |
| Sun City Analytical, Inc.                                     | 101870-0                  | El Paso                 | TX                        |
| Taylor Environmental Group, Inc.                              | 102101-0                  | Floral Park             | NY                        |
| TEC-AN, Inc.                                                  | 200325-0                  | Oklahoma City           | OK                        |
| TEM, Incorporated                                             | 101130-0                  | Glen Ellyn              | IL                        |
| Testing Mechanics Corp.                                       | 102001-0                  | Seaford                 | NY                        |
| Testwell Laboratories, Inc./Testwell Industries, Inc.         | 200083-0                  | Ossining                | NY                        |
| The Saul Corporation                                          | 200473-0                  | Houston                 | TX                        |
| The Scott Lawson Group, Ltd.                                  | 101228-0                  | Concord                 | NH                        |
| TolTest, Inc.                                                 | 101594-0                  | Toledo                  | OH                        |
| TRC Environmental Corporation                                 | 101424-0                  | Windsor                 | CT                        |
| Tremco, Inc. - Roofing Division, An RPM Company               | 101188-0                  | Beachwood               | OH                        |
| Triad Environmental Consulting, Inc.                          | 102073-0                  | Huntington              | WV                        |
| Twin Ports Testing, Inc.                                      | 102083-0                  | Superior                | WI                        |
| U.S. Army Center for Health Promotion and Preventive Medicine | 200044-0                  | Aberdeen Proving Ground | MD                        |
| U.S. EPA - National Enforcement Investigations Center         | 101703-0                  | Denver                  | CO                        |
| United Analytical Services, Inc.                              | 101732-0                  | Downers Grove           | IL                        |
| University (State) Hygienic Laboratory                        | 101288-0                  | Iowa City               | IA                        |
| University of Alabama Asbestos Laboratory                     | 102005-0                  | Tuscaloosa              | AL                        |



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| <b>LABORATORY NAME</b>                                            | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>      | <b>STATE/<br/>COUNTRY</b> |
|-------------------------------------------------------------------|---------------------------|------------------|---------------------------|
| Volz Environmental Services, Inc.                                 | 101269-0                  | Pittsburgh       | PA                        |
| Western Analytical Laboratory                                     | 200037-0                  | Arleta           | CA                        |
| White Environmental Consultants Inc.                              | 200124-0                  | Anchorage        | AK                        |
| White Environmental Consultants, Inc.                             | 200350-0                  | Honolulu         | HI                        |
| Wisconsin Occupational Health Laboratory                          | 101109-0                  | Madison          | WI                        |
| WKP Laboratories, Inc.                                            | 101950-0                  | New York City    | NY                        |
| Wonder Makers Environmental, Inc.                                 | 102065-0                  | Kalamazoo        | MI                        |
| <b><i>Asbestos Fiber Analysis (TEM Test Method)</i></b>           |                           |                  |                           |
| Aires Consulting Group, Inc.                                      | 101014-0                  | Batavia          | IL                        |
| AMA Analytical Services, Inc.                                     | 101143-0                  | Lanham           | MD                        |
| Analytica Solutions, Inc.                                         | 101086-0                  | Thornton         | CO                        |
| Analytical Environmental Services, Inc.                           | 102082-0                  | Atlanta          | GA                        |
| ASBESTECH                                                         | 101442-0                  | Carmichael       | CA                        |
| Asbestos TEM Laboratories, Inc.                                   | 101891-0                  | Berkeley         | CA                        |
| ATC Associates Inc.                                               | 101187-0                  | New York         | NY                        |
| Athenica Environmental Services, Inc.                             | 101958-0                  | Long Island City | NY                        |
| Batta Laboratories, Inc.                                          | 101032-0                  | Newark           | DE                        |
| Braun Intertec Corporation                                        | 101234-0                  | Minneapolis      | MN                        |
| Clayton Group Services                                            | 101125-0                  | Kennesaw         | GA                        |
| Crisp Analytical Laboratory                                       | 200349-0                  | Carrollton       | TX                        |
| DataChem Laboratories                                             | 101917-0                  | Cincinnati       | OH                        |
| Davis Environmental Labs, Inc.                                    | 101039-0                  | Chicago          | IL                        |
| E. M. Analytical, Inc.                                            | 101902-0                  | Dania            | FL                        |
| Eastern Analytical Services, Inc.                                 | 101646-0                  | Elmsford         | NY                        |
| EMS Laboratories, Inc.                                            | 101218-0                  | Pasadena         | CA                        |
| EMSL Analytical Inc. Bulk And Airborne<br>Asbestos Fiber Analysis | 200399-0                  | Chicago          | IL                        |
| EMSL Analytical Inc. Mobile Laboratory                            | 200481-0                  | Westmont         | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-0                  | Westmont         | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-1                  | Atlanta          | GA                        |
| EMSL Analytical, Inc.                                             | 101048-2                  | Piscataway       | NJ                        |
| EMSL Analytical, Inc.                                             | 101048-3                  | Milpitas         | CA                        |
| EMSL Analytical, Inc.                                             | 101048-4                  | Ann Arbor        | MI                        |
| EMSL Analytical, Inc.                                             | 101048-9                  | New York         | NY                        |
| EMSL Analytical, Inc.                                             | 101048-10                 | Carle Place      | NY                        |
| EMSL Analytical, Inc.                                             | 101151-0                  | Orlando          | FL                        |
| EMSL Analytical, Inc.                                             | 102104-0                  | Greensboro       | NC                        |
| EMSL Analytical, Inc.                                             | 102106-0                  | Houston          | TX                        |
| EMSL Analytical, Inc.                                             | 200019-0                  | Minneapolis      | MN                        |
| EMSL Analytical, Inc.                                             | 200034-0                  | Dallas           | TX                        |
| EMSL Analytical, Inc.                                             | 200056-0                  | Williamsville    | NY                        |
| EMSL Analytical, Inc.                                             | 200188-0                  | Indianapolis     | IN                        |
| EMSL Analytical, Inc.                                             | 200204-0                  | N. Miami Beach   | FL                        |
| EMSL Analytical, Inc.                                             | 200293-0                  | Beltsville       | MD                        |
| EMSL Analytical, Inc.                                             | 200333-0                  | Elmsford         | NY                        |
| EMSL Analytical, Inc.                                             | 200375-0                  | Baton Rouge      | LA                        |
| Fiberquant, Inc.                                                  | 101031-0                  | Phoenix          | AZ                        |
| Forensic Analytical                                               | 101459-0                  | Hayward          | CA                        |
| Gelles Laboratories, Division, CC<br>Technologies                 | 101170-0                  | Dublin           | OH                        |
| Hygeia Laboratories Inc.                                          | 102116-0                  | Sierra Madre     | CA                        |
| Hygeia Laboratories, Inc.                                         | 200335-0                  | Miami            | FL                        |



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| LABORATORY NAME                                       | NVLAP<br>LAB CODE | CITY             | STATE/<br>COUNTRY |
|-------------------------------------------------------|-------------------|------------------|-------------------|
| Hygienetics Laboratory Services                       | 101147-0          | Boston           | MA                |
| International Asbestos Testing Laboratory             | 101165-0          | Mt. Laurel       | NJ                |
| JMS Environmental Associates, Ltd.                    | 102012-0          | Westmont         | IL                |
| KAM Consultants                                       | 102047-0          | Long Island City | NY                |
| KSL                                                   | 200442-0          | Jackson          | CA                |
| LA Testing                                            | 200232-0          | S. Pasadena      | CA                |
| Lab/Cor, Inc.                                         | 101920-0          | Seattle          | WA                |
| Los Angeles Unified School District                   | 101505-0          | Los Angeles      | CA                |
| MACS Lab, Inc.                                        | 101948-0          | Santa Clara      | CA                |
| Materials Analytical Services, Inc.                   | 101235-0          | Suwanee          | GA                |
| McCall and Spero Environmental, Inc.                  | 101895-0          | Louisville       | KY                |
| Micro Analytical Laboratories, Inc.                   | 101872-0          | Emeryville       | CA                |
| Midwest Laboratories, Inc.                            | 101894-0          | Countryside      | IL                |
| New York Testing Laboratories, Inc.                   | 101332-0          | Bay Shore        | NY                |
| O'Brien & Gere Laboratories, Inc.                     | 101343-0          | Syracuse         | NY                |
| Philip Analytical Services                            | 101262-0          | Reading          | PA                |
| ProScience Analytical Services, Inc.                  | 200090-0          | Woburn           | MA                |
| PSI                                                   | 101350-0          | Pittsburgh       | PA                |
| QuanTEM Laboratories, LLC                             | 101959-0          | Oklahoma City    | OK                |
| Reservoirs Environmental Services, Inc.               | 101896-0          | Denver           | CO                |
| RJ Lee Group, Inc.                                    | 101208-0          | Monroeville      | PA                |
| RJ Lee Group, Inc.                                    | 101208-2          | San Leandro      | CA                |
| RJ Lee Group, Inc.                                    | 101208-3          | Manassas         | VA                |
| Scientific Laboratories, Inc.                         | 101904-0          | Midlothian       | VA                |
| Scientific Laboratories, Inc.                         | 101904-1          | New York         | NY                |
| SCILAB BOSTON, Inc.                                   | 102079-0          | East Weymouth    | MA                |
| SCILAB California, Inc.                               | 200346-0          | Carson           | CA                |
| STAT Analysis Corporation                             | 101202-0          | Chicago          | IL                |
| Steve Moody Micro Services, Inc.                      | 102056-0          | Carrollton       | TX                |
| TEM, Incorporated                                     | 101130-0          | Glen Ellyn       | IL                |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0          | Ossining         | NY                |
| United Analytical Services, Inc.                      | 101732-0          | Downers Grove    | IL                |
| University (State) Hygienic Laboratory                | 101288-0          | Iowa City        | IA                |

**FASTENER & METALS GROUP**
***Fasteners & Metals***

|                                                                  |          |                    |        |
|------------------------------------------------------------------|----------|--------------------|--------|
| Acos Villares SA - Chemical Laboratory                           | 200394-0 | Pindamonhangaba SP | BRAZIL |
| Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation | 200271-0 | Hawthorne          | NJ     |
| BCAG Fastener Quality Test Lab Everett Site                      | 200292-0 | Seattle            | WA     |
| Binder Metal Products, Inc.                                      | 200321-0 | Gardena            | CA     |
| California Screw Products                                        | 200183-0 | Paramount          | CA     |
| Casey Products, Inc.                                             | 200278-0 | Lisle              | IL     |
| CBS Fasteners, Inc.                                              | 200253-0 | Anaheim            | CA     |
| Dexter Fastener Technologies, Inc.                               | 200144-0 | Dexter             | MI     |
| Durkee Testing Laboratories, Inc.                                | 200178-0 | Paramount          | CA     |
| Fastener Innovation Technology, Inc.                             | 200179-0 | Gardena            | CA     |
| Fong Prean Industrial Co., Ltd.                                  | 200288-0 | Kaohsiung Hsien    | TAIWAN |
| Fuji Buhin Kogyo Kabushiki Kaisha                                | 200203-0 | Ohta Gunma         | JAPAN  |
| Fuji Component Parts USA, Inc.                                   | 200180-0 | Indianapolis       | IN     |
| Ingersoll Fasteners                                              | 200208-0 | Ingersoll Ontario  | CANADA |

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| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>                    | <b>STATE/<br/>COUNTRY</b> |
|----------------------------------------------------------------------|---------------------------|--------------------------------|---------------------------|
| Ivaco Rolling Mills, Chemistry Laboratory                            | 200143-0                  | L'Original Ontario             | CANADA                    |
| Kobelco Research Institute, Inc. Stock<br>Company                    | 200169-0                  | Kobe                           | JAPAN                     |
| Korea Testing & Research Inst. for Chemical<br>Industry-Inchon Off.  | 200177-0                  | Inchon                         | KOREA                     |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory                             | 200274-0                  | Komatsu City, Ishikawa         | JAPAN                     |
| Leland-Powell Fasteners, Inc. Fastener<br>Testing Laboratory         | 200171-0                  | Martin                         | TN                        |
| MAC Fasteners, Inc.                                                  | 200141-0                  | Ottawa                         | KS                        |
| MacLean Fasteners - QC Laboratory                                    | 200153-0                  | Mundelein                      | IL                        |
| MacLean Maynard Laboratory Services                                  | 200451-0                  | Chesterfield Township          | MI                        |
| Minebea Co., Ltd. Fujisawa Manufacturing<br>Unit                     | 200229-0                  | Fujisawa, Kanagawa             | JAPAN                     |
| Modern Plating Corporation                                           | 200320-0                  | Freeport                       | IL                        |
| Northwestern Steel and Wire Company                                  | 200224-0                  | Sterling                       | IL                        |
| NOVA Machine Products                                                | 200202-0                  | Middleburg Heights             | OH                        |
| NYLOK Fastener Corporation                                           | 200272-0                  | Anaheim                        | CA                        |
| NYLOK Fastener Corporation                                           | 200273-0                  | Macomb                         | MI                        |
| NYLOK Fastener Corporation - Chicago<br>Testing Laboratory           | 200275-0                  | Lincolnwood                    | IL                        |
| O & K Company Limited, Osaka Test Center                             | 200166-0                  | Osaka-Shi                      | JAPAN                     |
| Okai Iron Works Co., Ltd.                                            | 200299-0                  | Izumisano Osaka                | JAPAN                     |
| Okawa Laboratory                                                     | 200296-0                  | Naka-gun, Ibaraki-ken          | JAPAN                     |
| PB Fasteners                                                         | 200139-0                  | Gardena                        | CA                        |
| Piolax Inc.                                                          | 200411-0                  | Mooka-shi Tochigi-ken          | JAPAN                     |
| Pratt & Whitney Materials Control<br>Lab/Quality & Standards Lab     | 200336-0                  | East Hartford                  | CT                        |
| Prospect Testing Labs, Inc.                                          | 200328-0                  | Des Plaines                    | IL                        |
| Prottsa, S.A. de C.V.                                                | 200261-0                  | Mexico City                    | MEXICO                    |
| Republic Technologies International,<br>Franklin Chemical Laboratory | 200148-0                  | Johnstown                      | PA                        |
| Rockford Bolt & Steel Co.                                            | 200255-0                  | Rockford                       | IL                        |
| San Shing Hardware Works Co., Ltd. Test<br>Laboratory                | 200158-0                  | Tainan                         | TAIWAN                    |
| Saturn Fasteners, Inc.                                               | 200327-0                  | Burbank                        | CA                        |
| SNB Laboratory                                                       | 200308-0                  | Cumberland                     | RI                        |
| SPS Technologies Aerospace Fasteners<br>Group                        | 200298-0                  | Santa Ana                      | CA                        |
| Sumitomo Metals (Kokura), Ltd. Quality<br>System Section             | 200215-0                  | Kitakyushu                     | JAPAN                     |
| Sundram Fasteners Limited (Inhouse test<br>laboratory)               | 200212-0                  | Chennai (Madras), Taonil, Nadu | INDIA                     |
| Sundram Fasteners Limited Chemical Testing<br>Laboratory             | 200256-0                  | Andhra Pradesh                 | INDIA                     |
| United Steel and Fasteners Inc.                                      | 200341-0                  | Itasca                         | IL                        |
| Vermont Fasteners Manufacturing                                      | 200254-0                  | Swanton                        | VT                        |
| Wolverine Plating Corp.                                              | 200230-0                  | Roseville                      | MI                        |

## INDEX B. LISTING BY FIELD OF ACCREDITATION - continued

| LABORATORY NAME                                                   | NVLAP<br>LAB CODE | CITY            | STATE/<br>COUNTRY |
|-------------------------------------------------------------------|-------------------|-----------------|-------------------|
| <b>INFORMATION TECHNOLOGY SECURITY TESTING GROUP</b>              |                   |                 |                   |
| <i>Common Criteria Testing</i>                                    |                   |                 |                   |
| COACT Inc. CAFE Laboratory                                        | 200416-0          | Columbia        | MD                |
| Computer Sciences Corporation                                     | 200426-0          | Hanover         | MD                |
| Cygnacom Solutions, Inc. An Entrust Technologies Company          | 200002-0          | McLean          | VA                |
| SAIC Common Criteria Testing Laboratory                           | 200427-0          | Columbia        | MD                |
| TUViT, IT Security Laboratory                                     | 200428-0          | Austin          | TX                |
| <i>Cryptographic Module Testing</i>                               |                   |                 |                   |
| Atlan Laboratories                                                | 200492-0          | McLean          | VA                |
| COACT Inc. CAFE Laboratory                                        | 200416-0          | Columbia        | MD                |
| Cygnacom Solutions, Inc. An Entrust Technologies Company          | 200002-0          | McLean          | VA                |
| DOMUS ITSL                                                        | 200017-0          | Ottawa Ontario  | CANADA            |
| InfoGard Laboratories, Inc.                                       | 100432-0          | San Luis Obispo | CA                |
| <b>PRODUCT TESTING GROUP</b>                                      |                   |                 |                   |
| <i>Acoustical Testing Services</i>                                |                   |                 |                   |
| Acoustic Systems Acoustical Research Facility                     | 100286-0          | Austin          | TX                |
| Aearo Company, E·A·RCAL Acoustical Laboratory                     | 100374-0          | Indianapolis    | IN                |
| Architectural Testing Inc.                                        | 200361-0          | York            | PA                |
| Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center | 100228-0          | Lancaster       | PA                |
| Auditory Systems Laboratory, ISE Department, Virginia Tech        | 200479-0          | Blacksburg      | VA                |
| BPB America, Inc.                                                 | 200520-0          | St. Petersburg  | FL                |
| Dell Regulatory Test Laboratories                                 | 200052-0          | Round Rock      | TX                |
| Howard Leight Acoustical Testing Laboratory                       | 200475-0          | San Diego       | CA                |
| Hufcor Laboratory                                                 | 100239-0          | Janesville      | WI                |
| IBM Hudson Valley Acoustics Laboratory                            | 100323-0          | Poughkeepsie    | NY                |
| Industrial Acoustics Company, Inc., Aero-Acoustics Laboratory     | 100404-0          | Bronx           | NY                |
| Integrex Testing Systems - Product Testing Laboratory             | 100109-0          | Granville       | OH                |
| Johns Manville Technical Center                                   | 100425-0          | Littleton       | CO                |
| McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory    | 200463-0          | Westerville     | OH                |
| Michael & Associates                                              | 100427-0          | State College   | PA                |
| NGC Testing Services, National Gypsum Research Center             | 200291-0          | Buffalo         | NY                |
| Orfield Laboratories, Inc.                                        | 200248-0          | Minneapolis     | MN                |
| PCI Industries Acoustical Testing Laboratories                    | 200453-0          | Fort Worth      | TX                |
| Ricoh Company LTD. Ohmori Acoustics Test Site                     | 200345-0          | Tokyo           | JAPAN             |
| Riverbank Acoustical Laboratories                                 | 100227-0          | Geneva          | IL                |
| Stork-Twin City Testing Corporation                               | 200046-0          | St. Paul        | MN                |

**INDEX B. LISTING BY FIELD OF ACCREDITATION - continued**

| <b>LABORATORY NAME</b>                                          | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>         | <b>STATE/<br/>COUNTRY</b> |
|-----------------------------------------------------------------|---------------------------|---------------------|---------------------------|
| USG Research - Construction Systems<br>Laboratory               | 200132-0                  | Libertyville        | IL                        |
| Vibro-Acoustics Laboratory                                      | 100424-0                  | Scarborough Ontario | CANADA                    |
| Western Electro-Acoustic Lab., Inc.                             | 100256-0                  | Santa Monica        | CA                        |
| <b><i>Carpet and Carpet Cushion</i></b>                         |                           |                     |                           |
| American Carpet Laboratories, Inc.                              | 100139-0                  | Ringgold            | GA                        |
| Beaulieu of America - Carpet Testing Lab                        | 100190-0                  | Dalton              | GA                        |
| Beaulieu of America Hollytex Division                           | 100247-0                  | Anadarko            | OK                        |
| Bentley Testing Laboratory                                      | 100288-0                  | City of Industry    | CA                        |
| Commercial Testing Company                                      | 100120-0                  | Dalton              | GA                        |
| Independent Textile Testing Service, Inc.                       | 100166-0                  | Dalton              | GA                        |
| Interface Testing Laboratory                                    | 200402-0                  | LaGrange            | GA                        |
| Mohawk Industries, Inc.- Lyerly Plant                           | 100156-0                  | Lyerly              | GA                        |
| Professional Testing Laboratory, Inc.                           | 100297-0                  | Dalton              | GA                        |
| Shaw Industries, Inc., Central Laboratory<br>Operations         | 100193-0                  | Dalton              | GA                        |
| TSi, Testing Services, Inc.                                     | 100108-0                  | Dalton              | GA                        |
| Vartest Laboratories, Inc.                                      | 200027-0                  | New York            | NY                        |
| <b><i>Commercial Products Testing</i></b>                       |                           |                     |                           |
| CSA International                                               | 100322-0                  | Toronto Ontario     | CANADA                    |
| DL Labs, Inc.                                                   | 100252-0                  | New York            | NY                        |
| Dodge-Regupol, Inc. Laboratory                                  | 200030-0                  | Lancaster           | PA                        |
| IAPMO Testing and Services, L.L.C.                              | 200460-0                  | Walnut              | CA                        |
| IBM Shock and Vibration Laboratory                              | 200503-0                  | Poughkeepsie        | NY                        |
| NAHB Research Center, Inc.                                      | 100104-0                  | Upper Marlboro      | MD                        |
| SGS U.S. Testing Company, Inc.                                  | 100416-0                  | Tulsa               | OK                        |
| Willamette Industries, Inc. West Coast<br>Development Lab       | 200045-0                  | Wilsonville         | OR                        |
| <b><i>Construction Materials Testing</i></b>                    |                           |                     |                           |
| American Testing Laboratories, Inc.                             | 100146-0                  | Lancaster           | PA                        |
| City of San Jose, Materials Testing<br>Laboratory               | 100325-0                  | San Jose            | CA                        |
| Eastern Materials Testing Lab a division of<br>Jaworski Geotech | 100315-0                  | Berlin              | CT                        |
| Fairfield Testing Laboratory, Inc.                              | 100317-0                  | Stamford            | CT                        |
| Fairway Testing Company, Inc.                                   | 100340-0                  | Stony Point         | NY                        |
| Independent Materials Testing Laboratories,<br>Inc.             | 100316-0                  | Plainville          | CT                        |
| INEEL Materials Testing Lab CFA 602                             | 200415-0                  | Idaho Falls         | ID                        |
| Inland Foundation Engineering, Inc.                             | 100406-0                  | San Jacinto         | CA                        |
| Materials Testing, Inc.                                         | 100320-0                  | Milford             | CT                        |
| Special Testing Laboratories, Inc.                              | 100308-0                  | Bethel              | CT                        |
| STS Consultants, Ltd.                                           | 100191-0                  | Vernon Hills        | IL                        |
| Test-Con Incorporated                                           | 200018-0                  | Danbury             | CT                        |
| Testwell Laboratories, Inc./Testwell<br>Industries, Inc.        | 200083-0                  | Ossining            | NY                        |
| Tri-State Materials Testing Lab, Inc.                           | 200010-0                  | Wallingford         | CT                        |
| W.R. Grace & Co.                                                | 200258-0                  | Cambridge           | MA                        |



**INDEX B. LISTING BY FIELD OF ACCREDITATION - continued**

| <b>LABORATORY NAME</b>                                           | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>      | <b>STATE/<br/>COUNTRY</b> |
|------------------------------------------------------------------|---------------------------|------------------|---------------------------|
| <b><i>Efficiency of Electric Motors</i></b>                      |                           |                  |                           |
| A.O. Smith (Lexington) Engineering Laboratory                    | 200053-0                  | Lexington        | TN                        |
| Advanced Energy, Industrial Energy Laboratory                    | 200081-0                  | Raleigh          | NC                        |
| GE Owensboro Test Laboratory                                     | 200305-0                  | Owensboro        | KY                        |
| Leeson Electric - Grafton Engineering Laboratory                 | 200483-0                  | Grafton          | WI                        |
| Marathon Electric - Wausau Engineering Lab.                      | 200134-0                  | Wausau           | WI                        |
| Shanghai Testing & Inspection Institute for Electrical Equipment | 200407-0                  | Shanghai         | CHINA                     |
| Small IAC Test Laboratory                                        | 200287-0                  | Peterborough, ON | CANADA                    |
| TECO Electric & Machinery Co., Ltd.                              | 200378-0                  | Taoyuan          | TAIWAN                    |
| Teco Industry (Malaysia) SDN. BHD.                               | 200476-0                  | Penang           | MALAYSIA                  |
| Toshiba/Houston Test Laboratory                                  | 200088-0                  | Houston          | TX                        |
| USEM de Mexico, S.A. de C.V.                                     | 200506-0                  | Apodaca NL       | Mexico                    |
| <b><i>Energy Efficient Lighting Products</i></b>                 |                           |                  |                           |
| Cooper Lighting - Metalux Research Laboratories                  | 200050-0                  | Americus         | GA                        |
| Daybrite Lighting (Genlyte Thomas Group) Photometric Laboratory  | 200016-0                  | Tupelo           | MS                        |
| GE Lighting- Product Testing                                     | 100398-0                  | Cleveland        | OH                        |
| Hubbell Lighting Photometric Laboratory                          | 200020-0                  | Christiansburg   | VA                        |
| Intertek Testing Services NA Inc.                                | 100402-0                  | Cortland         | NY                        |
| Lighting Research Center Lighting Products                       | 200480-0                  | Troy             | NY                        |
| Litetrronics International                                       | 200504-0                  | Alsip            | IL                        |
| Lithonia Testing Laboratories                                    | 200007-0                  | Conyers          | GA                        |
| OSRAM SYLVANIA, Test & Measurements Laboratory                   | 100403-0                  | Beverly          | MA                        |
| Philips Lighting Corporate Calibration & Standards Laboratory    | 100399-0                  | Fairmont         | WV                        |
| Underwriters Laboratories, Inc.                                  | 100255-0                  | Melville         | NY                        |
| <b><i>Thermal Insulation Materials</i></b>                       |                           |                  |                           |
| Celotex Technical Center                                         | 100417-0                  | St. Petersburg   | FL                        |
| Dow Chemical N. America Foam Products Research, Prod. Perf. Lab. | 100103-0                  | Midland          | MI                        |
| Geoscience Ltd.                                                  | 100142-0                  | San Diego        | CA                        |
| Holometrix - Micromet                                            | 100113-0                  | Bedford          | MA                        |
| Integrex Testing Systems - Product Testing Laboratory            | 100109-0                  | Granville        | OH                        |
| Intertek Testing Services NA Inc.                                | 200031-0                  | Middleton        | WI                        |
| Johns Manville Technical Center                                  | 100425-0                  | Littleton        | CO                        |
| Knauf Fiber Glass Research Laboratory                            | 100248-0                  | Shelbyville      | IN                        |
| Levecque Technical Center                                        | 100101-0                  | Blue Bell        | PA                        |
| NAHB Research Center, Inc.                                       | 100104-0                  | Upper Marlboro   | MD                        |
| R & D Services, Inc.                                             | 200265-0                  | Cookeville       | TN                        |
| SGS U.S. Testing Company, Inc.                                   | 100416-0                  | Tulsa            | OK                        |
| St. of California, Bur. of Home Furnishings & Thermal Insulation | 100251-0                  | North Highlands  | CA                        |
| The Dow Chemical Company- NA System House-Joliet                 | 100210-0                  | Joliet           | IL                        |



INDEX B. LISTING BY FIELD OF ACCREDITATION - continued

| LABORATORY NAME                                          | NVLAP<br>LAB CODE | CITY         | STATE/<br>COUNTRY |
|----------------------------------------------------------|-------------------|--------------|-------------------|
| Underwriters Laboratories Inc.                           | 100414-0          | Northbrook   | IL                |
| <b><i>Wood Based Products</i></b>                        |                   |              |                   |
| APA - The Engineered Wood Association<br>Research Center | 100423-0          | Tacoma       | WA                |
| Composite Panel Association (CPA)                        | 100418-0          | Gaithersburg | MD                |
| PFS Corporation                                          | 100421-0          | Madison      | WI                |
| Professional Service Industries, Inc.,                   | 100430-0          | Eugene       | OR                |
| Pittsburgh Test. Lab. Div.                               |                   |              |                   |
| Timberco, Inc.- dba TECO                                 | 100420-0          | Eugene       | OR                |

| Year | Number of cases | Number of deaths | Number of survivors |
|------|-----------------|------------------|---------------------|
| 1970 | 10              | 0                | 10                  |
| 1971 | 15              | 0                | 15                  |
| 1972 | 20              | 0                | 20                  |
| 1973 | 25              | 0                | 25                  |
| 1974 | 30              | 0                | 30                  |
| 1975 | 35              | 0                | 35                  |
| 1976 | 40              | 0                | 40                  |
| 1977 | 45              | 0                | 45                  |
| 1978 | 50              | 0                | 50                  |
| 1979 | 55              | 0                | 55                  |
| 1980 | 60              | 0                | 60                  |
| 1981 | 65              | 0                | 65                  |
| 1982 | 70              | 0                | 70                  |
| 1983 | 75              | 0                | 75                  |
| 1984 | 80              | 0                | 80                  |
| 1985 | 85              | 0                | 85                  |
| 1986 | 90              | 0                | 90                  |
| 1987 | 95              | 0                | 95                  |
| 1988 | 100             | 0                | 100                 |
| 1989 | 105             | 0                | 105                 |
| 1990 | 110             | 0                | 110                 |
| 1991 | 115             | 0                | 115                 |
| 1992 | 120             | 0                | 120                 |
| 1993 | 125             | 0                | 125                 |
| 1994 | 130             | 0                | 130                 |
| 1995 | 135             | 0                | 135                 |
| 1996 | 140             | 0                | 140                 |
| 1997 | 145             | 0                | 145                 |
| 1998 | 150             | 0                | 150                 |
| 1999 | 155             | 0                | 155                 |
| 2000 | 160             | 0                | 160                 |
| 2001 | 165             | 0                | 165                 |
| 2002 | 170             | 0                | 170                 |
| 2003 | 175             | 0                | 175                 |
| 2004 | 180             | 0                | 180                 |
| 2005 | 185             | 0                | 185                 |
| 2006 | 190             | 0                | 190                 |
| 2007 | 195             | 0                | 195                 |
| 2008 | 200             | 0                | 200                 |
| 2009 | 205             | 0                | 205                 |
| 2010 | 210             | 0                | 210                 |
| 2011 | 215             | 0                | 215                 |
| 2012 | 220             | 0                | 220                 |
| 2013 | 225             | 0                | 225                 |
| 2014 | 230             | 0                | 230                 |
| 2015 | 235             | 0                | 235                 |
| 2016 | 240             | 0                | 240                 |
| 2017 | 245             | 0                | 245                 |
| 2018 | 250             | 0                | 250                 |
| 2019 | 255             | 0                | 255                 |
| 2020 | 260             | 0                | 260                 |
| 2021 | 265             | 0                | 265                 |
| 2022 | 270             | 0                | 270                 |
| 2023 | 275             | 0                | 275                 |
| 2024 | 280             | 0                | 280                 |
| 2025 | 285             | 0                | 285                 |
| 2026 | 290             | 0                | 290                 |
| 2027 | 295             | 0                | 295                 |
| 2028 | 300             | 0                | 300                 |
| 2029 | 305             | 0                | 305                 |
| 2030 | 310             | 0                | 310                 |
| 2031 | 315             | 0                | 315                 |
| 2032 | 320             | 0                | 320                 |
| 2033 | 325             | 0                | 325                 |
| 2034 | 330             | 0                | 330                 |
| 2035 | 335             | 0                | 335                 |
| 2036 | 340             | 0                | 340                 |
| 2037 | 345             | 0                | 345                 |
| 2038 | 350             | 0                | 350                 |
| 2039 | 355             | 0                | 355                 |
| 2040 | 360             | 0                | 360                 |
| 2041 | 365             | 0                | 365                 |
| 2042 | 370             | 0                | 370                 |
| 2043 | 375             | 0                | 375                 |
| 2044 | 380             | 0                | 380                 |
| 2045 | 385             | 0                | 385                 |
| 2046 | 390             | 0                | 390                 |
| 2047 | 395             | 0                | 395                 |
| 2048 | 400             | 0                | 400                 |
| 2049 | 405             | 0                | 405                 |
| 2050 | 410             | 0                | 410                 |
| 2051 | 415             | 0                | 415                 |
| 2052 | 420             | 0                | 420                 |
| 2053 | 425             | 0                | 425                 |
| 2054 | 430             | 0                | 430                 |
| 2055 | 435             | 0                | 435                 |
| 2056 | 440             | 0                | 440                 |
| 2057 | 445             | 0                | 445                 |
| 2058 | 450             | 0                | 450                 |
| 2059 | 455             | 0                | 455                 |
| 2060 | 460             | 0                | 460                 |
| 2061 | 465             | 0                | 465                 |
| 2062 | 470             | 0                | 470                 |
| 2063 | 475             | 0                | 475                 |
| 2064 | 480             | 0                | 480                 |
| 2065 | 485             | 0                | 485                 |
| 2066 | 490             | 0                | 490                 |
| 2067 | 495             | 0                | 495                 |
| 2068 | 500             | 0                | 500                 |
| 2069 | 505             | 0                | 505                 |
| 2070 | 510             | 0                | 510                 |
| 2071 | 515             | 0                | 515                 |
| 2072 | 520             | 0                | 520                 |
| 2073 | 525             | 0                | 525                 |
| 2074 | 530             | 0                | 530                 |
| 2075 | 535             | 0                | 535                 |
| 2076 | 540             | 0                | 540                 |
| 2077 | 545             | 0                | 545                 |
| 2078 | 550             | 0                | 550                 |
| 2079 | 555             | 0                | 555                 |
| 2080 | 560             | 0                | 560                 |
| 2081 | 565             | 0                | 565                 |
| 2082 | 570             | 0                | 570                 |
| 2083 | 575             | 0                | 575                 |
| 2084 | 580             | 0                | 580                 |
| 2085 | 585             | 0                | 585                 |
| 2086 | 590             | 0                | 590                 |
| 2087 | 595             | 0                | 595                 |
| 2088 | 600             | 0                | 600                 |
| 2089 | 605             | 0                | 605                 |
| 2090 | 610             | 0                | 610                 |
| 2091 | 615             | 0                | 615                 |
| 2092 | 620             | 0                | 620                 |
| 2093 | 625             | 0                | 625                 |
| 2094 | 630             | 0                | 630                 |
| 2095 | 635             | 0                | 635                 |
| 2096 | 640             | 0                | 640                 |
| 2097 | 645             | 0                | 645                 |
| 2098 | 650             | 0                | 650                 |
| 2099 | 655             | 0                | 655                 |
| 2100 | 660             | 0                | 660                 |

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**C**

**LISTING BY  
STATE/  
COUNTRY**



## INDEX C. LISTING BY STATE/COUNTRY

| LABORATORY NAME                                                   | NVLAP<br>LAB CODE | CITY             | STATE/<br>COUNTRY | FIELD        |
|-------------------------------------------------------------------|-------------------|------------------|-------------------|--------------|
| <b>AK</b>                                                         |                   |                  |                   |              |
| Northern Testing Laboratories, Inc.                               | 101463-0          | Fairbanks        | AK                | PLM          |
| Solar Environmental Services, Inc.                                | 102006-0          | Anchorage        | AK                | PLM          |
| White Environmental Consultants Inc.                              | 200124-0          | Anchorage        | AK                | PLM          |
| <b>AL</b>                                                         |                   |                  |                   |              |
| Law Engineering and Environmental Services, Inc.                  | 101066-0          | Birmingham       | AL                | PLM          |
| Roy F. Weston, Inc.                                               | 101254-0          | Auburn           | AL                | PLM          |
| U.S. Army Radiation Standards & Dosimetry Laboratory              | 100539-0          | Redstone Arsenal | AL                | Dosimetry    |
| University of Alabama Asbestos Laboratory                         | 102005-0          | Tuscaloosa       | AL                | PLM          |
| <b>AR</b>                                                         |                   |                  |                   |              |
| Environmental Enterprise Group(EEG), Inc.                         | 101587-0          | Russellville     | AR                | PLM          |
| <b>AZ</b>                                                         |                   |                  |                   |              |
| A.E.S.L. Environmental Laboratory                                 | 200303-0          | Tempe            | AZ                | PLM          |
| AMEC Earth & Environmental, Inc., PLM LAB                         | 200444-0          | Phoenix          | AZ                | PLM          |
| Continental Envirotech, Inc.                                      | 200080-0          | Mesa             | AZ                | PLM          |
| Environmental Management Consultants, Inc.                        | 101926-0          | Scottsdale       | AZ                | PLM          |
| Fiberquant, Inc.                                                  | 101031-0          | Phoenix          | AZ                | PLM          |
| Fiberquant, Inc.                                                  | 101031-0          | Phoenix          | AZ                | TEM          |
| Law Engineering and Environmental Services, Inc.                  | 102035-0          | Phoenix          | AZ                | PLM          |
| Motorola SSG EMC/TEMPEST Laboratory                               | 100405-0          | Scottsdale       | AZ                | EC&T         |
| Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station | 100536-0          | Tonopah          | AZ                | Dosimetry    |
| <b>CA</b>                                                         |                   |                  |                   |              |
| Analytical Labs San Francisco, Inc.                               | 101909-0          | San Francisco    | CA                | PLM          |
| Apple Computer, Inc., EMC Compliance Laboratory                   | 200071-0          | Cupertino        | CA                | EC&T         |
| ASBESTECH                                                         | 101442-0          | Carmichael       | CA                | PLM          |
| ASBESTECH                                                         | 101442-0          | Carmichael       | CA                | TEM          |
| Asbestos TEM Laboratories, Inc.                                   | 101891-0          | Berkeley         | CA                | PLM          |
| Asbestos TEM Laboratories, Inc.                                   | 101891-0          | Berkeley         | CA                | TEM          |
| AST International Environmental Consultants Inc.                  | 200474-0          | Spring Valley    | CA                | PLM          |
| Bay Area Air Quality Management District                          | 102090-0          | San Francisco    | CA                | PLM          |
| Bay Area Compliance Laboratory, Corp.                             | 200167-0          | Sunnyvale        | CA                | EC&T         |
| Bentley Testing Laboratory                                        | 100288-0          | City of Industry | CA                | Carpet       |
| Binder Metal Products, Inc.                                       | 200321-0          | Gardena          | CA                | Fasteners    |
| California Screw Products                                         | 200183-0          | Paramount        | CA                | Fasteners    |
| CAMCO Lab                                                         | 101803-0          | Fontana          | CA                | PLM          |
| CBS Fasteners, Inc.                                               | 200253-0          | Anaheim          | CA                | Fasteners    |
| Cisco Systems, Inc.                                               | 200114-0          | San Jose         | CA                | EC&T         |
| City of Los Angeles Department of Water and Power                 | 101111-0          | Los Angeles      | CA                | PLM          |
| City of San Jose, Materials Testing Laboratory                    | 100325-0          | San Jose         | CA                | Construction |



**INDEX C. LISTING BY STATE/COUNTRY - continued**

| <b>LABORATORY NAME</b>                                               | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>      | <b>STATE/<br/>COUNTRY</b> | <b>FIELD</b>  |
|----------------------------------------------------------------------|---------------------------|------------------|---------------------------|---------------|
| Clark Seif Clark, Inc.                                               | 200324-0                  | Chatsworth       | CA                        | PLM           |
| Compatible Electronics, Inc.                                         | 200063-0                  | Agoura           | CA                        | EC&T          |
| Compliance Eng. Svces, Inc., Compliance<br>Certification Services    | 200065-0                  | Sunnyvale        | CA                        | EC&T          |
| Concord Analysis, Inc.                                               | 101884-0                  | Chatsworth       | CA                        | PLM           |
| CTL Environmental Services                                           | 101216-0                  | Harbor City      | CA                        | PLM           |
| Design for Health Environmental Services                             | 101864-0                  | San Diego        | CA                        | PLM           |
| Durkee Testing Laboratories, Inc.                                    | 200178-0                  | Paramount        | CA                        | Fasteners     |
| Electro Magnetic Test, Inc.                                          | 200147-0                  | Mountain View    | CA                        | EC&T          |
| Elliott Laboratories, Inc.                                           | 200069-0                  | Sunnyvale        | CA                        | EC&T          |
| EMC Compliance Mgmt Group, dba<br>Turntech Scientific & Instr., Inc. | 200068-0                  | Mountain View    | CA                        | EC&T          |
| EMCE Engineering, Inc.                                               | 200092-0                  | Fremont          | CA                        | EC&T          |
| EMS Laboratories, Inc.                                               | 101218-0                  | Pasadena         | CA                        | PLM           |
| EMS Laboratories, Inc.                                               | 101218-0                  | Pasadena         | CA                        | TEM           |
| EMSL Analytical, Inc.                                                | 101048-3                  | Milpitas         | CA                        | PLM           |
| EMSL Analytical, Inc.                                                | 101048-3                  | Milpitas         | CA                        | TEM           |
| ENCORP                                                               | 200013-0                  | El Segundo       | CA                        | PLM           |
| Environmental Science Services, Inc.                                 | 200424-0                  | Lockeford        | CA                        | PLM           |
| Fastener Innovation Technology, Inc.                                 | 200179-0                  | Gardena          | CA                        | Fasteners     |
| Forensic Analytical                                                  | 101459-0                  | Hayward          | CA                        | PLM           |
| Forensic Analytical                                                  | 101459-0                  | Hayward          | CA                        | TEM           |
| Forensic Analytical Specialties, Inc.                                | 101459-1                  | Rancho Domingues | CA                        | PLM           |
| Garwood Laboratories, Inc.                                           | 200119-0                  | Placentia        | CA                        | EC&T          |
| Geoscience Ltd.                                                      | 100142-0                  | San Diego        | CA                        | Thermal Insl. |
| Global Testing                                                       | 200436-0                  | Santa Ana        | CA                        | EC&T          |
| Health Science Associates                                            | 101384-0                  | Los Alamitos     | CA                        | PLM           |
| Hewlett Packard, Product Test Lab, San<br>Diego                      | 200138-0                  | San Diego        | CA                        | EC&T          |
| Hi-Tech Environmental and Laboratory<br>Services                     | 102013-0                  | Cypress          | CA                        | PLM           |
| Howard Leight Acoustical Testing<br>Laboratory                       | 200475-0                  | San Diego        | CA                        | Acoustics     |
| Hygeia Laboratories Inc.                                             | 102116-0                  | Sierra Madre     | CA                        | PLM           |
| Hygeia Laboratories Inc.                                             | 102116-0                  | Sierra Madre     | CA                        | TEM           |
| IAPMO Testing and Services, L.L.C.                                   | 200460-0                  | Walnut           | CA                        | Commercial    |
| ICN Worldwide Dosimetry Service, Div. of<br>ICN Biomedicals, Inc.    | 100555-0                  | Costa Mesa       | CA                        | Dosimetry     |
| InfoGard Laboratories, Inc.                                          | 100432-0                  | San Luis Obispo  | CA                        | Cryptographic |
| Inland Foundation Engineering, Inc.                                  | 100406-0                  | San Jacinto      | CA                        | Construction  |
| International Technology Company (ITC)                               | 200172-0                  | Sunol            | CA                        | EC&T          |
| Intertek Testing Services                                            | 200201-0                  | Menlo Park       | CA                        | EC&T          |
| Intertek Testing Services NA Inc.                                    | 200297-0                  | Laguna Niguel    | CA                        | EC&T          |
| JMR Compliance Engineering                                           | 200413-0                  | Chatsworth       | CA                        | EC&T          |
| JMR Environmental Services Inc.                                      | 200067-0                  | San Diego        | CA                        | PLM           |
| Kellco Services, Inc.                                                | 101331-0                  | Hayward          | CA                        | PLM           |
| KSL                                                                  | 200442-0                  | Jackson          | CA                        | PLM           |
| KSL                                                                  | 200442-0                  | Jackson          | CA                        | TEM           |
| LA Testing                                                           | 200232-0                  | S. Pasadena      | CA                        | PLM           |
| LA Testing                                                           | 200232-0                  | S. Pasadena      | CA                        | TEM           |
| Los Angeles Unified School District                                  | 101505-0                  | Los Angeles      | CA                        | PLM           |
| Los Angeles Unified School District                                  | 101505-0                  | Los Angeles      | CA                        | TEM           |

**INDEX C. LISTING BY STATE/COUNTRY - continued**

| <b>LABORATORY NAME</b>                                                | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>     | <b>STATE/<br/>COUNTRY</b> | <b>FIELD</b>  |
|-----------------------------------------------------------------------|---------------------------|-----------------|---------------------------|---------------|
| MACS Lab, Inc.                                                        | 101948-0                  | Santa Clara     | CA                        | PLM           |
| MACS Lab, Inc.                                                        | 101948-0                  | Santa Clara     | CA                        | TEM           |
| Met Laboratories Incorporated                                         | 200445-0                  | Union City      | CA                        | EC&T          |
| Micro Analytical Laboratories, Inc.                                   | 101872-0                  | Emeryville      | CA                        | PLM           |
| Micro Analytical Laboratories, Inc.                                   | 101872-0                  | Emeryville      | CA                        | TEM           |
| Micron Environmental Labs                                             | 200294-0                  | Arcadia         | CA                        | PLM           |
| National Econ Corporation                                             | 102062-0                  | Tustin          | CA                        | PLM           |
| NCR Corp. San Diego EMC Lab                                           | 200383-0                  | San Diego       | CA                        | EC&T          |
| Nemko EESI, Inc.                                                      | 200116-0                  | San Diego       | CA                        | EC&T          |
| NYLOK Fastener Corporation                                            | 200272-0                  | Anaheim         | CA                        | Fasteners     |
| Pacific Gas & Electric Company, Diablo<br>Canyon Nuclear Power Plant  | 100537-0                  | Avila Beach     | CA                        | Dosimetry     |
| Patriot Environmental Laboratory Services,<br>Inc.                    | 200358-0                  | Garden Grove    | CA                        | PLM           |
| PB Fasteners                                                          | 200139-0                  | Gardena         | CA                        | Fasteners     |
| PDE Laboratories                                                      | 200082-0                  | San Clemente    | CA                        | EC&T          |
| Radiation Detection Company                                           | 100512-0                  | Sunnyvale       | CA                        | Dosimetry     |
| Raytheon Electronic Systems, California<br>Engineering EEE Laboratory | 200431-0                  | El Segundo      | CA                        | EC&T          |
| RJ Lee Group, Inc.                                                    | 101208-2                  | San Leandro     | CA                        | PLM           |
| RJ Lee Group, Inc.                                                    | 101208-2                  | San Leandro     | CA                        | TEM           |
| Sanmina Homologation Services                                         | 100411-0                  | Santa Clara     | CA                        | EC&T          |
| Saturn Fasteners, Inc.                                                | 200327-0                  | Burbank         | CA                        | Fasteners     |
| SCILAB California, Inc.                                               | 200346-0                  | Carson          | CA                        | PLM           |
| SCILAB California, Inc.                                               | 200346-0                  | Carson          | CA                        | TEM           |
| SE Laboratories                                                       | 200338-0                  | Santa Clara     | CA                        | Calibration   |
| Sony Electronics Inc. Product Quality<br>Division EMC Group           | 200312-0                  | San Diego       | CA                        | EC&T          |
| South Coast Air Quality Management District                           | 101567-0                  | Diamond Bar     | CA                        | PLM           |
| Southern California Edison                                            | 100506-0                  | San Clemente    | CA                        | Dosimetry     |
| Southern California Edison Company                                    | 105014-0                  | Westminster     | CA                        | Calibration   |
| SPS Technologies Aerospace Fasteners<br>Group                         | 200298-0                  | Santa Ana       | CA                        | Fasteners     |
| St. of California, Bur. of Home Furnishings<br>& Thermal Insulation   | 100251-0                  | North Highlands | CA                        | Thermal Insl. |
| Sun Microsystems, Inc. EMC Testing                                    | 200363-0                  | Palo Alto       | CA                        | EC&T          |
| TUV Product Service, Inc.                                             | 100268-0                  | San Diego       | CA                        | EC&T          |
| Underwriters Laboratories                                             | 200252-0                  | Santa Clara     | CA                        | EC&T          |
| Universal Compliance Laboratories                                     | 200117-0                  | San Jose        | CA                        | EC&T          |
| VLSI Standards, Inc.                                                  | 200302-0                  | San Jose        | CA                        | Calibration   |
| Western Analytical Laboratory                                         | 200037-0                  | Arleta          | CA                        | PLM           |
| Western Electro-Acoustic Lab., Inc.                                   | 100256-0                  | Santa Monica    | CA                        | Acoustics     |

**CO**

|                                         |          |                  |    |             |
|-----------------------------------------|----------|------------------|----|-------------|
| Alpine Consulting, Inc.                 | 102089-0 | Colorado Springs | CO | PLM         |
| Analytica Solutions, Inc.               | 101086-0 | Thornton         | CO | PLM         |
| Analytica Solutions, Inc.               | 101086-0 | Thornton         | CO | TEM         |
| ATC Associates, Inc.                    | 102031-0 | Englewood        | CO | PLM         |
| Compaq Computer Corp. EMC Test Facility | 200078-0 | Colorado Springs | CO | EC&T        |
| Criterion Technology Corp.              | 100396-0 | Rollinsville     | CO | EC&T        |
| DCM Science Laboratory, Inc.            | 101258-0 | Wheat Ridge      | CO | PLM         |
| Denver Instrument Co. Weight Lab        | 200106-0 | Arvada           | CO | Calibration |
| Environmental Resource Associates (ERA) | 200386-0 | Arvada           | CO | PPT         |

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| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY                 | STATE/<br>COUNTRY | FIELD         |
|----------------------------------------------------------------------|-------------------|----------------------|-------------------|---------------|
| Family Analytical Laboratory Services, Inc.                          | 200448-0          | Denver               | CO                | PLM           |
| FRS Geotech, Inc.                                                    | 102078-0          | Denver               | CO                | PLM           |
| Johns Manville Technical Center                                      | 100425-0          | Littleton            | CO                | Acoustics     |
| Johns Manville Technical Center                                      | 100425-0          | Littleton            | CO                | Thermal Insl. |
| National Environmental Reference<br>Laboratory                       | 101593-0          | Denver               | CO                | PLM           |
| Reservoirs Environmental Services, Inc.                              | 101896-0          | Denver               | CO                | PLM           |
| Reservoirs Environmental Services, Inc.                              | 101896-0          | Denver               | CO                | TEM           |
| Storagtek Open Area Test Site                                        | 200251-0          | Louisville           | CO                | EC&T          |
| Strom Environmental                                                  | 200450-0          | Denver               | CO                | PLM           |
| TUV Product Service, Inc.                                            | 100271-1          | Boulder              | CO                | EC&T          |
| U.S. EPA - National Enforcement<br>Investigations Center             | 101703-0          | Denver               | CO                | PLM           |
| <b>CT</b>                                                            |                   |                      |                   |               |
| Absolute Standards, Inc.                                             | 200390-0          | Hamden               | CT                | PPT           |
| AccuStandard, Inc.                                                   | 200389-0          | New Haven            | CT                | PPT           |
| ChemScope, Inc.                                                      | 101061-0          | North Haven          | CT                | PLM           |
| Eastern Materials Testing Lab a division of<br>Jaworski Geotech      | 100315-0          | Berlin               | CT                | Construction  |
| Electric Boat Corp/A General Dynamics Co.<br>Radiological Ctrl. Dept | 100560-0          | Groton               | CT                | Dosimetry     |
| EnviroMed Services, Inc.                                             | 101514-0          | New Haven            | CT                | PLM           |
| Fairfield Testing Laboratory, Inc.                                   | 100317-0          | Stamford             | CT                | Construction  |
| HYGENIX, INC.                                                        | 101199-0          | Stamford             | CT                | PLM           |
| Independent Materials Testing Laboratories,<br>Inc.                  | 100316-0          | Plainville           | CT                | Construction  |
| Materials Testing, Inc.                                              | 100320-0          | Milford              | CT                | Construction  |
| Mystic Air Quality Consultants, Inc.                                 | 101282-0          | Groton               | CT                | PLM           |
| Northeast Nuclear Energy Co. Dosimetry<br>Laboratory                 | 100540-0          | Waterford            | CT                | Dosimetry     |
| Pratt & Whitney Materials Control<br>Lab/Quality & Standards Lab     | 200336-0          | East Hartford        | CT                | Fasteners     |
| Special Testing Laboratories, Inc.                                   | 100308-0          | Bethel               | CT                | Construction  |
| State of Connecticut                                                 | 101237-0          | Hartford             | CT                | PLM           |
| Test-Con Incorporated                                                | 200018-0          | Danbury              | CT                | Construction  |
| TRC Environmental Corporation                                        | 101424-0          | Windsor              | CT                | PLM           |
| Tri-State Materials Testing Lab, Inc.                                | 200010-0          | Wallingford          | CT                | Construction  |
| TUV Rheinland of North America, Inc.                                 | 200111-0          | Newtown              | CT                | EC&T          |
| <b>DE</b>                                                            |                   |                      |                   |               |
| Batta Laboratories, Inc.                                             | 101032-0          | Newark               | DE                | PLM           |
| Batta Laboratories, Inc.                                             | 101032-0          | Newark               | DE                | TEM           |
| Environmental Testing, Inc.                                          | 101848-0          | Middletown           | DE                | PLM           |
| <b>FL</b>                                                            |                   |                      |                   |               |
| Advanced Industrial Hygiene Services, Inc.                           | 101006-0          | Miami                | FL                | PLM           |
| American Asbestos Laboratories, Inc.                                 | 101775-0          | Miami Lakes          | FL                | PLM           |
| Apollo Environmental, Inc.                                           | 101871-0          | Gibsonston           | FL                | PLM           |
| BPB America, Inc.                                                    | 200520-0          | St. Petersburg       | FL                | Acoustics     |
| Celotex Technical Center                                             | 100417-0          | St. Petersburg       | FL                | Thermal Insl. |
| Comprehensive Health<br>Services-Environmental Health PLM            | 101759-0          | Kennedy Space Center | FL                | PLM           |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                                 | NVLAP<br>LAB CODE | CITY           | STATE/<br>COUNTRY | FIELD       |
|-----------------------------------------------------------------|-------------------|----------------|-------------------|-------------|
| Laboratory                                                      |                   |                |                   |             |
| Dove Environmental Corporation                                  | 102053-0          | Miami          | FL                | PLM         |
| E. M. Analytical, Inc.                                          | 101902-0          | Dania          | FL                | TEM         |
| EMSL Analytical, Inc.                                           | 101151-0          | Orlando        | FL                | PLM         |
| EMSL Analytical, Inc.                                           | 101151-0          | Orlando        | FL                | TEM         |
| EMSL Analytical, Inc.                                           | 200204-0          | N. Miami Beach | FL                | PLM         |
| EMSL Analytical, Inc.                                           | 200204-0          | N. Miami Beach | FL                | TEM         |
| Florida Power & Light Company                                   | 100544-0          | Juno Beach     | FL                | Dosimetry   |
| GLE Associates, Inc.                                            | 102003-0          | Tampa          | FL                | PLM         |
| Hygeia Laboratories, Inc.                                       | 200335-0          | Miami          | FL                | PLM         |
| Hygeia Laboratories, Inc.                                       | 200335-0          | Miami          | FL                | TEM         |
| Law Engineering and Environmental<br>Services, Inc.             | 101515-0          | Tampa          | FL                | PLM         |
| Law Engineering and Environmental<br>Services, Inc.             | 101515-1          | Miami Lakes    | FL                | PLM         |
| Motorola PPG Compliance Laboratory                              | 200318-0          | Boynton Beach  | FL                | EC&T        |
| Occupational Health Conservation, Inc.                          | 102050-0          | Jacksonville   | FL                | PLM         |
| Palmetto Laboratory, Inc.                                       | 102077-0          | St. Petersburg | FL                | PLM         |
| Paradyne Corporation                                            | 200125-0          | Largo          | FL                | EC&T        |
| R. Robinson Analytical Services, Inc.                           | 102041-0          | Pensacola      | FL                | PLM         |
| <b>GA</b>                                                       |                   |                |                   |             |
| American Carpet Laboratories, Inc.                              | 100139-0          | Ringgold       | GA                | Carpet      |
| Analytical Environmental Services, Inc.                         | 102082-0          | Atlanta        | GA                | PLM         |
| Analytical Environmental Services, Inc.                         | 102082-0          | Atlanta        | GA                | TEM         |
| Beaulieu of America - Carpet Testing Lab                        | 100190-0          | Dalton         | GA                | Carpet      |
| Cape Environmental Management, Inc.                             | 102111-0          | Atlanta        | GA                | PLM         |
| Clayton Group Services                                          | 101125-0          | Kennesaw       | GA                | PLM         |
| Clayton Group Services                                          | 101125-0          | Kennesaw       | GA                | TEM         |
| Commercial Testing Company                                      | 100120-0          | Dalton         | GA                | Carpet      |
| Cooper Lighting - Metalux Research<br>Laboratories              | 200050-0          | Americus       | GA                | Lighting    |
| EMSL Analytical, Inc.                                           | 101048-1          | Atlanta        | GA                | PLM         |
| EMSL Analytical, Inc.                                           | 101048-1          | Atlanta        | GA                | TEM         |
| Georgia Power Company/Enviro. Affairs,<br>Enviro. Lab-Dosimetry | 100551-0          | Smyrna         | GA                | Dosimetry   |
| GSC Environmental Laboratories, Inc.                            | 101626-0          | Augusta        | GA                | PLM         |
| Hygeia Laboratories, Inc.                                       | 102087-0          | Marietta       | GA                | PLM         |
| Independent Textile Testing Service, Inc.                       | 100166-0          | Dalton         | GA                | Carpet      |
| Interface Testing Laboratory                                    | 200402-0          | LaGrange       | GA                | Carpet      |
| Intertek Testing Services NA Inc.                               | 100409-0          | Duluth         | GA                | EC&T        |
| Lithonia Testing Laboratories                                   | 200007-0          | Conyers        | GA                | Lighting    |
| Materials Analytical Services, Inc.                             | 101235-0          | Suwanee        | GA                | PLM         |
| Materials Analytical Services, Inc.                             | 101235-0          | Suwanee        | GA                | TEM         |
| Mohawk Industries, Inc.- Lyerly Plant                           | 100156-0          | Lyerly         | GA                | Carpet      |
| Professional Testing Laboratory, Inc.                           | 100297-0          | Dalton         | GA                | Carpet      |
| Shaw Industries, Inc., Central Laboratory<br>Operations         | 100193-0          | Dalton         | GA                | Carpet      |
| SWFLANT Calibration Laboratory Operated<br>by Lockheed Martin   | 200403-0          | Kings Bay      | GA                | Calibration |
| TSi, Testing Services, Inc.                                     | 100108-0          | Dalton         | GA                | Carpet      |
| United States Technologies, Inc.                                | 200162-0          | Alpharetta     | GA                | EC&T        |



# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                                   | NVLAP<br>LAB CODE | CITY           | STATE/<br>COUNTRY | FIELD        |
|-------------------------------------------------------------------|-------------------|----------------|-------------------|--------------|
| <b>HI</b>                                                         |                   |                |                   |              |
| Brewer Environmental Services Industrial Hygiene Group Laboratory | 102085-0          | Honolulu       | HI                | PLM          |
| PWC Environmental Laboratory, Pearl Harbor                        | 200369-0          | Pearl Harbor   | HI                | PLM          |
| White Environmental Consultants, Inc.                             | 200350-0          | Honolulu       | HI                | PLM          |
| <b>IA</b>                                                         |                   |                |                   |              |
| Intermec Technologies Corporation                                 | 100269-0          | Cedar Rapids   | IA                | EC&T         |
| Iowa Environmental Services, Inc.                                 | 101990-0          | Des Moines     | IA                | PLM          |
| Liberty Labs, Inc.                                                | 200123-0          | Kimballton     | IA                | Calibration  |
| University (State) Hygienic Laboratory                            | 101288-0          | Iowa City      | IA                | PLM          |
| University (State) Hygienic Laboratory                            | 101288-0          | Iowa City      | IA                | TEM          |
| <b>ID</b>                                                         |                   |                |                   |              |
| Bechtel BWXT Idaho, Standards and Calibration Lab                 | 200115-0          | Idaho Falls    | ID                | Calibration  |
| INEEL Materials Testing Lab CFA 602                               | 200415-0          | Idaho Falls    | ID                | Construction |
| <b>IL</b>                                                         |                   |                |                   |              |
| Aires Consulting Group, Inc.                                      | 101014-0          | Batavia        | IL                | PLM          |
| Aires Consulting Group, Inc.                                      | 101014-0          | Batavia        | IL                | TEM          |
| AnalyticaLab                                                      | 101727-0          | Willow Springs | IL                | PLM          |
| Casey Products, Inc.                                              | 200278-0          | Lisle          | IL                | Fasteners    |
| Clinton Power Station                                             | 100570-0          | Clinton        | IL                | Dosimetry    |
| D.L.S. Electronic Systems, Inc.                                   | 100276-0          | Wheeling       | IL                | EC&T         |
| Davis Environmental Labs, Inc.                                    | 101039-0          | Chicago        | IL                | PLM          |
| Davis Environmental Labs, Inc.                                    | 101039-0          | Chicago        | IL                | TEM          |
| Elite Electronic Engineering Inc.                                 | 100278-0          | Downers Grove  | IL                | EC&T         |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis    | 200399-0          | Chicago        | IL                | PLM          |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis    | 200399-0          | Chicago        | IL                | TEM          |
| Exelon Generation Company, LLC - TLD Processing Laboratory        | 100541-0          | Wilmington     | IL                | Dosimetry    |
| Hygieneering, Inc.                                                | 101997-0          | Willowbrook    | IL                | PLM          |
| JMS Environmental Associates, Ltd.                                | 102012-0          | Westmont       | IL                | PLM          |
| JMS Environmental Associates, Ltd.                                | 102012-0          | Westmont       | IL                | TEM          |
| Landauer, Inc.                                                    | 100518-0          | Glenwood       | IL                | Dosimetry    |
| Litetronics International                                         | 200504-0          | Alsip          | IL                | Lighting     |
| MacLean Fasteners - QC Laboratory                                 | 200153-0          | Mundelein      | IL                | Fasteners    |
| Midwest Laboratories, Inc.                                        | 101894-0          | Countryside    | IL                | PLM          |
| Midwest Laboratories, Inc.                                        | 101894-0          | Countryside    | IL                | TEM          |
| Modern Plating Corporation                                        | 200320-0          | Freeport       | IL                | Fasteners    |
| Northwestern Steel and Wire Company                               | 200224-0          | Sterling       | IL                | Fasteners    |
| NYLOK Fastener Corporation - Chicago Testing Laboratory           | 200275-0          | Lincolnwood    | IL                | Fasteners    |
| Philip Environmental Services Corp.                               | 101192-0          | Columbia       | IL                | PLM          |
| Prospect Testing Labs, Inc.                                       | 200328-0          | Des Plaines    | IL                | Fasteners    |
| Raymond-Beling, Inc.                                              | 101356-0          | Moline         | IL                | PLM          |
| RCM Laboratories, Inc.                                            | 101853-0          | Countryside    | IL                | PLM          |
| Riverbank Acoustical Laboratories                                 | 100227-0          | Geneva         | IL                | Acoustics    |



# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                     | NVLAP<br>LAB CODE | CITY          | STATE/<br>COUNTRY | FIELD         |
|-----------------------------------------------------|-------------------|---------------|-------------------|---------------|
| Rockford Bolt & Steel Co.                           | 200255-0          | Rockford      | IL                | Fasteners     |
| STAT Analysis Corporation                           | 101202-0          | Chicago       | IL                | PLM           |
| STAT Analysis Corporation                           | 101202-0          | Chicago       | IL                | TEM           |
| STERIS-Isomedix Services                            | 200235-0          | Morton Grove  | IL                | Calibration   |
| STS Consultants, Ltd.                               | 100191-0          | Vernon Hills  | IL                | Construction  |
| TEM, Incorporated                                   | 101130-0          | Glen Ellyn    | IL                | PLM           |
| TEM, Incorporated                                   | 101130-0          | Glen Ellyn    | IL                | TEM           |
| The Dow Chemical Company- NA System<br>House-Joliet | 100210-0          | Joliet        | IL                | Thermal Insl. |
| Underwriters Laboratories Inc.                      | 100414-0          | Northbrook    | IL                | EC&T          |
| Underwriters Laboratories Inc.                      | 100414-0          | Northbrook    | IL                | Thermal Insl. |
| United Analytical Services, Inc.                    | 101732-0          | Downers Grove | IL                | PLM           |
| United Analytical Services, Inc.                    | 101732-0          | Downers Grove | IL                | TEM           |
| United Steel and Fasteners Inc.                     | 200341-0          | Itasca        | IL                | Fasteners     |
| USG Research - Construction Systems<br>Laboratory   | 200132-0          | Libertyville  | IL                | Acoustics     |

## IN

|                                                   |          |              |    |               |
|---------------------------------------------------|----------|--------------|----|---------------|
| ACM Environmental, Inc.                           | 101977-0 | South Bend   | IN | PLM           |
| Aearo Company, E·A·RCAL Acoustical<br>Laboratory  | 100374-0 | Indianapolis | IN | Acoustics     |
| EMSL Analytical, Inc.                             | 200188-0 | Indianapolis | IN | PLM           |
| EMSL Analytical, Inc.                             | 200188-0 | Indianapolis | IN | TEM           |
| ESG Laboratories                                  | 102029-0 | Indianapolis | IN | PLM           |
| Fuji Component Parts USA, Inc.                    | 200180-0 | Indianapolis | IN | Fasteners     |
| GTE Electronic Repair Services                    | 200352-0 | Fort Wayne   | IN | Calibration   |
| Indiana Division of Weights and Measures          | 200421-0 | Indianapolis | IN | Calibration   |
| Knauf Fiber Glass Research Laboratory             | 100248-0 | Shelbyville  | IN | Thermal Insl. |
| Micro Air, Inc.                                   | 101221-0 | Indianapolis | IN | PLM           |
| Raytheon Technical Services Co. EMI<br>Laboratory | 200317-0 | Indianapolis | IN | EC&T          |

## KS

|                                     |          |           |    |           |
|-------------------------------------|----------|-----------|----|-----------|
| Asbestos Consulting & Testing (ACT) | 101649-0 | Lenexa    | KS | PLM       |
| MAC Fasteners, Inc.                 | 200141-0 | Ottawa    | KS | Fasteners |
| Rogers Labs, Inc.                   | 200087-0 | Louisburg | KS | EC&T      |

## KY

|                                      |          |            |    |                 |
|--------------------------------------|----------|------------|----|-----------------|
| Analytical Industries, Inc.          | 101855-0 | Paducah    | KY | PLM             |
| GE Owensboro Test Laboratory         | 200305-0 | Owensboro  | KY | Electric Motors |
| Intertek Testing Services NA Inc.    | 100274-0 | Lexington  | KY | EC&T            |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY | PLM             |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY | TEM             |

## LA

|                                                                      |          |              |    |           |
|----------------------------------------------------------------------|----------|--------------|----|-----------|
| CA Laboratories, L.L.C.                                              | 200452-0 | Baton Rouge  | LA | PLM       |
| Chrisope Technologies, A Division of Remel                           | 200388-0 | Lake Charles | LA | PPT       |
| EMSL Analytical, Inc.                                                | 200375-0 | Baton Rouge  | LA | PLM       |
| EMSL Analytical, Inc.                                                | 200375-0 | Baton Rouge  | LA | TEM       |
| Entergy Operations, Inc.                                             | 100535-0 | Killona      | LA | Dosimetry |
| Louisiana Department of Environmental<br>Quality Microanalytical Lab | 102000-0 | Baton Rouge  | LA | PLM       |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                               | NVLAP<br>LAB CODE | CITY                    | STATE/<br>COUNTRY | FIELD         |
|---------------------------------------------------------------|-------------------|-------------------------|-------------------|---------------|
| <b>MA</b>                                                     |                   |                         |                   |               |
| Chomerics Test Services (CTS)                                 | 100296-0          | Woburn                  | MA                | EC&T          |
| Compaq Regulatory Compliance Engineering - East               | 100413-0          | Marlboro                | MA                | EC&T          |
| Covino Environmental Associates, Inc.                         | 101781-0          | Woburn                  | MA                | PLM           |
| David L. Ellis Co., Incorporated                              | 200127-0          | Acton                   | MA                | Calibration   |
| Duke Engineering and Services Environmental Laboratory        | 100524-0          | Marlborough             | MA                | Dosimetry     |
| EMC Corporation                                               | 100339-0          | Westboro                | MA                | EC&T          |
| Holometrix - Micromet                                         | 100113-0          | Bedford                 | MA                | Thermal Insl. |
| Hygienetics Laboratory Services                               | 101147-0          | Boston                  | MA                | PLM           |
| Hygienetics Laboratory Services                               | 101147-0          | Boston                  | MA                | TEM           |
| Instron Field Calibration Laboratory                          | 200301-0          | Canton                  | MA                | Calibration   |
| Instron Force Calibration Laboratory                          | 105023-0          | Canton                  | MA                | Calibration   |
| Integrity Design & Test Services, an Entela Company           | 200004-0          | Littleton               | MA                | EC&T          |
| Intertek Testing Services NA Inc.                             | 100270-0          | Boxborough              | MA                | EC&T          |
| Motorola EMC Test Services Lab                                | 200005-0          | Mansfield               | MA                | EC&T          |
| National Technical Systems                                    | 100347-0          | Boxborough              | MA                | EC&T          |
| OSRAM SYLVANIA, Test & Measurements Laboratory                | 100403-0          | Beverly                 | MA                | Lighting      |
| ProScience Analytical Services, Inc.                          | 200090-0          | Woburn                  | MA                | PLM           |
| ProScience Analytical Services, Inc.                          | 200090-0          | Woburn                  | MA                | TEM           |
| Quest Engineering Solutions, Inc.                             | 200036-0          | N. Billerica            | MA                | EC&T          |
| SCILAB BOSTON, Inc.                                           | 102079-0          | East Weymouth           | MA                | PLM           |
| SCILAB BOSTON, Inc.                                           | 102079-0          | East Weymouth           | MA                | TEM           |
| Test Site Services, Inc.                                      | 100419-0          | Marlboro                | MA                | EC&T          |
| W.R. Grace & Co.                                              | 200258-0          | Cambridge               | MA                | Construction  |
| <b>MD</b>                                                     |                   |                         |                   |               |
| AMA Analytical Services, Inc.                                 | 101143-0          | Lanham                  | MD                | PLM           |
| AMA Analytical Services, Inc.                                 | 101143-0          | Lanham                  | MD                | TEM           |
| ATC Associates Inc.                                           | 200250-0          | Columbia                | MD                | PLM           |
| Calvert Cliffs Nuclear Power Plant, Inc.                      | 100501-0          | Lusby                   | MD                | Dosimetry     |
| CDRH X-Ray Calibration Laboratory                             | 105018-0          | Rockville               | MD                | Calibration   |
| COACT Inc. CAFE Laboratory                                    | 200416-0          | Columbia                | MD                | Common        |
| COACT Inc. CAFE Laboratory                                    | 200416-0          | Columbia                | MD                | Cryptographic |
| Composite Panel Association (CPA)                             | 100418-0          | Gaithersburg            | MD                | Wood Prod.    |
| Computer Sciences Corporation                                 | 200426-0          | Hanover                 | MD                | Common        |
| DHMH-Air Quality Laboratory                                   | 101523-0          | Baltimore               | MD                | PLM           |
| EMSL Analytical, Inc.                                         | 200293-0          | Beltsville              | MD                | PLM           |
| EMSL Analytical, Inc.                                         | 200293-0          | Beltsville              | MD                | TEM           |
| MET Laboratories, Inc.                                        | 100273-0          | Baltimore               | MD                | EC&T          |
| NAHB Research Center, Inc.                                    | 100104-0          | Upper Marlboro          | MD                | Commercial    |
| NAHB Research Center, Inc.                                    | 100104-0          | Upper Marlboro          | MD                | Thermal Insl. |
| Naval Dosimetry Center                                        | 100504-0          | Bethesda                | MD                | Dosimetry     |
| NAWC AD 5.1.7.2. EMI Lab                                      | 100408-0          | Patuxent River          | MD                | EC&T          |
| PCTEST Engineering Laboratory, Inc.                           | 100431-0          | Columbia                | MD                | EC&T          |
| SAIC Common Criteria Testing Laboratory                       | 200427-0          | Columbia                | MD                | Common        |
| U.S. Army Center for Health Promotion and Preventive Medicine | 200044-0          | Aberdeen Proving Ground | MD                | PLM           |
| Washington Laboratories, Ltd.                                 | 200066-0          | Gaithersburg            | MD                | EC&T          |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                                     | NVLAP<br>LAB CODE | CITY                  | STATE/<br>COUNTRY | FIELD         |
|---------------------------------------------------------------------|-------------------|-----------------------|-------------------|---------------|
| Windermere Info. Tech. Sys.<br>Military/Commercial Compliance Lab.  | 200084-0          | Annapolis             | MD                | EC&T          |
| <b>MI</b>                                                           |                   |                       |                   |               |
| AHD                                                                 | 200129-0          | Dowagiac              | MI                | EC&T          |
| Apex Research, Inc.                                                 | 102118-0          | Whitmore Lake         | MI                | PLM           |
| Detroit Edison, Fermi 2 Dosimetry<br>Laboratory                     | 100529-0          | Newport               | MI                | Dosimetry     |
| Dexter Fastener Technologies, Inc.                                  | 200144-0          | Dexter                | MI                | Fasteners     |
| Dow Chemical N. America Foam Products<br>Research, Prod. Perf. Lab. | 100103-0          | Midland               | MI                | Thermal Insl. |
| Eaton E3 Laboratory                                                 | 100382-0          | Southfield            | MI                | EC&T          |
| Electronic Automation                                               | 200410-0          | Grand Rapids          | MI                | Calibration   |
| EMSL Analytical, Inc.                                               | 101048-4          | Ann Arbor             | MI                | PLM           |
| EMSL Analytical, Inc.                                               | 101048-4          | Ann Arbor             | MI                | TEM           |
| Fibertec, Inc.                                                      | 101510-0          | Holt                  | MI                | PLM           |
| MacLean Maynard Laboratory Services                                 | 200451-0          | Chesterfield Township | MI                | Fasteners     |
| Michigan Dept. of Agriculture, E.C. Heffron<br>Metrology Laboratory | 200408-0          | Williamston           | MI                | Calibration   |
| NYLOK Fastener Corporation                                          | 200273-0          | Macomb                | MI                | Fasteners     |
| Wolverine Plating Corp.                                             | 200230-0          | Roseville             | MI                | Fasteners     |
| Wonder Makers Environmental, Inc.                                   | 102065-0          | Kalamazoo             | MI                | PLM           |
| <b>MN</b>                                                           |                   |                       |                   |               |
| 3M Product Safety EMC Laboratory                                    | 200033-0          | St. Paul              | MN                | EC&T          |
| Braun Intertec Corporation                                          | 101234-0          | Minneapolis           | MN                | PLM           |
| Braun Intertec Corporation                                          | 101234-0          | Minneapolis           | MN                | TEM           |
| EMSL Analytical, Inc.                                               | 200019-0          | Minneapolis           | MN                | PLM           |
| EMSL Analytical, Inc.                                               | 200019-0          | Minneapolis           | MN                | TEM           |
| IBM Rochester EMC Lab                                               | 200091-0          | Rochester             | MN                | EC&T          |
| Institute for Environmental Assessment                              | 101249-0          | Brooklyn Park         | MN                | PLM           |
| Intertek Testing Services NA, Inc.                                  | 200049-0          | Oakdale               | MN                | EC&T          |
| Legend Technical Services, Inc.                                     | 102081-0          | St. Paul              | MN                | PLM           |
| Minnesota Metrology Laboratory                                      | 105003-0          | St. Paul              | MN                | Calibration   |
| Nova Consulting Group, Inc.                                         | 101545-0          | Chaska                | MN                | PLM           |
| Orfield Laboratories, Inc.                                          | 200248-0          | Minneapolis           | MN                | Acoustics     |
| Stork-Twin City Testing Corporation                                 | 200046-0          | St. Paul              | MN                | Acoustics     |
| TUV Product Service, Inc.                                           | 100271-0          | New Brighton          | MN                | EC&T          |
| TUV Telecom Services, Inc.                                          | 200039-0          | St. Paul              | MN                | EC&T          |
| <b>MO</b>                                                           |                   |                       |                   |               |
| Boeing - St. Louis Electromagnetic<br>Compatibility Laboratory      | 200382-0          | St. Louis             | MO                | EC&T          |
| EnviroHealth Technologies, Inc.                                     | 200374-0          | St. Louis             | MO                | PLM           |
| Environmental Health Laboratories                                   | 101506-0          | Clayton               | MO                | PLM           |
| Honeywell FM&T Metrology                                            | 200108-0          | Kansas City           | MO                | Calibration   |
| Kingston Environmental Laboratory                                   | 200041-0          | Lee's Summit          | MO                | PLM           |
| Larron Laboratory                                                   | 101415-0          | Cape Girardeau        | MO                | PLM           |
| Mallinckrodt, Inc.                                                  | 100503-0          | Maryland Heights      | MO                | Dosimetry     |
| Microscopic Analysis, Inc.                                          | 101037-0          | St. Louis             | MO                | PLM           |
| OCCU-TEC, Inc.                                                      | 102025-0          | Kansas City           | MO                | PLM           |
| Union Electric Company, Callaway Plant                              | 100502-0          | Fulton                | MO                | Dosimetry     |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                                     | NVLAP<br>LAB CODE | CITY                   | STATE/<br>COUNTRY | FIELD           |
|---------------------------------------------------------------------|-------------------|------------------------|-------------------|-----------------|
| <b>MS</b>                                                           |                   |                        |                   |                 |
| Daybrite Lighting (Genlyte Thomas Group)<br>Photometric Laboratory  | 200016-0          | Tupelo                 | MS                | Lighting        |
| <b>MT</b>                                                           |                   |                        |                   |                 |
| Northern Analytical Laboratories, Inc.                              | 101292-0          | Billings               | MT                | PLM             |
| <b>NC</b>                                                           |                   |                        |                   |                 |
| Advanced Energy, Industrial Energy<br>Laboratory                    | 200081-0          | Raleigh                | NC                | Electric Motors |
| Asbestos Analysis and Information Service,<br>Inc.                  | 101261-0          | Four Oaks              | NC                | PLM             |
| Carolina Environmental, Inc.                                        | 101768-0          | Cary                   | NC                | PLM             |
| Carolina Power & Light Company, Harris<br>Energy & Enviro. Center   | 100517-0          | New Hill               | NC                | Dosimetry       |
| Duke Power Company Dosimetry Laboratory                             | 100505-0          | Charlotte              | NC                | Dosimetry       |
| EMSL Analytical, Inc.                                               | 102104-0          | Greensboro             | NC                | PLM             |
| EMSL Analytical, Inc.                                               | 102104-0          | Greensboro             | NC                | TEM             |
| Flextronics EMC Laboratories East Coast<br>Operations               | 200094-0          | Youngsville            | NC                | EC&T            |
| IBM RTP PSG EMC Test Labs                                           | 200200-0          | Research Triangle Park | NC                | EC&T            |
| NSI Solutions, Inc.                                                 | 200440-0          | Raleigh                | NC                | PPT             |
| S&ME, Inc.                                                          | 102075-0          | Charlotte              | NC                | PLM             |
| Troxler Radiation Monitoring Svc. a div. of<br>Troxler Elect. Labs  | 100559-0          | Research Triangle Park | NC                | Dosimetry       |
| Underwriters Laboratories, Inc.                                     | 200246-0          | Research Triangle Park | NC                | EC&T            |
| <b>ND</b>                                                           |                   |                        |                   |                 |
| A.R.C. Laboratories, Inc.                                           | 101832-0          | Grand Forks            | ND                | PLM             |
| <b>NH</b>                                                           |                   |                        |                   |                 |
| Andover Corporation                                                 | 200461-0          | Salem                  | NH                | NTRMs           |
| BAE Systems                                                         | 200425-0          | Nashua                 | NH                | EC&T            |
| Cabletron Systems, Inc.                                             | 200121-0          | Rochester              | NH                | EC&T            |
| Dames & Moore, Inc.                                                 | 101433-0          | Salem                  | NH                | PLM             |
| Retlif Testing Laboratories                                         | 100267-1          | Goffstown              | NH                | EC&T            |
| The Scott Lawson Group, Ltd.                                        | 101228-0          | Concord                | NH                | PLM             |
| <b>NJ</b>                                                           |                   |                        |                   |                 |
| Advanced Compliance Laboratory                                      | 200101-0          | Hillsborough           | NJ                | EC&T            |
| Aerospace NYLOK - a subsidiary of the<br>NYLOK Fastener Corporation | 200271-0          | Hawthorne              | NJ                | Fasteners       |
| Dwight D.I.C., Inc.                                                 | 200405-0          | Lyndhurst              | NJ                | Calibration     |
| EAI, Inc.                                                           | 102114-0          | Jersey City            | NJ                | PLM             |
| EMSL Analytical Inc. Mobile Laboratory                              | 200481-0          | Westmont               | NJ                | PLM             |
| EMSL Analytical Inc. Mobile Laboratory                              | 200481-0          | Westmont               | NJ                | TEM             |
| EMSL Analytical, Inc.                                               | 101048-0          | Westmont               | NJ                | PLM             |
| EMSL Analytical, Inc.                                               | 101048-0          | Westmont               | NJ                | TEM             |
| EMSL Analytical, Inc.                                               | 101048-2          | Piscataway             | NJ                | PLM             |
| EMSL Analytical, Inc.                                               | 101048-2          | Piscataway             | NJ                | TEM             |
| Enviro Techniques, Inc.                                             | 200024-0          | Paterson               | NJ                | PLM             |
| Environmental Monitoring & Consulting                               | 101087-0          | Somerville             | NJ                | PLM             |



**INDEX C. LISTING BY STATE/COUNTRY - continued**

| <b>LABORATORY NAME</b>                                         | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>      | <b>STATE/<br/>COUNTRY</b> | <b>FIELD</b> |
|----------------------------------------------------------------|---------------------------|------------------|---------------------------|--------------|
| <b>Associates</b>                                              |                           |                  |                           |              |
| Henry Troemner, LLC                                            | 105013-0                  | Thorofare        | NJ                        | Calibration  |
| Hillmann Environmental Group, L.L.C.                           | 101421-0                  | Union            | NJ                        | PLM          |
| International Asbestos Testing Laboratory                      | 101165-0                  | Mt. Laurel       | NJ                        | PLM          |
| International Asbestos Testing Laboratory                      | 101165-0                  | Mt. Laurel       | NJ                        | TEM          |
| Lucent Technologies, Global Product Compliance Lab             | 100275-0                  | Holmdel          | NJ                        | EC&T         |
| NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab. | 200222-0                  | Lakehurst        | NJ                        | EC&T         |
| Omega Environmental Services                                   | 101289-0                  | Hackensack       | NJ                        | PLM          |
| PMK Group, Inc.                                                | 101301-0                  | Kenilworth       | NJ                        | PLM          |
| Protocol Analytical Supplies, Inc.                             | 200395-0                  | Middlesex        | NJ                        | PPT          |
| Spex Certiprep Inc.                                            | 200392-0                  | Metuchen         | NJ                        | PPT          |
| <b>NM</b>                                                      |                           |                  |                           |              |
| Assaigai Analytical Laboratories, Inc.                         | 101457-0                  | Albuquerque      | NM                        | PLM          |
| Sandia National Laboratories                                   | 105002-0                  | Albuquerque      | NM                        | Calibration  |
| <b>NV</b>                                                      |                           |                  |                           |              |
| Asbestos TEM Laboratories, Inc.                                | 200104-0                  | Sparks           | NV                        | PLM          |
| Converse Consultants                                           | 102091-0                  | Reno             | NV                        | PLM          |
| U.S. EPA                                                       | 200231-0                  | Las Vegas        | NV                        | Dosimetry    |
| <b>NY</b>                                                      |                           |                  |                           |              |
| Airtek Environmental Corp.                                     | 102011-0                  | New York         | NY                        | PLM          |
| ALAC                                                           | 200323-0                  | New York         | NY                        | PLM          |
| Ambient Group, Inc.                                            | 101618-0                  | Glen Cove        | NY                        | PLM          |
| ATC Associates Inc.                                            | 101187-0                  | New York         | NY                        | PLM          |
| ATC Associates Inc.                                            | 101187-0                  | New York         | NY                        | TEM          |
| Athenica Environmental Services, Inc.                          | 101958-0                  | Long Island City | NY                        | PLM          |
| Athenica Environmental Services, Inc.                          | 101958-0                  | Long Island City | NY                        | TEM          |
| Con Edison, EH&S - ChemLab                                     | 101558-0                  | Long Island City | NY                        | PLM          |
| Con Edison, Indian Point                                       | 100538-0                  | Buchanan         | NY                        | Dosimetry    |
| Dayton T. Brown, Inc.                                          | 200422-0                  | Bohemia          | NY                        | EC&T         |
| Diviersified T.E.S.T. Technologies, Inc.                       | 200340-0                  | Groton           | NY                        | EC&T         |
| DL Labs, Inc.                                                  | 100252-0                  | New York         | NY                        | Commercial   |
| Eastern Analytical Services, Inc.                              | 101646-0                  | Elmsford         | NY                        | PLM          |
| Eastern Analytical Services, Inc.                              | 101646-0                  | Elmsford         | NY                        | TEM          |
| Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility    | 200313-0                  | Rochester        | NY                        | EC&T         |
| EMSL Analytical, Inc.                                          | 101048-9                  | New York         | NY                        | PLM          |
| EMSL Analytical, Inc.                                          | 101048-9                  | New York         | NY                        | TEM          |
| EMSL Analytical, Inc.                                          | 101048-10                 | Carle Place      | NY                        | PLM          |
| EMSL Analytical, Inc.                                          | 101048-10                 | Carle Place      | NY                        | TEM          |
| EMSL Analytical, Inc.                                          | 200056-0                  | Williamsville    | NY                        | PLM          |
| EMSL Analytical, Inc.                                          | 200056-0                  | Williamsville    | NY                        | TEM          |
| EMSL Analytical, Inc.                                          | 200333-0                  | Elmsford         | NY                        | PLM          |
| EMSL Analytical, Inc.                                          | 200333-0                  | Elmsford         | NY                        | TEM          |
| Enviro-Probe, Inc.                                             | 101222-0                  | Bronx            | NY                        | PLM          |
| Fairway Testing Company, Inc.                                  | 100340-0                  | Stony Point      | NY                        | Construction |
| Galson Laboratories                                            | 101375-0                  | East Syracuse    | NY                        | PLM          |
| GE Industrial Systems                                          | 200029-0                  | Rome             | NY                        | Calibration  |
| Ginna Nuclear Station                                          | 100514-0                  | Ontario          | NY                        | Dosimetry    |



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| LABORATORY NAME                                                  | NVLAP<br>LAB CODE | CITY             | STATE/<br>COUNTRY | FIELD        |
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| IBM Endicott EMC Lab                                             | 200418-0          | Endicott         | NY                | EC&T         |
| IBM Hudson Valley Acoustics Laboratory                           | 100323-0          | Poughkeepsie     | NY                | Acoustics    |
| IBM Poughkeepsie EMC Laboratory                                  | 200435-0          | Poughkeepsie     | NY                | EC&T         |
| IBM Shock and Vibration Laboratory                               | 200503-0          | Poughkeepsie     | NY                | Commercial   |
| Industrial Acoustics Company, Inc.,<br>Aero-Acoustics Laboratory | 100404-0          | Bronx            | NY                | Acoustics    |
| Intertek Testing Services NA Inc.                                | 100402-0          | Cortland         | NY                | Lighting     |
| JLC Environmental Consultants, Inc.                              | 101953-0          | New York         | NY                | PLM          |
| KAM Consultants                                                  | 102047-0          | Long Island City | NY                | PLM          |
| KAM Consultants                                                  | 102047-0          | Long Island City | NY                | TEM          |
| Lighting Research Center Lighting Products                       | 200480-0          | Troy             | NY                | Lighting     |
| Lockheed Martin Control Systems EMI<br>Laboratory                | 200142-0          | Johnson City     | NY                | EC&T         |
| New York Testing Laboratories, Inc.                              | 101332-0          | Bay Shore        | NY                | PLM          |
| New York Testing Laboratories, Inc.                              | 101332-0          | Bay Shore        | NY                | TEM          |
| NGC Testing Services, National Gypsum<br>Research Center         | 200291-0          | Buffalo          | NY                | Acoustics    |
| Niche Analysis, Inc.                                             | 102057-0          | Mount Vernon     | NY                | PLM          |
| NY Environmental & Analytical Labs, Inc.                         | 101967-0          | Port Washington  | NY                | PLM          |
| NYS DOH Environmental Laboratory<br>Approval Program             | 200387-0          | Albany           | NY                | PPT          |
| O'Brien & Gere Laboratories, Inc.                                | 101343-0          | Syracuse         | NY                | PLM          |
| O'Brien & Gere Laboratories, Inc.                                | 101343-0          | Syracuse         | NY                | TEM          |
| Retlif Testing Laboratories                                      | 100267-0          | Ronkonkoma       | NY                | EC&T         |
| Scientific Laboratories, Inc.                                    | 101904-1          | New York         | NY                | PLM          |
| Scientific Laboratories, Inc.                                    | 101904-1          | New York         | NY                | TEM          |
| Taylor Environmental Group, Inc.                                 | 102101-0          | Floral Park      | NY                | PLM          |
| Techni-Cal Services of Orange Cty, Inc.                          | 200459-0          | Monroe           | NY                | Calibration  |
| Testing Mechanics Corp.                                          | 102001-0          | Seaford          | NY                | PLM          |
| Testwell Laboratories, Inc./Testwell<br>Industries, Inc.         | 200083-0          | Ossining         | NY                | Construction |
| Testwell Laboratories, Inc./Testwell<br>Industries, Inc.         | 200083-0          | Ossining         | NY                | PLM          |
| Testwell Laboratories, Inc./Testwell<br>Industries, Inc.         | 200083-0          | Ossining         | NY                | TEM          |
| Underwriters Laboratories, Inc.                                  | 100255-0          | Melville         | NY                | EC&T         |
| Underwriters Laboratories, Inc.                                  | 100255-0          | Melville         | NY                | Lighting     |
| Vartest Laboratories, Inc.                                       | 200027-0          | New York         | NY                | Carpet       |
| WKP Laboratories, Inc.                                           | 101950-0          | New York City    | NY                | PLM          |

## OH

|                                                            |          |                    |    |          |
|------------------------------------------------------------|----------|--------------------|----|----------|
| Analytical Chemistry Services (ACS), Dolan<br>Chemical Lab | 102102-0 | Columbus           | OH | PLM      |
| Analytical Products Group, Inc.                            | 200384-0 | Belpre             | OH | PPT      |
| DataChem Laboratories                                      | 101917-0 | Cincinnati         | OH | PLM      |
| DataChem Laboratories                                      | 101917-0 | Cincinnati         | OH | TEM      |
| EA Group                                                   | 101019-0 | Mentor             | OH | PLM      |
| EssTek Ohio, Inc.                                          | 102093-0 | Middleburg Heights | OH | PLM      |
| Fluor Fernald, Inc., Analytical Laboratory<br>Services     | 102010-0 | Cincinnati         | OH | PLM      |
| GE Lighting- Product Testing                               | 100398-0 | Cleveland          | OH | Lighting |
| Gelles Laboratories, Division, CC<br>Technologies          | 101170-0 | Dublin             | OH | PLM      |

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| <b>LABORATORY NAME</b>                                         | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b>        | <b>STATE/<br/>COUNTRY</b> | <b>FIELD</b>  |
|----------------------------------------------------------------|---------------------------|--------------------|---------------------------|---------------|
| Gelles Laboratories, Division, CC Technologies                 | 101170-0                  | Dublin             | OH                        | TEM           |
| Integrex Testing Systems - Product Testing Laboratory          | 100109-0                  | Granville          | OH                        | Acoustics     |
| Integrex Testing Systems - Product Testing Laboratory          | 100109-0                  | Granville          | OH                        | Thermal Insl. |
| m.a.c. Paran Consulting Services, Inc.                         | 102108-0                  | Amelia             | OH                        | PLM           |
| McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory | 200463-0                  | Westerville        | OH                        | Acoustics     |
| NOVA Machine Products                                          | 200202-0                  | Middleburg Heights | OH                        | Fasteners     |
| Ohio E.M.A. Radiological Instrument Calibration Facility       | 200419-0                  | Columbus           | OH                        | Calibration   |
| TolTest, Inc.                                                  | 101594-0                  | Toledo             | OH                        | PLM           |
| Tremco, Inc. - Roofing Division, An RPM Company                | 101188-0                  | Beachwood          | OH                        | PLM           |
| Webber Gage Division / L.S. Starrett Co.                       | 200038-0                  | Cleveland          | OH                        | Calibration   |

**OK**

|                                                        |          |               |    |               |
|--------------------------------------------------------|----------|---------------|----|---------------|
| Beaulieu of America Hollytex Division                  | 100247-0 | Anadarko      | OK | Carpet        |
| Oklahoma Bureau of Standards                           | 200396-0 | Oklahoma City | OK | Calibration   |
| Oklahoma Dept. of Environmental Quality-DEQ Laboratory | 102112-0 | Oklahoma City | OK | PLM           |
| Precision Testing Laboratories, Inc.                   | 101580-0 | Moore         | OK | PLM           |
| QuanTEM Laboratories, LLC                              | 101959-0 | Oklahoma City | OK | PLM           |
| QuanTEM Laboratories, LLC                              | 101959-0 | Oklahoma City | OK | TEM           |
| SGS U.S. Testing Company, Inc.                         | 100416-0 | Tulsa         | OK | Commercial    |
| SGS U.S. Testing Company, Inc.                         | 100416-0 | Tulsa         | OK | Thermal Insl. |
| TEC-AN, Inc.                                           | 200325-0 | Oklahoma City | OK | PLM           |

**OR**

|                                                                   |          |             |    |            |
|-------------------------------------------------------------------|----------|-------------|----|------------|
| InFocus Systems, Inc.                                             | 200152-0 | Wilsonville | OR | EC&T       |
| Northwest EMC, Inc.                                               | 200059-0 | Hillsboro   | OR | EC&T       |
| PBS Environmental Building Consultants, Inc.                      | 101910-0 | Portland    | OR | PLM        |
| Professional Service Industries, Inc., Pittsburgh Test. Lab. Div. | 100430-0 | Eugene      | OR | Wood Prod. |
| Timberco, Inc.- dba TECO                                          | 100420-0 | Eugene      | OR | Wood Prod. |
| Willamette Industries, Inc. West Coast Development Lab            | 200045-0 | Wilsonville | OR | Commercial |

**PA**

|                                                                   |          |                    |    |              |
|-------------------------------------------------------------------|----------|--------------------|----|--------------|
| Accredited Environmental Technologies, Inc.                       | 101051-0 | Media              | PA | PLM          |
| AGX, Inc.                                                         | 101578-0 | Cranberry Township | PA | PLM          |
| Allegheny Asbestos Analysis                                       | 101704-0 | Carnegie           | PA | PLM          |
| American Testing Laboratories, Inc.                               | 100146-0 | Lancaster          | PA | Construction |
| Analab, LLC                                                       | 200260-0 | Sterling           | PA | EC&T         |
| Architectural Testing Inc.                                        | 200361-0 | York               | PA | Acoustics    |
| Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center | 100228-0 | Lancaster          | PA | Acoustics    |
| Criterion Laboratories, Inc.                                      | 102046-0 | Bensalem           | PA | PLM          |
| Dodge-Regupol, Inc. Laboratory                                    | 200030-0 | Lancaster          | PA | Commercial   |
| FENOC, Beaver Valley Power Station                                | 100521-0 | Shippingport       | PA | Dosimetry    |
| IIT Research Institute/R&B Operation                              | 100280-0 | West Conshohocken  | PA | EC&T         |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                                      | NVLAP<br>LAB CODE | CITY               | STATE/<br>COUNTRY | FIELD           |
|----------------------------------------------------------------------|-------------------|--------------------|-------------------|-----------------|
| Instrument Specialties Co., Inc.                                     | 200076-0          | Delaware Water Gap | PA                | EC&T            |
| Kevco Services, Inc.                                                 | 101941-0          | Butler             | PA                | PLM             |
| Levecque Technical Center                                            | 100101-0          | Blue Bell          | PA                | Thermal Insl.   |
| Michael & Associates                                                 | 100427-0          | State College      | PA                | Acoustics       |
| PA DEP Bureau of Laboratories                                        | 101323-0          | Harrisburg         | PA                | PLM             |
| Philip Analytical Services                                           | 101262-0          | Reading            | PA                | PLM             |
| Philip Analytical Services                                           | 101262-0          | Reading            | PA                | TEM             |
| PPL Susquehanna, LLC                                                 | 100554-0          | Allentown          | PA                | Dosimetry       |
| PSI                                                                  | 101350-0          | Pittsburgh         | PA                | PLM             |
| PSI                                                                  | 101350-0          | Pittsburgh         | PA                | TEM             |
| Republic Technologies International,<br>Franklin Chemical Laboratory | 200148-0          | Johnstown          | PA                | Fasteners       |
| RJ Lee Group, Inc.                                                   | 101208-0          | Monroeville        | PA                | PLM             |
| RJ Lee Group, Inc.                                                   | 101208-0          | Monroeville        | PA                | TEM             |
| Volz Environmental Services, Inc.                                    | 101269-0          | Pittsburgh         | PA                | PLM             |
| <b>PR</b>                                                            |                   |                    |                   |                 |
| AES International                                                    | 200051-0          | Santurce           | PR                | PLM             |
| <b>RI</b>                                                            |                   |                    |                   |                 |
| RI Analytical Laboratories, Inc.                                     | 101440-0          | Warwick            | RI                | PLM             |
| SNB Laboratory                                                       | 200308-0          | Cumberland         | RI                | Fasteners       |
| Ultra Scientific, Inc.                                               | 200379-0          | North Kingstown    | RI                | PPT             |
| <b>SC</b>                                                            |                   |                    |                   |                 |
| Compliance Test Laboratories, Inc.                                   | 200237-0          | Liberty            | SC                | EC&T            |
| Davis & Floyd, Inc.                                                  | 101410-0          | Greenwood          | SC                | PLM             |
| South Carolina Department of Health &<br>Environmental Control       | 101572-0          | Columbia           | SC                | PLM             |
| <b>TN</b>                                                            |                   |                    |                   |                 |
| A.O. Smith (Lexington) Engineering<br>Laboratory                     | 200053-0          | Lexington          | TN                | Electric Motors |
| Leland-Powell Fasteners, Inc. Fastener<br>Testing Laboratory         | 200171-0          | Martin             | TN                | Fasteners       |
| National Econ Corporation                                            | 200047-0          | Memphis            | TN                | PLM             |
| Oak Ridge Metrology Center                                           | 105000-0          | Oak Ridge          | TN                | Calibration     |
| Philips Testing Service                                              | 200409-0          | Knoxville          | TN                | EC&T            |
| R & D Services, Inc.                                                 | 200265-0          | Cookeville         | TN                | Thermal Insl.   |
| Tennessee Valley Authority External<br>Dosimetry Service             | 100516-0          | Soddy-Daisy        | TN                | Dosimetry       |
| <b>TX</b>                                                            |                   |                    |                   |                 |
| A & B Environmental Services, Inc.                                   | 101793-0          | Houston            | TX                | PLM             |
| Acoustic Systems Acoustical Research<br>Facility                     | 100286-0          | Austin             | TX                | Acoustics       |
| Atomic Energy Industrial Laboratory of the<br>Southwest, Inc.        | 100556-0          | Houston            | TX                | Dosimetry       |
| CAM Environmental Services                                           | 200240-0          | Pasadena           | TX                | PLM             |
| Compaq Computer Corp. Emissions Control<br>Lab                       | 200058-0          | Houston            | TX                | EC&T            |
| Compaq Corporate Metrology                                           | 200154-0          | Houston            | TX                | Calibration     |
| Crisp Analytical Laboratory                                          | 200349-0          | Carrollton         | TX                | PLM             |

**INDEX C. LISTING BY STATE/COUNTRY - continued**

| <b>LABORATORY NAME</b>                                 | <b>NVLAP<br/>LAB CODE</b> | <b>CITY</b> | <b>STATE/<br/>COUNTRY</b> | <b>FIELD</b>    |
|--------------------------------------------------------|---------------------------|-------------|---------------------------|-----------------|
| Crisp Analytical Laboratory                            | 200349-0                  | Carrollton  | TX                        | TEM             |
| Dell Regulatory Test Laboratories                      | 200052-0                  | Round Rock  | TX                        | Acoustics       |
| Dell Regulatory Test Laboratories                      | 200052-0                  | Round Rock  | TX                        | EC&T            |
| DH Analytical Services                                 | 102086-0                  | Stafford    | TX                        | PLM             |
| EcoSystems Environmental, Inc.                         | 101162-0                  | Carrollton  | TX                        | PLM             |
| EMC Automation, a TDK Group Company                    | 200430-0                  | Cedar Park  | TX                        | EC&T            |
| EMSL Analytical, Inc.                                  | 102106-0                  | Houston     | TX                        | PLM             |
| EMSL Analytical, Inc.                                  | 102106-0                  | Houston     | TX                        | TEM             |
| EMSL Analytical, Inc.                                  | 200034-0                  | Dallas      | TX                        | PLM             |
| EMSL Analytical, Inc.                                  | 200034-0                  | Dallas      | TX                        | TEM             |
| Envirotest, Inc.                                       | 101595-0                  | Houston     | TX                        | PLM             |
| ERI Consulting Engineers, Inc.                         | 101232-0                  | Tyler       | TX                        | PLM             |
| HIH Laboratory, Inc.                                   | 101233-0                  | Webster     | TX                        | PLM             |
| IBM Austin EMC                                         | 200112-0                  | Austin      | TX                        | EC&T            |
| Jimmie Ann Bolton                                      | 101735-0                  | Austin      | TX                        | PLM             |
| KTL Dallas, Inc.                                       | 100426-0                  | Lewisville  | TX                        | EC&T            |
| Law Engineering and Environmental<br>Services, Inc.    | 101973-0                  | Dallas      | TX                        | PLM             |
| Loflin Environmental Services, Inc.                    | 102044-0                  | Houston     | TX                        | PLM             |
| McKee Environmental Health, Inc.                       | 101135-0                  | Friendswood | TX                        | PLM             |
| Metroplex Metrology Lab, Inc.                          | 200262-0                  | Fort Worth  | TX                        | Calibration     |
| Micro Air of Texas, Inc.                               | 102008-0                  | Houston     | TX                        | PLM             |
| National Technical Systems                             | 200245-0                  | Plano       | TX                        | EC&T            |
| Omni Environmental, Inc.                               | 102061-0                  | Austin      | TX                        | PLM             |
| PCI Industries Acoustical Testing<br>Laboratories      | 200453-0                  | Fort Worth  | TX                        | Acoustics       |
| Professional Testing (EMI), Inc.                       | 200062-0                  | Round Rock  | TX                        | EC&T            |
| Quest MicroAnalytics                                   | 200249-0                  | Dallas      | TX                        | PLM             |
| South Texas Project Dosimetry Laboratory               | 100519-0                  | Wadsworth   | TX                        | Dosimetry       |
| Steve Moody Micro Services, Inc.                       | 102056-0                  | Carrollton  | TX                        | PLM             |
| Steve Moody Micro Services, Inc.                       | 102056-0                  | Carrollton  | TX                        | TEM             |
| Sun City Analytical, Inc.                              | 101870-0                  | El Paso     | TX                        | PLM             |
| The Saul Corporation                                   | 200473-0                  | Houston     | TX                        | PLM             |
| Toshiba/Houston Test Laboratory                        | 200088-0                  | Houston     | TX                        | Electric Motors |
| TUViT, IT Security Laboratory                          | 200428-0                  | Austin      | TX                        | Common          |
| TXU Electric - Comanche Peak Steam<br>Electric Station | 100528-0                  | Glen Rose   | TX                        | Dosimetry       |
| US Air Force Center for Radiation Dosimetry            | 100548-0                  | Brooks AFB  | TX                        | Dosimetry       |
| Wayne Langston, Inc.                                   | 200021-0                  | League City | TX                        | EC&T            |

**UT**

|                                        |          |                 |    |             |
|----------------------------------------|----------|-----------------|----|-------------|
| Communication Certification Laboratory | 100272-0 | Salt Lake City  | UT | EC&T        |
| Dixon Information Inc.                 | 101012-0 | South Salt Lake | UT | PLM         |
| Hart Scientific Calibration Laboratory | 200348-0 | American Fork   | UT | Calibration |

**VA**

|                                                               |          |            |    |               |
|---------------------------------------------------------------|----------|------------|----|---------------|
| American Medical Laboratories, Inc.                           | 101136-0 | Chantilly  | VA | PLM           |
| Analytics Corporation                                         | 101004-0 | Richmond   | VA | PLM           |
| Applied Environmental, Inc.                                   | 101611-0 | Reston     | VA | PLM           |
| Atlan Laboratories                                            | 200492-0 | McLean     | VA | Cryptographic |
| Auditory Systems Laboratory, ISE<br>Department, Virginia Tech | 200479-0 | Blacksburg | VA | Acoustics     |
| Cygnacom Solutions, Inc. An Entrust                           | 200002-0 | McLean     | VA | Common        |



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| LABORATORY NAME                             | NVLAP<br>LAB CODE | CITY           | STATE/<br>COUNTRY | FIELD         |
|---------------------------------------------|-------------------|----------------|-------------------|---------------|
| Technologies Company                        |                   |                |                   |               |
| Cygnacom Solutions, Inc. An Entrust         | 200002-0          | McLean         | VA                | Cryptographic |
| Technologies Company                        |                   |                |                   |               |
| Environmental Hazards Services, L.L.C.      | 101882-0          | Richmond       | VA                | PLM           |
| Environmental Testing and Monitoring        | 200131-0          | Virginia Beach | VA                | PLM           |
| Services, Inc.                              |                   |                |                   |               |
| Genicom Corporation                         | 200342-0          | Waynesboro     | VA                | EC&T          |
| Holmes Environmental, Inc.                  | 200467-0          | Norfolk        | VA                | PLM           |
| Hubbell Lighting Photometric Laboratory     | 200020-0          | Christiansburg | VA                | Lighting      |
| Industrial Laboratory                       | 102115-0          | Portsmouth     | VA                | PLM           |
| Marine Chemist Service, Inc.                | 101425-0          | Newport News   | VA                | PLM           |
| Newport News Shipbuilding Radiological      | 100561-0          | Newport News   | VA                | Dosimetry     |
| Control Department                          |                   |                |                   |               |
| Proxtronic, Inc.                            | 100573-0          | Burke          | VA                | Dosimetry     |
| Rhein Tech Laboratories, Inc.               | 200061-0          | Herndon        | VA                | EC&T          |
| RJ Lee Group, Inc.                          | 101208-3          | Manassas       | VA                | PLM           |
| RJ Lee Group, Inc.                          | 101208-3          | Manassas       | VA                | TEM           |
| Schneider Laboratories, Inc.                | 101150-0          | Richmond       | VA                | PLM           |
| Scientific Laboratories, Inc.               | 101904-0          | Midlothian     | VA                | PLM           |
| Scientific Laboratories, Inc.               | 101904-0          | Midlothian     | VA                | TEM           |
| SEAS, Inc.                                  | 101185-0          | Blacksburg     | VA                | PLM           |
| State of Virginia Metrology Lab             | 105007-0          | Richmond       | VA                | Calibration   |
| <b>VT</b>                                   |                   |                |                   |               |
| Microcheck, Inc.                            | 200391-0          | Northfield     | VT                | PPT           |
| Vermont Fasteners Manufacturing             | 200254-0          | Swanton        | VT                | Fasteners     |
| <b>WA</b>                                   |                   |                |                   |               |
| APA - The Engineered Wood Association       | 100423-0          | Tacoma         | WA                | Wood Prod.    |
| Research Center                             |                   |                |                   |               |
| Battelle - Pacific Northwest National       | 200216-0          | Richland       | WA                | Dosimetry     |
| Laboratory                                  |                   |                |                   |               |
| BCAG Fastener Quality Test Lab Everett Site | 200292-0          | Seattle        | WA                | Fasteners     |
| Clayton Group Services                      | 101106-0          | Seattle        | WA                | PLM           |
| Fluke Corporation Primary Standards         | 105016-0          | Everett        | WA                | Calibration   |
| Laboratory                                  |                   |                |                   |               |
| Key Tronic Corp.                            | 200096-0          | Spokane        | WA                | EC&T          |
| Lab/Cor, Inc.                               | 101920-0          | Seattle        | WA                | TEM           |
| Mountain Laboratories                       | 101890-0          | Spokane        | WA                | PLM           |
| Naval Nuclear Propulsion Program            | 100565-0          | Bremerton      | WA                | Dosimetry     |
| Directorate, Washington, DC                 |                   |                |                   |               |
| Northern Industrial Hygiene, Inc.           | 200511-0          | Burien         | WA                | PLM           |
| Nowicki & Associates, Inc.                  | 200322-0          | Federal Way    | WA                | PLM           |
| NVL Laboratories, Inc.                      | 102063-0          | Seattle        | WA                | PLM           |
| Pacific Northwest National Laboratory /     | 105020-0          | Richland       | WA                | Calibration   |
| Battelle                                    |                   |                |                   |               |
| Pacific Rim Environmental, Inc.             | 101631-0          | Tukwila        | WA                | PLM           |
| Puget Sound Naval Shipyard                  | 101539-0          | Bremerton      | WA                | PLM           |
| Safe Environment of America, Inc.           | 102021-0          | Auburn         | WA                | PLM           |
| Strategic Weapons Fac. Pacific Cal. Lab.    | 200406-0          | Silverdale     | WA                | Calibration   |
| Oper. by Lockheed Martin                    |                   |                |                   |               |
| Underwriters Laboratories Inc.              | 200214-0          | Camas          | WA                | EC&T          |
| United States Dosimetry Technology, Inc.    | 100571-0          | Richland       | WA                | Dosimetry     |



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| LABORATORY NAME                                                  | NVLAP<br>LAB CODE | CITY                | STATE/<br>COUNTRY | FIELD           |
|------------------------------------------------------------------|-------------------|---------------------|-------------------|-----------------|
| <b>WI</b>                                                        |                   |                     |                   |                 |
| Aurora Consolidated Laboratories                                 | 101661-0          | West Allis          | WI                | PLM             |
| Bella Donna Labs Inc.                                            | 101868-0          | Wauwatosa           | WI                | PLM             |
| Hufcor Laboratory                                                | 100239-0          | Janesville          | WI                | Acoustics       |
| Intertek Testing Services NA Inc.                                | 200031-0          | Middleton           | WI                | Thermal Insl.   |
| Leeson Electric - Grafton Engineering Laboratory                 | 200483-0          | Grafton             | WI                | Electric Motors |
| Marathon Electric - Wausau Engineering Lab.                      | 200134-0          | Wausau              | WI                | Electric Motors |
| Micro Analytical, Inc.                                           | 101247-0          | Milwaukee           | WI                | PLM             |
| PFS Corporation                                                  | 100421-0          | Madison             | WI                | Wood Prod.      |
| Rice Lake Weighing Systems                                       | 105001-0          | Rice Lake           | WI                | Calibration     |
| Twin Ports Testing, Inc.                                         | 102083-0          | Superior            | WI                | PLM             |
| Wisconsin Occupational Health Laboratory                         | 101109-0          | Madison             | WI                | PLM             |
| <b>WV</b>                                                        |                   |                     |                   |                 |
| Environmental Services International, Inc.                       | 101306-0          | St. Albans          | WV                | PLM             |
| Philips Lighting Corporate Calibration & Standards Laboratory    | 100399-0          | Fairmont            | WV                | Lighting        |
| Triad Environmental Consulting, Inc.                             | 102073-0          | Huntington          | WV                | PLM             |
| <b>WY</b>                                                        |                   |                     |                   |                 |
| Resource Technology Corporation (RTC)                            | 200393-0          | Laramie             | WY                | PPT             |
| <b>BRAZIL</b>                                                    |                   |                     |                   |                 |
| Acos Villares SA - Chemical Laboratory                           | 200394-0          | Pindamonhangaba SP  | BRAZIL            | Fasteners       |
| <b>CANADA</b>                                                    |                   |                     |                   |                 |
| Chatfield Technical Consulting Limited                           | 101103-0          | Mississauga Ontario | CANADA            | PLM             |
| CSA International                                                | 100322-0          | Toronto Ontario     | CANADA            | Commercial      |
| CSA International                                                | 100322-0          | Toronto Ontario     | CANADA            | EC&T            |
| DOMUS ITSL                                                       | 200017-0          | Ottawa Ontario      | CANADA            | Cryptographic   |
| Electronics Test Centre                                          | 200282-0          | Kanata, Ont.        | CANADA            | EC&T            |
| Electronics Test Centre                                          | 200282-0          | Kanata, Ont.        | CANADA            | EC&T            |
| Ingersoll Fasteners                                              | 200208-0          | Ingersoll Ontario   | CANADA            | Fasteners       |
| Ivaco Rolling Mills, Chemistry Laboratory                        | 200143-0          | L'Orignal Ontario   | CANADA            | Fasteners       |
| KTL Ottawa Inc.                                                  | 100351-0          | Ottawa Ontario      | CANADA            | EC&T            |
| LEX Scientific Inc.                                              | 101949-0          | Guelph Ontario      | CANADA            | PLM             |
| MDS Nordion Dosimetry Laboratory                                 | 200370-0          | Kanata Ontario      | CANADA            | Calibration     |
| Nortel Networks BVW Lab                                          | 200098-0          | Belleville, Ontario | CANADA            | EC&T            |
| Pinchin Environmental Ltd.                                       | 101270-0          | Mississauga Ontario | CANADA            | PLM             |
| Small IAC Test Laboratory                                        | 200287-0          | Peterborough, ON    | CANADA            | Electric Motors |
| UltraTech Engineering Labs Inc.                                  | 200093-0          | Oakville, Ontario   | CANADA            | EC&T            |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0          | Concord Ontario     | CANADA            | Calibration     |
| Vibro-Acoustics Laboratory                                       | 100424-0          | Scarborough Ontario | CANADA            | Acoustics       |
| <b>CHINA</b>                                                     |                   |                     |                   |                 |
| Audix Technology (Shanghai) Co., Ltd.                            | 200371-0          | Shanghai            | CHINA             | EC&T            |
| AUDIX Technology (Shenzhen) Co., Ltd.                            | 200372-0          | Shenzhen, Guangdong | CHINA             | EC&T            |
| Shanghai Testing & Inspection Institute for Electrical Equipment | 200407-0          | Shanghai            | CHINA             | Electric Motors |

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| LABORATORY NAME                                                   | NVLAP<br>LAB CODE | CITY                     | STATE/<br>COUNTRY | FIELD       |
|-------------------------------------------------------------------|-------------------|--------------------------|-------------------|-------------|
| <b>INDIA</b>                                                      |                   |                          |                   |             |
| Sundram Fasteners Limited (Inhouse test laboratory)               | 200212-0          | Chennai (Madras), Taonil | INDIA             | Fasteners   |
| Sundram Fasteners Limited Chemical Testing Laboratory             | 200256-0          | Andhra Pradesh           | INDIA             | Fasteners   |
| <b>JAPAN</b>                                                      |                   |                          |                   |             |
| A-Pex International Co., Ltd. Yamakita Laboratory                 | 200441-0          | Ashigarakami-gun         | JAPAN             | EC&T        |
| A-Pex International Co., Ltd. Yokowa Laboratory                   | 200109-0          | Mie-ken                  | JAPAN             | EC&T        |
| Advantest Analysis Labroatory Ltd. EMC Center                     | 200477-0          | Gunma                    | JAPAN             | EC&T        |
| Akzo Kashima Ltd., Kawasaki Technical Center                      | 200300-0          | Kawasaki                 | JAPAN             | EC&T        |
| Akzo Nobel K.K., Kakegawa EMC Test Site                           | 100290-2          | Shizuoka                 | JAPAN             | EC&T        |
| Akzo Nobel K.K., Kashima EMC Site                                 | 100290-0          | Ibaraki                  | JAPAN             | EC&T        |
| Akzo Nobel K.K., Matsuda EMC Test Site                            | 100290-4          | Kanagawa                 | JAPAN             | EC&T        |
| Akzo Nobel K.K., Nagano EMC Test Site                             | 100290-3          | Nagano                   | JAPAN             | EC&T        |
| Akzo Nobel K.K., Tochigi EMC Test Site                            | 100290-5          | Tochigi                  | JAPAN             | EC&T        |
| Benesol Corp.                                                     | 200438-0          | Sagamihara-shi, Kanagawa | JAPAN             | EC&T        |
| Canon D5 RF Anechoic Chamber; FCC Part 15; CISPR 22/AS/NZS 3548   | 200478-0          | Ibaraki                  | JAPAN             | EC&T        |
| Chemitox EMC Research, Inc.                                       | 200120-0          | Yamanashi-ken            | JAPAN             | EC&T        |
| Cosmos Corporation                                                | 200151-0          | Watarai-gun Mie          | JAPAN             | EC&T        |
| Fuji Buhin Kogyo Kabushiki Kaisha                                 | 200203-0          | Ohta Gunma               | JAPAN             | Fasteners   |
| Fujitsu Evaluation Engineering Laboratory                         | 200281-0          | Numazu, Shizuoka-Pref.   | JAPAN             | EC&T        |
| Fujitsu General EMC Laboratory                                    | 200373-0          | Kawasaki                 | JAPAN             | EC&T        |
| Hitachi Information Technology Co., Ltd.                          | 200186-0          | Kanagawa                 | JAPAN             | EC&T        |
| IBM Yamato EMC Engineering                                        | 200198-0          | Yamato Kanagawa          | JAPAN             | EC&T        |
| IPS Corporation                                                   | 200012-0          | Nagano                   | JAPAN             | Calibration |
| IPS Corporation                                                   | 200012-0          | Nagano                   | JAPAN             | EC&T        |
| Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch | 200190-0          | Aichi                    | JAPAN             | EC&T        |
| Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch | 200192-0          | Yamanashi                | JAPAN             | EC&T        |
| Japan Quality Assurance Organization Kita-Kansai Testing Center   | 200191-0          | Osaka                    | JAPAN             | EC&T        |
| Japan Quality Assurance Organization Safety Testing Center        | 200189-0          | Tokyo                    | JAPAN             | EC&T        |
| Kansai Electronic Industry Development Center, Ikoma Testing Lab. | 200207-0          | Ikoma Nara               | JAPAN             | EC&T        |
| Kobelco Research Institute, Inc. Stock Company                    | 200169-0          | Kobe                     | JAPAN             | Fasteners   |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory                          | 200274-0          | Komatsu City, Ishikawa   | JAPAN             | Fasteners   |
| Kyushu Matsushita Electric Test Lab EMC Center                    | 200364-0          | Tosu-shi Saga-ken        | JAPAN             | EC&T        |
| Matsushita EMC Center                                             | 100428-0          | Sasayama, Hyogo          | JAPAN             | EC&T        |
| Minebea Co., Ltd. Fujisawa Manufacturing Unit                     | 200229-0          | Fujisawa, Kanagawa       | JAPAN             | Fasteners   |
| Minolta Co., Ltd. Toyokawa EMC Lab                                | 200434-0          | Toyokawa, Aichi          | JAPAN             | EC&T        |
| Murata Mfg. Co., Ltd. Yokohama Technical                          | 200263-0          | Kanagawa                 | JAPAN             | EC&T        |

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| LABORATORY NAME                                                  | NVLAP<br>LAB CODE | CITY                      | STATE/<br>COUNTRY | FIELD     |
|------------------------------------------------------------------|-------------------|---------------------------|-------------------|-----------|
| Center EMM Office                                                |                   |                           |                   |           |
| NEC Kofu, Ltd., EMC Center                                       | 200433-0          | Yamanashi                 | JAPAN             | EC&T      |
| NEC Niigata, Ltd, EMC Group                                      | 200490-0          | Niigata                   | JAPAN             | EC&T      |
| NEC Shizuoka, Ltd. EMC Center                                    | 200488-0          | Shizuoka-ken              | JAPAN             | EC&T      |
| O & K Company Limited, Osaka Test Center                         | 200166-0          | Osaka-Shi                 | JAPAN             | Fasteners |
| Ohtama Co., Ltd. Yamanashi EMC Test Site                         | 200175-0          | Yamanashi                 | JAPAN             | EC&T      |
| Okai Iron Works Co., Ltd.                                        | 200299-0          | Izumisano Osaka           | JAPAN             | Fasteners |
| Okawa Laboratory                                                 | 200296-0          | Naka-gun, Ibaraki-ken     | JAPAN             | Fasteners |
| Olympus EMC Laboratory                                           | 200472-0          | Tokyo                     | JAPAN             | EC&T      |
| ORIX Rentec EMC Center; Electromagnetic Compatibility            | 200404-0          | Aiko-Gun, Kanagawa        | JAPAN             | EC&T      |
| PFU TECHNOCONSUL EMC Center                                      | 200259-0          | Ishikawa-Ken              | JAPAN             | EC&T      |
| Piolax Inc.                                                      | 200411-0          | Mooka-shi Tochigi-ken     | JAPAN             | Fasteners |
| Ricoh Company LTD. Ohmori Acoustics Test Site                    | 200345-0          | Tokyo                     | JAPAN             | Acoustics |
| Ricoh Company, Ltd. Ohmori EMC Center                            | 200163-0          | Tokyo                     | JAPAN             | EC&T      |
| Seiko Epson Corporation                                          | 200157-0          | Shiojiri-City Nagano      | JAPAN             | EC&T      |
| Sharp Nara EMC Center, EMI Measurement for ITE                   | 200457-0          | Yamatokooriyama-shi Nara  | JAPAN             | EC&T      |
| Sony Bonson EMC Test Laboratory                                  | 200456-0          | Saitama-ken               | JAPAN             | EC&T      |
| Sony Ikegami EMC Site                                            | 200439-0          | Shinagawa, Tokyo          | JAPAN             | EC&T      |
| Sony Kisarazu EMC Test Laboratory                                | 200432-0          | Kisarazu Chiba            | JAPAN             | EC&T      |
| Sony Kohda EMC Test Laboratory                                   | 200398-0          | Nukata-gun Aichi          | JAPAN             | EC&T      |
| Sony Minokamo EMC Site                                           | 200368-0          | Gifu-Pref.                | JAPAN             | EC&T      |
| Sumitomo Metals (Kokura), Ltd. Quality System Section            | 200215-0          | Kitakyushu                | JAPAN             | Fasteners |
| Syonan Site Testing Laboratory as Conducted & Radiated Emissions | 200482-0          | Kanagawa                  | JAPAN             | EC&T      |
| TDK Corporation's 10m Anechoic Chamber                           | 200309-0          | Ichikawa-shi, Chiba-ken   | JAPAN             | EC&T      |
| TDK Corporation's Chikumagawa Open Site                          | 200319-0          | Saku-shi, Nagano-ken      | JAPAN             | EC&T      |
| TEAC Corporation EMC Center                                      | 200362-0          | Saitama-ken               | JAPAN             | EC&T      |
| Tokin EMC Engineering Co., Ltd. Kawasaki Facility                | 200217-0          | Kawasaki-city, Kanagawa   | JAPAN             | EC&T      |
| Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory        | 200219-0          | Daian-cho, Inabe-gun, Mie | JAPAN             | EC&T      |
| Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory         | 200218-0          | Sanda-city, Hyogo         | JAPAN             | EC&T      |
| Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory       | 200221-0          | Tsukuba-city, Ibaraki     | JAPAN             | EC&T      |
| Toshiba Corp., Ome Operations                                    | 200107-0          | Ome Tokyo                 | JAPAN             | EC&T      |
| Yamaha EMC Center                                                | 200455-0          | Tenryu-shi, Shizuoka-ken  | JAPAN             | EC&T      |
| Zacta Technology Corporation Yonezawa Testing Center             | 200306-0          | Yonezawa-shi Yamagata     | JAPAN             | EC&T      |
| <b>KOREA</b>                                                     |                   |                           |                   |           |
| Korea Testing & Research Inst. for Chemical Industry-Inchon Off. | 200177-0          | Inchon                    | KOREA             | Fasteners |
| LG Electronics, Inc., Quality and Reliability Center             | 200040-0          | Seoul                     | KOREA             | EC&T      |
| Samsung Electronics EMC Laboratory                               | 200447-0          | Suwon, Kyungki Do         | KOREA             | EC&T      |
| SK Tech Co., LTD.                                                | 200220-0          | Namyangju-si, Kyunggi-Do  | KOREA             | EC&T      |

# INDEX C. LISTING BY STATE/COUNTRY - continued

| LABORATORY NAME                                             | NVLAP<br>LAB CODE | CITY                 | STATE/<br>COUNTRY | FIELD           |
|-------------------------------------------------------------|-------------------|----------------------|-------------------|-----------------|
| <b>MALAYSIA</b>                                             |                   |                      |                   |                 |
| Teco Industry (Malaysia) SDN. BHD.                          | 200476-0          | Penang               | MALAYSIA          | Electric Motors |
| <b>MEXICO</b>                                               |                   |                      |                   |                 |
| Prottsa, S.A. de C.V.                                       | 200261-0          | Mexico City          | MEXICO            | Fasteners       |
| USEM de Mexico, S.A. de C.V.                                | 200506-0          | Apodaca NL           | MEXICO            | Electric Motors |
| <b>TAIWAN</b>                                               |                   |                      |                   |                 |
| Advance Data Technology Corporation                         | 200102-0          | Taipei Hsien         | TAIWAN            | EC&T            |
| Advance Data Technology Corporation Hsin Chu EMC Laboratory | 200376-0          | Hsin Chu Hsien       | TAIWAN            | EC&T            |
| Best Laboratory                                             | 200484-0          | Taipei Hsein         | TAIWAN            | EC&T            |
| Electronic Research & Service Organization/ITRI             | 200118-0          | Chutung Hsinchu      | TAIWAN            | EC&T            |
| Electronics Testing Center, Taiwan                          | 200133-0          | Taoyuan Hsien        | TAIWAN            | EC&T            |
| Fong Prean Industrial Co., Ltd.                             | 200288-0          | Kaohsiung Hsien      | TAIWAN            | Fasteners       |
| Global EMC Standard Tech. Corp.                             | 200085-0          | Taipei County        | TAIWAN            | EC&T            |
| HomeTek Technology Inc.                                     | 200331-0          | Taipei Shien         | TAIWAN            | EC&T            |
| International Standards Laboratory                          | 200234-0          | Hsichih Chen, Taipei | TAIWAN            | EC&T            |
| Interocean EMC Technology Corp.                             | 200458-0          | Taipei County        | TAIWAN            | EC&T            |
| Inventec Corp. (Taoyuan) EMC Labs                           | 200140-0          | Taoyuan              | TAIWAN            | EC&T            |
| Neutron Engineering Inc.                                    | 200145-0          | Taipei               | TAIWAN            | EC&T            |
| PEP Testing Laboratory                                      | 200097-0          | Taipei Hsien         | TAIWAN            | EC&T            |
| Philips Electronics Industries (TAIWAN) Ltd.                | 200137-0          | Chungli, Taoyuan     | TAIWAN            | EC&T            |
| Quietek Corporation                                         | 200347-0          | Hsin-Chu Country     | TAIWAN            | EC&T            |
| Radiation Laboratory, Taiwan Power Company                  | 100562-0          | Shihmen, Taipei      | TAIWAN            | Dosimetry       |
| San Shing Hardware Works Co., Ltd. Test Laboratory          | 200158-0          | Tainan               | TAIWAN            | Fasteners       |
| Spectrum Research & Testing Laboratory, Inc.                | 200099-0          | Chung-Li, Taoyuan    | TAIWAN            | EC&T            |
| Sporton International, Inc.                                 | 200079-0          | Taipei Hsien         | TAIWAN            | EC&T            |
| Taiwan Tokin EMC Eng. Corp.                                 | 200077-0          | Taipei               | TAIWAN            | EC&T            |
| TECO Electric & Machinery Co., Ltd.                         | 200378-0          | Taoyuan              | TAIWAN            | Electric Motors |
| Training Research Co., Ltd.                                 | 200174-0          | Taipei Hsien         | TAIWAN            | EC&T            |
| <b>UNITED KINGDOM</b>                                       |                   |                      |                   |                 |
| BAE Environmental and EMC Test Centre                       | 200304-0          | Kent                 | U. K.             | EC&T            |
| Optiglass Ltd.                                              | 200466-0          | Hainault Essex       | U. K.             | NTRMs           |
| Thermo Spectronic                                           | 200462-0          | Cambridge            | U. K.             | NTRMs           |

## INDEX

# D

LISTING OF  
TESTING  
LABORATORIES  
BY NVLAP  
LAB CODE





**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE****NVLAP LAB CODE 100101-0****Levecque Technical Center**

1400 Union Meeting Road  
P.O. Box 1100  
Blue Bell, PA 19422-0761  
Contact: Mr. Peter Herault  
Phone: 610-341-6376  
Fax: 610-341-6291  
E-Mail: pete.c.herault@CT.SGCNA.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Canadian Standards (Specifications)**

|         |                                                                                                                                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| 01/W03  | CAN/CGSB-51.10-92                                                                                                                      |
| 01/W04  | CAN/CGSB-51.11-92                                                                                                                      |
| 01/WNOT | Note: Scope excludes CGSB 51-GP-52M; however, ASTM E96 & ASTM D828 are included where specified in the Canadian Standards (01/W02-W04) |

**Corrosiveness**

|        |                    |
|--------|--------------------|
| 01/C02 | 16 CFR-Part 1209.5 |
|--------|--------------------|

**Flammability**

|        |                    |
|--------|--------------------|
| 01/F01 | TAPPI T461-OM      |
| 01/F05 | ASTM E136          |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |

**Mass, Density, and Dimensional Stability**

|        |                                    |
|--------|------------------------------------|
| 01/D01 | ASTM C136                          |
| 01/D02 | ASTM C167                          |
| 01/D09 | ASTM C303                          |
| 01/D11 | ASTM C356                          |
| 01/D12 | ASTM C411                          |
| 01/D24 | ASTM C739 (Sec. 12)                |
| 01/D26 | 16 CFR-Part 1209.4                 |
| 01/D27 | ASTM C739 (Sec. 8)                 |
| 01/D31 | MIL-I-22344D (Para. 4.6.3, 4.6.4.) |

**Related Material Properties**

|        |                   |
|--------|-------------------|
| 01/V04 | ASTM E96          |
| 01/V07 | ASTM C1104/C1104M |

**Strength**

|         |                     |
|---------|---------------------|
| 01/S01b | ASTM C165 (Proc. B) |
| 01/S10  | ASTM D828           |
| 01/S15  | ASTM C421           |
| 01/S16  | ASTM C1101/C1101M   |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T01 | ASTM C177 |
| 01/T04 | ASTM C236 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |
| 01/T09 | ASTM C653 |
| 01/T10 | ASTM C687 |

**NVLAP LAB CODE 100103-0****Dow Chemical N. America Foam Products Research, Prod. Perf. Lab.**

1605 Joseph Drive  
Midland, MI 48674  
Contact: Ms. Linda Hess  
Phone: 517-636-5069  
Fax: 517-636-0194  
E-Mail: linda.hess@dow.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Mass, Density, and Dimensional Stability**

|        |            |
|--------|------------|
| 01/D07 | ASTM C272  |
| 01/D18 | ASTM D1622 |
| 01/D19 | ASTM D2126 |
| 01/D23 | ASTM D2842 |

**Related Material Properties**

|        |          |
|--------|----------|
| 01/V04 | ASTM E96 |
|--------|----------|

**Strength**

|        |                                            |
|--------|--------------------------------------------|
| 01/S02 | ASTM C203                                  |
| 01/S07 | ASTM C273                                  |
| 01/S11 | ASTM D1621 (Proc. A of ASTM Practice D618) |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T06 | ASTM C518 |
|--------|-----------|

**NVLAP LAB CODE 100104-0****NAHB Research Center, Inc.**

400 Prince George's Boulevard  
Upper Marlboro, MD 20774-8731  
Contact: Mr. Thomas M. Kenney, P.E.  
Phone: 301-430-6246  
Fax: 301-430-6184  
E-Mail: tkenney@nahbrc.org  
URL: <http://www.nahbrc.org>

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Mass, Density, and Dimensional Stability**

|        |                    |
|--------|--------------------|
| 01/D02 | ASTM C167          |
| 01/D13 | ASTM C519          |
| 01/D27 | ASTM C739 (Sec. 8) |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T06 | ASTM C518 |
| 01/T09 | ASTM C653 |
| 01/T10 | ASTM C687 |

**Commercial Products Testing**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Paints and Related Coatings and Materials**

|        |            |
|--------|------------|
| 09/A20 | ASTM D2244 |
|--------|------------|

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## Plastics

|        |            |
|--------|------------|
| 15/A01 | ASTM D256  |
| 15/A06 | ASTM D638  |
| 15/A10 | ASTM D790  |
| 15/A18 | ASTM D2565 |
| 15/A19 | ASTM D2583 |
| 15/A31 | ASTM D570  |
| 15/A32 | ASTM D792  |

## Plumbing

|         |                                                     |
|---------|-----------------------------------------------------|
| 19/M01  | ICC/ANSI A117.1 (Sec. 609, 610)                     |
| 19/M02  | ASME/ANSI A112.19.7M (Sec. 5, 7)                    |
| 19/M03  | ASME/ANSI A112.19.8M (Sec. 4, 5)                    |
| 19/M04  | ASTM F446                                           |
| 19/M05  | ASTM F462                                           |
| 19/P01  | ANSI Z124.1 (Sec. 4, 5, 6)                          |
| 19/P02  | ANSI Z124.2 (Sec. 4, 5, 6)                          |
| 19/P03  | ANSI Z124.3 (Sec. 4, 5, 6)                          |
| 19/P03a | ICPA-SS-1 (Sec. 4, 5, 6)                            |
| 19/P04  | ANSI Z124.4 (Sec. 4, 5)                             |
| 19/P05  | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1) |
| 19/P06  | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6)                    |
| 19/P07  | ANSI/IAPMO Z124.8 (Sec. 4, 5)                       |
| 19/V01  | ASME A112.19.2M (Sec. 8.1)                          |
| 19/V02  | ASME A112.19.2M (Sec. 8.2)                          |
| 19/V03  | ASME A112.19.2M (Sec. 8.3)                          |
| 19/V04  | ASME A112.19.2M (Sec. 8.7)                          |
| 19/V06  | ASME A112.19.2M (Sec. 8.5)                          |
| 19/W01  | ASME A112.19.6 (Sec. 7.1.2)                         |
| 19/W02  | ASME A112.19.6 (Sec. 7.1.3)                         |
| 19/W03  | ASME A112.19.6 (Sec. 7.1.4)                         |
| 19/W04  | ASME A112.19.6 (Sec. 7.1.5)                         |
| 19/W05  | ASME A112.19.6 (Sec. 7.1.6)                         |
| 19/W06  | ASME A112.19.6 (Sec. 7.1.7)                         |
| 19/W07  | ASME A112.19.6 (Sec. 7.1.8)                         |
| 19/W08  | ASME A112.19.6 (Sec. 7.1.9)                         |

## NVLAP LAB CODE 100108-0

### TSi, Testing Services, Inc.

817 Showalter Avenue  
P.O. Box 2041  
Dalton, GA 30721  
Contact: Mr. Erle W. Miles, Jr.  
Phone: 706-226-1400  
Fax: 706-226-6118  
E-Mail: emiles@alltel.net  
URL: <http://www.testing1-2-3.com>

### Carpet and Carpet Cushion

Accreditation Valid Through: December 31, 2001

#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Tests Applicable to Carpet Cushion

|         |                                |
|---------|--------------------------------|
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12)       |
| 03/U02  | ASTM D297                      |
| 03/U03  | ASTM D629 (Sec. 10)            |
| 03/U04  | ASTM D629 (Secs. 13-22)        |
| 03/U05  | ASTM D629 (Secs. 23-27)        |
| 03/U06  | ASTM D1667 (Suffix B)          |
| 03/U07  | ASTM D3574 (Test C)            |
| 03/U08  | ASTM D3574 (Test D)            |

|        |                      |
|--------|----------------------|
| 03/U09 | ASTM D3574 (Test E)  |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec. 14) |
| 03/U12 | ASTM D3676 (Sec. 15) |
| 03/U13 | ASTM D3676 (Sec. 16) |

#### Tests Applicable to Carpet and Carpet Cushion

|         |                            |
|---------|----------------------------|
| 03/T01  | AATCC 16 (Option E)        |
| 03/T02  | ASTM D2646 (Secs. 16-24)   |
| 03/T02a | ASTM D2646 (Sec. 16)       |
| 03/T04  | 16 CFR Part 1630 (FF-1-70) |

#### Tests Applicable to Carpets

|         |                         |
|---------|-------------------------|
| 03/G01  | AATCC 20                |
| 03/G02  | AATCC 20A               |
| 03/G03  | AATCC 134               |
| 03/G04  | AATCC 165               |
| 03/G05  | ASTM D418 (Sec. 8)      |
| 03/G05a | ASTM D5848 (Sec. 8)     |
| 03/G06  | ASTM D418 (Sec. 9)      |
| 03/G06a | ASTM D5848 (Sec. 9)     |
| 03/G07  | ASTM D418 (Secs. 10-11) |
| 03/G08  | ASTM D418 (Sec. 13)     |
| 03/G08a | ASTM D5823              |
| 03/G09  | ASTM D1335              |
| 03/G10  | ASTM D3936              |
| 03/G11  | ASTM D5252              |
| 03/G12  | ASTM E648               |
| 03/G13  | ASTM E662               |
| 03/G14  | Fed Spec, DDD-C-0095A   |
| 03/G15  | ASTM D6119              |
| 03/G16  | CRI TM-101              |

## NVLAP LAB CODE 100109-0

### Integrex Testing Systems - Product Testing Laboratory

2790 Columbus Road, Route 16  
Granville, OH 43023-1200  
Contact: Mr. J. Michael Stair  
Phone: 740-321-7053  
Fax: 740-321-4080  
E-Mail: [mike.stair@owenscorning.com](mailto:mike.stair@owenscorning.com)

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Flammability

|        |                    |
|--------|--------------------|
| 01/F02 | ASTM E84           |
| 01/F05 | ASTM E136          |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |

#### Mass, Density, and Dimensional Stability

|        |                     |
|--------|---------------------|
| 01/D02 | ASTM C167           |
| 01/D08 | ASTM C302           |
| 01/D09 | ASTM C303           |
| 01/D11 | ASTM C356           |
| 01/D12 | ASTM C411           |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D27 | ASTM C739 (Sec. 8)  |

#### Related Material Properties

|        |          |
|--------|----------|
| 01/V04 | ASTM E96 |
|--------|----------|

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

01/V07 ASTM C1104/C1104M

**Strength**

01/S01a ASTM C165 (Proc. A)

01/S02 ASTM C203

01/S08 ASTM C446

**Thermal Resistance**

01/T01 ASTM C177

01/T05 ASTM C335

01/T06 ASTM C518

01/T09 ASTM C653

01/T10 ASTM C687

01/T11 ASTM C976

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

08/P03 ASTM C423

08/P04 ASTM C522

08/P06 ASTM E90

08/P10 ANSI S12.31

08/P11 ISO 3744

08/P21 ISO 3745

08/P35 ASTM E1050

08/P46 ISO 3741

**NVLAP LAB CODE 100113-0****Holometrix - Micromet**

25 Wiggins Avenue

Bedford, MA 01730-2323

Contact: Mr. Timothy Kunz

Phone: 781-275-3300 x245

Fax: 781-275-3705

E-Mail: tkunz@holometrix.com

URL: <http://www.holometrix.com>**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Thermal Resistance**

01/T01 ASTM C177

01/T05 ASTM C335

01/T06 ASTM C518

**NVLAP LAB CODE 100120-0****Commercial Testing Company**

1215 South Hamilton Street

P.O. Box 985

Dalton, GA 30722-0985

Contact: Mr. Jonathan Jackson

Phone: 706-278-3935

Fax: 706-278-3936

E-Mail: jjackson@commercialtesting.com

URL: <http://www.commercialtesting.com>**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Tests Applicable to Carpet Cushion**

03/U01a ASTM D3574 (Sec. 8.2 &amp; Test A)

03/U01b ASTM D3676 (Secs. 10-12)

03/U02 ASTM D297

03/U06 ASTM D1667 (Suffix B)

03/U07 ASTM D3574 (Test C)

03/U08 ASTM D3574 (Test D)

03/U09 ASTM D3574 (Test E)

03/U10 ASTM D3676 (Sec. 13)

03/U11 ASTM D3676 (Sec. 14)

03/U12 ASTM D3676 (Sec. 15)

03/U13 ASTM D3676 (Sec. 16)

**Tests Applicable to Carpet and Carpet Cushion**

03/T01 AATCC 16 (Option E)

03/T02 ASTM D2646 (Secs. 16-24)

03/T02a ASTM D2646 (Sec. 16)

03/T03 ASTM E84

03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G01 AATCC 20

03/G02 AATCC 20A

03/G03 AATCC 134

03/G04 AATCC 165

03/G05 ASTM D418 (Sec. 8)

03/G05a ASTM D5848 (Sec. 8)

03/G06 ASTM D418 (Sec. 9)

03/G06a ASTM D5848 (Sec. 9)

03/G07 ASTM D418 (Secs. 10-11)

03/G08 ASTM D418 (Sec. 13)

03/G08a ASTM D5823

03/G09 ASTM D1335

03/G10 ASTM D3936

03/G12 ASTM E648

03/G13 ASTM E662

**NVLAP LAB CODE 100139-0****American Carpet Laboratories, Inc.**

7517 Nashville Street

P.O. Box 357

Ringgold, GA 30736

Contact: Mr. Michael D. Connell

Phone: 706-935-5672

Fax: 706-891-5713

**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Tests Applicable to Carpet Cushion**

03/U01b ASTM D3676 (Secs. 10-12)

03/U02 ASTM D297

03/U08 ASTM D3574 (Test D)

03/U10 ASTM D3676 (Sec. 13)

03/U11 ASTM D3676 (Sec. 14)

03/U12 ASTM D3676 (Sec. 15)

03/U13 ASTM D3676 (Sec. 16)

**Tests Applicable to Carpet and Carpet Cushion**

03/T01 AATCC 16 (Option E)

03/T02 ASTM D2646 (Secs. 16-24)



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

03/T02a ASTM D2646 (Sec. 16)  
03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G01 AATCC 20  
03/G02 AATCC 20A  
03/G04 AATCC 165  
03/G05 ASTM D418 (Sec. 8)  
03/G05a ASTM D5848 (Sec. 8)  
03/G06 ASTM D418 (Sec. 9)  
03/G06a ASTM D5848 (Sec. 9)  
03/G07 ASTM D418 (Secs. 10-11)  
03/G08 ASTM D418 (Sec. 13)  
03/G08a ASTM D5823  
03/G09 ASTM D1335  
03/G10 ASTM D3936  
03/G12 ASTM E648  
03/G13 ASTM E662  
03/G14 Fed Spec, DDD-C-0095A

**NVLAP LAB CODE 100142-0****Geoscience Ltd.**

6260-B Marindustry Drive  
San Diego, CA 92121  
Contact: Dr. H. F. Poppendiek  
Phone: 858-453-5483  
Fax: 858-453-4694

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Flammability**

01/F05 ASTM E136

**Thermal Resistance**

01/T01 ASTM C177  
01/T04 ASTM C236

**NVLAP LAB CODE 100146-0****American Testing Laboratories, Inc.**

784 Flory Mill Road  
P.O. Box 4014  
Lancaster, PA 17604-4014  
Contact: Mr. John S. Kassees  
Phone: 717-569-0488  
Fax: 717-569-3429

**Construction Materials Testing**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**Aggregates**

02/A03 ASTM C29  
02/A04 ASTM C40  
02/A06 ASTM C88  
02/A07 ASTM C117  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A11 ASTM C131

02/A12 ASTM C136  
02/A44 ASTM C566  
02/A46 ASTM C535

**Cement**

02/A17 ASTM C109  
02/A51 ASTM C780 (Annex A7)  
02/A52 ASTM C1019

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A41 ASTM C192  
02/A43 ASTM C1064  
02/A45 ASTM C42  
02/G01 ASTM C31/C172/C143/C138/C231  
02/G02 ASTM C173

**Soil and Rock**

02/L02 ASTM D422  
02/L04 ASTM D698  
02/L05 ASTM D854  
02/L06 ASTM D1140  
02/L08 ASTM D1557  
02/L11 ASTM D2166  
02/L13 ASTM D2216  
02/L16 ASTM D2487  
02/L17 ASTM D2488  
02/L20 ASTM D4318  
02/L23 ASTM D2922  
02/L25 ASTM D3017

**NVLAP LAB CODE 100156-0****Mohawk Industries, Inc.- Lysterly Plant**

5081 Hwy. 114  
Lysterly, GA 30730  
Contact: Mr. Richard Turner  
Phone: 706-895-3341 x6250  
Fax: 706-895-2346  
E-Mail: richard\_turner@mohawkind.com

**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Tests Applicable to Carpet Cushion**

03/U01b ASTM D3676 (Secs. 10-12)  
03/U06 ASTM D1667 (Suffix B)

**Tests Applicable to Carpet and Carpet Cushion**

03/T01 AATCC 16 (Option E)  
03/T02 ASTM D2646 (Secs. 16-24)  
03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G03 AATCC 134  
03/G04 AATCC 165  
03/G05 ASTM D418 (Sec. 8)  
03/G05a ASTM D5848 (Sec. 8)  
03/G06 ASTM D418 (Sec. 9)  
03/G06a ASTM D5848 (Sec. 9)  
03/G07 ASTM D418 (Secs. 10-11)  
03/G08 ASTM D418 (Sec. 13)  
03/G08a ASTM D5823  
03/G09 ASTM D1335



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|        |                       |
|--------|-----------------------|
| 03/G10 | ASTM D3936            |
| 03/G11 | ASTM D5252            |
| 03/G12 | ASTM E648             |
| 03/G13 | ASTM E662             |
| 03/G14 | Fed Spec, DDD-C-0095A |
| 03/G15 | ASTM D6119            |
| 03/G16 | CRI TM-101            |

**NVLAP LAB CODE 100166-0****Independent Textile Testing Service, Inc.**

1503 Murray Avenue, P.O. Box 1948  
Dalton, GA 30722-1948  
Contact: Mr. L. Kent Suddeth  
Phone: 706-278-3013  
Fax: 706-272-7057  
E-Mail: ittsslab@dalton.net  
URL: ittsslab.com

**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
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**Tests Applicable to Carpet Cushion**

|         |                                |
|---------|--------------------------------|
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12)       |
| 03/U02  | ASTM D297                      |
| 03/U03  | ASTM D629 (Sec. 10)            |
| 03/U04  | ASTM D629 (Secs. 13-22)        |
| 03/U05  | ASTM D629 (Secs. 23-27)        |
| 03/U06  | ASTM D1667 (Suffix B)          |
| 03/U07  | ASTM D3574 (Test C)            |
| 03/U08  | ASTM D3574 (Test D)            |
| 03/U09  | ASTM D3574 (Test E)            |
| 03/U10  | ASTM D3676 (Sec. 13)           |
| 03/U11  | ASTM D3676 (Sec.14)            |
| 03/U12  | ASTM D3676 (Sec.15)            |
| 03/U13  | ASTM D3676 (Sec.16)            |

**Tests Applicable to Carpet and Carpet Cushion**

|         |                            |
|---------|----------------------------|
| 03/T01  | AATCC 16 (Option E)        |
| 03/T02  | ASTM D2646 (Secs. 16-24)   |
| 03/T02a | ASTM D2646 (Sec. 16)       |
| 03/T04  | 16 CFR Part 1630 (FF-1-70) |

**Tests Applicable to Carpets**

|         |                         |
|---------|-------------------------|
| 03/G01  | AATCC 20                |
| 03/G02  | AATCC 20A               |
| 03/G03  | AATCC 134               |
| 03/G04  | AATCC 165               |
| 03/G05  | ASTM D418 (Sec. 8)      |
| 03/G05a | ASTM D5848 (Sec. 8)     |
| 03/G06  | ASTM D418 (Sec. 9)      |
| 03/G06a | ASTM D5848 (Sec. 9)     |
| 03/G07  | ASTM D418 (Secs. 10-11) |
| 03/G08  | ASTM D418 (Sec. 13)     |
| 03/G08a | ASTM D5823              |
| 03/G09  | ASTM D1335              |
| 03/G10  | ASTM D3936              |
| 03/G11  | ASTM D5252              |
| 03/G12  | ASTM E648               |
| 03/G13  | ASTM E662               |
| 03/G14  | Fed Spec, DDD-C-0095A   |
| 03/G15  | ASTM D6119              |
| 03/G16  | CRI TM-101              |

**NVLAP LAB CODE 100190-0****Beaulieu of America - Carpet Testing Lab**

1502 Coronet Drive  
P.O. Box 1248  
Dalton, GA 30722-1248  
Contact: Mr. E. Ronald Vinyard  
Phone: 706-259-4511 x7367  
Fax: 706-259-2211 x7893

**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
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|------|-------------|

**Tests Applicable to Carpet and Carpet Cushion**

|         |                            |
|---------|----------------------------|
| 03/T01  | AATCC 16 (Option E)        |
| 03/T02  | ASTM D2646 (Secs. 16-24)   |
| 03/T02a | ASTM D2646 (Sec. 16)       |
| 03/T04  | 16 CFR Part 1630 (FF-1-70) |

**Tests Applicable to Carpets**

|         |                         |
|---------|-------------------------|
| 03/G04  | AATCC 165               |
| 03/G05  | ASTM D418 (Sec. 8)      |
| 03/G05a | ASTM D5848 (Sec. 8)     |
| 03/G06  | ASTM D418 (Sec. 9)      |
| 03/G06a | ASTM D5848 (Sec. 9)     |
| 03/G07  | ASTM D418 (Secs. 10-11) |
| 03/G08  | ASTM D418 (Sec. 13)     |
| 03/G08a | ASTM D5823              |
| 03/G09  | ASTM D1335              |
| 03/G10  | ASTM D3936              |

**NVLAP LAB CODE 100191-0****STS Consultants, Ltd.**

750 Corporate Woods Parkway  
Vernon Hills, IL 60061  
Contact: Mr. William P. Quinn  
Phone: 847-279-2500  
Fax: 847-279-2550  
E-Mail: quinn@stsltd.com  
URL: <http://STSLTD.com>

**Construction Materials Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Aggregates**

|        |           |
|--------|-----------|
| 02/A03 | ASTM C29  |
| 02/A04 | ASTM C40  |
| 02/A06 | ASTM C88  |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75  |
| 02/A44 | ASTM C566 |
| 02/A46 | ASTM C535 |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Cement**

02/A17 ASTM C109  
02/A20 ASTM C151  
02/A51 ASTM C780 (Annex A7)  
02/A52 ASTM C1019

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A40 ASTM C78  
02/A41 ASTM C192  
02/A43 ASTM C1064  
02/A45 ASTM C42  
02/G01 ASTM C31/C172/C143/C138/C231  
02/G02 ASTM C173

**Geotextiles**

02/L28 ASTM D4354  
02/L33 ASTM D4632  
02/L34 ASTM D3884  
02/L35 ASTM D4886  
02/L36 ASTM D4533  
02/L37 ASTM D4884  
02/L38 ASTM D792  
02/L39 ASTM D4491  
02/L41 ASTM D4751  
02/L42 ASTM D1777  
02/L43 ASTM D4437  
02/L44 ASTM D638  
02/L45 ASTM D4595  
02/L48 ASTM D5321  
02/L49 ASTM D6243

**Road and Paving Materials**

02/M03 ASTM D140  
02/M09 ASTM D1074  
02/M11 ASTM D1188  
02/M12 ASTM D1559  
02/M19 ASTM D2172  
02/M24 ASTM D2041  
02/M25 ASTM D2726

**Soil and Rock**

02/L01 ASTM D4220  
02/L02 ASTM D422  
02/L03 ASTM D427  
02/L04 ASTM D698  
02/L05 ASTM D854  
02/L06 ASTM D1140  
02/L08 ASTM D1557  
02/L10 ASTM D1883  
02/L11 ASTM D2166  
02/L13 ASTM D2216  
02/L15 ASTM D2435  
02/L16 ASTM D2487  
02/L17 ASTM D2488  
02/L18 ASTM D3080  
02/L20 ASTM D4318  
02/L21 ASTM D2434  
02/L22 ASTM D2850  
02/L23 ASTM D2922  
02/L24 ASTM D2974  
02/L25 ASTM D3017  
02/L26 ASTM D4221  
02/L29 Corps of Engineers - Manual

EM-1110-2-1906, Appendix VII, Permeability  
of Fine Grained Soils Using a Triaxial  
Apparatus

02/L30 Corps of Engineers - Manual  
EM-1110-2-1906, Appendix X, Consolidated  
Undrained and Consolidated Drained Triaxial  
Test

02/L46 ASTM D5084  
02/L50 ASTM D2664  
02/L51 ASTM D2938  
02/L52 ASTM D3148  
02/L53 ASTM D3967  
02/L54 ASTM D4543  
02/L55 ASTM D5407  
02/L56 ASTM D5607

**Standard Practices**

02/A38 ASTM E329  
02/A39 ASTM C1077  
02/L32 ASTM D3740  
02/M26 ASTM D3666

**NVLAP LAB CODE 100193-0****Shaw Industries, Inc., Central Laboratory  
Operations**

South Glenwood Avenue  
P.O. Box 2128  
Dalton, GA 30722-2128  
Contact: Mr. Jerry T. Wright, Jr.  
Phone: 706-275-2205  
Fax: 706-275-2221  
E-Mail: jay.wright@shawinc.com

**Carpet and Carpet Cushion**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Tests Applicable to Carpet and Carpet Cushion**

03/T01 AATCC 16 (Option E)  
03/T02 ASTM D2646 (Secs. 16-24)  
03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G04 AATCC 165  
03/G06 ASTM D418 (Sec. 9)  
03/G07 ASTM D418 (Secs. 10-11)  
03/G08 ASTM D418 (Sec. 13)  
03/G09 ASTM D1335  
03/G10 ASTM D3936  
03/G12 ASTM E648  
03/G13 ASTM E662  
03/G15 ASTM D6119  
03/G16 CRI TM-101

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 100210-0****The Dow Chemical Company- NA System  
House-Joliet**

2050 North Broadway  
Joliet, IL 60435-3187  
Contact: Mr. Robert Braun  
Phone: 815-774-6500 x1560  
Fax: 815-774-6542  
E-Mail: bgbraun@dow.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Mass, Density, and Dimensional Stability**

|        |                     |
|--------|---------------------|
| 01/D15 | ASTM D756 (Proc. A) |
| 01/D16 | ASTM D756 (Proc. B) |
| 01/D17 | ASTM D756 (Proc. E) |
| 01/D18 | ASTM D1622          |
| 01/D19 | ASTM D2126          |
| 01/D23 | ASTM D2842          |

**Related Material Properties**

|        |          |
|--------|----------|
| 01/V04 | ASTM E96 |
|--------|----------|

**Strength**

|        |                                            |
|--------|--------------------------------------------|
| 01/S02 | ASTM C203                                  |
| 01/S07 | ASTM C273                                  |
| 01/S11 | ASTM D1621 (Proc. A of ASTM Practice D618) |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T06 | ASTM C518 |
|--------|-----------|

**NVLAP LAB CODE 100227-0****Riverbank Acoustical Laboratories**

1512 S. Batavia Avenue  
Geneva, IL 60134-3302  
Contact: Mr. James E. Stangel  
Phone: 630-232-0104  
Fax: 630-232-0138  
E-Mail: jstangel@iitri.org  
URL: <http://riverbank.iitri.org>

**Acoustical Testing Services**

Accreditation Valid Through: March 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |                 |
|--------|-----------------|
| 08/P03 | ASTM C423       |
| 08/P05 | ASTM C523       |
| 08/P06 | ASTM E90        |
| 08/P07 | ASTM E492       |
| 08/P10 | ANSI S12.31     |
| 08/P30 | ASTM E1408      |
| 08/P39 | ANSI S12.5      |
| 08/P44 | ISO 354         |
| 08/P45 | ISO 140, Part 3 |
| 08/P46 | ISO 3741        |
| 08/P51 | ISO 6926        |

**NVLAP LAB CODE 100228-0****Armstrong Acoustic Labs, Armstrong World Ind.,  
Inc. Innov. Center**

P.O. Box 3511  
2500 Columbia Avenue  
Lancaster, PA 17604  
Contact: Mr. Robert Alan Hallman  
Phone: 717-396-6225  
Fax: 717-396-5865  
E-Mail: Robert\_A\_Hallman@armstrong.com

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |                 |
|--------|-----------------|
| 08/P03 | ASTM C423       |
| 08/P07 | ASTM E492       |
| 08/P28 | ASTM E1375      |
| 08/P29 | ASTM E1376      |
| 08/P33 | ASTM E1111      |
| 08/P34 | ASTM E1414      |
| 08/P44 | ISO 354         |
| 08/P49 | AMA-1-II-67     |
| 08/P50 | ISO 140, Part 9 |

**NVLAP LAB CODE 100239-0****Hufcor Laboratory**

1017 South Jackson Street  
P.O. Box 591  
Janesville, WI 53547-0591  
Contact: Mr. Todd A. Williams  
Phone: 608-758-8329  
Fax: 608-758-8300  
E-Mail: twilliams@hufcor.com

**Acoustical Testing Services**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |           |
|--------|-----------|
| 08/P06 | ASTM E90  |
| 08/P31 | ASTM E336 |

**NVLAP LAB CODE 100247-0****Beaulieu of America Hollytex Division**

505 N.E. 7th  
P.O. Box 369  
Anadarko, OK 73005-2299  
Contact: Ms. Carla McCathern  
Phone: 405-247-7453  
Fax: 405-247-9303

**Carpet and Carpet Cushion**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Tests Applicable to Carpet and Carpet Cushion**

|        |                     |
|--------|---------------------|
| 03/T01 | AATCC 16 (Option E) |
|--------|---------------------|

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G04 AATCC 165

03/G09 ASTM D1335

03/G10 ASTM D3936

**NVLAP LAB CODE 100248-0****Knauf Fiber Glass Research Laboratory**

240 Elizabeth Street

Shelbyville, IN 46176-1496

Contact: Mr. Timothy R. Jonas

Phone: 317-398-4434

Fax: 317-398-3675

E-Mail: trjl@knauffiberglass.com

**Thermal Insulation Materials**

Accreditation Valid Through: March 31, 2001

**NVLAP***Code Designation***Corrosiveness**

01/C03 ASTM C665 (Sec. 13.8)

**Mass, Density, and Dimensional Stability**

01/D02 ASTM C167

01/D08 ASTM C302

01/D09 ASTM C303

01/D11 ASTM C356

01/D12 ASTM C411

01/D13 ASTM C519

**Strength**

01/S01a ASTM C165 (Proc. A)

**Thermal Resistance**

01/T01 ASTM C177

01/T05 ASTM C335

01/T06 ASTM C518

01/T09 ASTM C653

01/T10 ASTM C687

**NVLAP LAB CODE 100251-0****St. of California, Bur. of Home Furnishings &****Thermal Insulation**

3485 Orange Grove Avenue

North Highlands, CA 95660-5595

Contact: Dr. Stephen J. Fischer

Phone: 916-574-2060

Fax: 916-574-2449

E-Mail: steve\_fischer@dca.ca.gov

**Thermal Insulation Materials**

Accreditation Valid Through: June 30, 2001

**NVLAP***Code Designation***Corrosiveness**

01/C01 ASTM C739 (Sec. 9)

01/C02 16 CFR-Part 1209.5

**Flammability**

01/F07 16 CFR-Part 1209.6

01/F08 16 CFR-Part 1209.7

01/F09 ASTM C739 (Sec. 10) by ASTM E970

01/F10 ASTM C739 (Sec. 14)

**Mass, Density, and Dimensional Stability**

01/D02 ASTM C167

01/D08 ASTM C302

01/D09 ASTM C303

01/D26 16 CFR-Part 1209.4

01/D27 ASTM C739 (Sec. 8)

**Thermal Resistance**

01/T01 ASTM C177

01/T05 ASTM C335

01/T10 ASTM C687

**NVLAP LAB CODE 100252-0****DL Labs, Inc.**

116 East 16th Street

New York, NY 10003-2112

Contact: Mr. Thomas J. Sliva

Phone: 212-777-4445

Fax: 212-505-8419

E-Mail: dllabs@aol.com

URL: <http://www.dllabs.com>**Commercial Products Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP***Code Designation***Building Seals and Sealants**

13/O01 ASTM C510

13/O02a ASTM C603

13/O02b CAN2-19.0-M77, Meth. 3.1

13/O03 ASTM C639

13/O04a ASTM C661

13/O04b CAN2-19.0-M77, Meth. 8.1

13/O05a ASTM C679

13/O05b CAN2-19.0-M77, Meth. 2.1

13/O06 ASTM C681

13/O07 ASTM C711

13/O08 ASTM C712

13/O09 ASTM C713

13/O10 ASTM C718

13/O11a ASTM C719

13/O11b CAN2-19.0-M77, Meth. 14.4

13/O12 ASTM C731

13/O13 ASTM C732

13/O14 ASTM C733

13/O15 ASTM C734

13/O16 ASTM C736

13/O17 ASTM C741

13/O18 ASTM C742

13/O19a ASTM C792

13/O19b CAN2-19.0-M77, Meth. 5.1

13/O20 ASTM C793

13/O21 ASTM C794

13/O22 ASTM C910

13/O23 ASTM D2202

13/O24 ASTM D2203

13/O25 ASTM D2376

13/O26 ASTM D2377

13/O27 ASTM D2450

13/O28 ASTM D2451

13/O29 ASTM D2452

13/O30 ASTM D2453

13/O31 CAN2-19.0-M77, Meth. 7.1



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|                                                         |                                 |         |                                  |
|---------------------------------------------------------|---------------------------------|---------|----------------------------------|
| 13/O32                                                  | CAN2-19.0-M77, Meth. 7.3        | 09/B19b | CGSB Method 1-GP-71, Meth. 105.1 |
| 13/O33                                                  | CAN2-19.0-M77, Meth. 8.2        | 09/B19c | CGSB Method 1-GP-71, Meth. 106.1 |
| 13/O34                                                  | CAN2-19.0-M77, Meth. 11.1       | 09/B19d | CGSB Method 1-GP-71, Meth. 107.1 |
| 13/O35                                                  | CAN2-19.0-M77, Meth. 14.7       | 09/B19e | CGSB Method 1-GP-71, Meth. 110.1 |
| 13/O36                                                  | CAN2-19.0-M77, Meth. 19.2       | 09/B20  | ASTM D1309                       |
| 13/O37                                                  | ASTM C920                       | 09/B23  | ASTM D1640                       |
| 13/O38                                                  | ASTM C1241                      | 09/B24  | ASTM D522                        |
| 13/O39                                                  | ASTM C1183                      | 09/B25  | ASTM D2197                       |
| 13/O40                                                  | ASTM C1246                      | 09/B26  | ASTM D2243                       |
| 13/O41                                                  | CAN2-19.0-M77, Meth. 9.1        | 09/B27  | ASTM D2248                       |
| 13/O42                                                  | CAN2-19.0-M77, Meth. 9.2        | 09/B29  | ASTM D2486                       |
| 13/O43                                                  | CAN2-19.0-M77, Meth. 14.6       | 09/B31  | ASTM D2805                       |
| 13/O44                                                  | CAN2-19.0-M77, Meth. 18.2       | 09/B32  | ASTM D3273                       |
| 13/O45                                                  | ASTM C834                       | 09/B33  | ASTM D3274                       |
| <b><i>Paints and Related Coatings and Materials</i></b> |                                 | 09/B34  | ASTM D3450                       |
| 09/A01                                                  | ASTM D56                        | 09/B37  | ASTM D4060                       |
| 09/A02                                                  | ASTM D93 (Method A)             | 09/B38  | ASTM D4062                       |
| 09/A03                                                  | ASTM D153                       | 09/B39  | ASTM D4213                       |
| 09/A04                                                  | ASTM D185                       | 09/B41  | Fed. Std. 141, Method 4494       |
| 09/A05                                                  | ASTM D281                       | 09/B42  | Fed. Std. 141, Method 4061       |
| 09/A07                                                  | ASTM D523                       | 09/B43  | ASTM D3359                       |
| 09/A08                                                  | ASTM D562                       | 09/B44  | ASTM D4828                       |
| 09/A09                                                  | ASTM D1005                      | 09/B45  | CGSB Method 1-GP-71, Meth. 14.1  |
| 09/A10                                                  | ASTM D1186                      | 09/B46a | ASTM D1849                       |
| 09/A11                                                  | ASTM D1200                      | 09/B46b | CGSB Method 1-GP-71, Meth. 30.3  |
| 09/A12                                                  | ASTM D1210                      | 09/B47  | CGSB Method 1-GP-71, Meth. 32.1  |
| 09/A13                                                  | ASTM D1212 (Method A)           | 09/B48  | CGSB Method 1-GP-71, Meth. 37.3  |
| 09/A14                                                  | ASTM D1296                      | 09/B49  | CGSB Method 1-GP-71, Meth. 112.2 |
| 09/A15                                                  | ASTM D1310                      | 09/B50  | CGSB Method 1-GP-71, Meth. 114.1 |
| 09/A16                                                  | ASTM D1400                      | 09/B51  | CGSB Method 1-GP-71, Meth. 116.2 |
| 09/A17                                                  | ASTM D1475                      | 09/B52  | CGSB Method 1-GP-71, Meth. 123.2 |
| 09/A18                                                  | ASTM D1544                      | 09/B53  | CGSB Method 1-GP-71, Meth. 125.1 |
| 09/A19                                                  | ASTM D1729                      | 09/B54  | CGSB Method 1-GP-71, Meth. 127.1 |
| 09/A20                                                  | ASTM D2244                      | 09/B55  | CGSB Method 1-GP-71, Meth. 130.1 |
| 09/A21                                                  | ASTM D3278                      | 09/B56  | CGSB Method 1-GP-71, Meth. 131.2 |
| 09/A22                                                  | ASTM D3363                      | 09/B57  | CGSB Method 1-GP-71, Meth. 132.1 |
| 09/A23                                                  | ASTM D3793                      | 09/B58  | CGSB Method 1-GP-71, Meth. 134.1 |
| 09/A25                                                  | ASTM D4212                      | 09/B59  | CGSB Method 1-GP-71, Meth. 135.1 |
| 09/A26                                                  | ASTM E1347                      | 09/B59  | CGSB Method 1-GP-71, Meth. 135.1 |
| 09/A28                                                  | ASTM E313                       | 09/B60  | CGSB Method 1-GP-71, Meth. 142.1 |
| 09/A30                                                  | CGSB Method 1-GP-71, Meth. 10.1 | 09/B61  | ASTM D412                        |
| 09/A31                                                  | CGSB Method 1-GP-71, Meth. 12.8 | 09/B62  | ASTM D1653                       |
| 09/A32                                                  | CGSB Method 1-GP-71, Meth. 45.1 | 09/B63  | ASTM D2134                       |
| 09/A33                                                  | ASTM D2196                      | 09/B64  | ASTM D2370                       |
| 09/B02                                                  | ASTM D332                       | 09/B65  | ASTM D3258                       |
| 09/B03                                                  | ASTM D344                       | 09/B66  | ASTM D3806                       |
| 09/B04                                                  | ASTM D610                       | 09/B67  | ASTM D4400                       |
| 09/B05                                                  | ASTM D4214                      | 09/B68  | ASTM D4541                       |
| 09/B06                                                  | ASTM D660                       | 09/B69  | ASTM D4707                       |
| 09/B07                                                  | ASTM D661                       | 09/B70  | ASTM D4946                       |
| 09/B08                                                  | ASTM D662                       | 09/B71  | ASTM D2794                       |
| 09/B09                                                  | ASTM D711                       | 09/C07  | ASTM D1133                       |
| 09/B10                                                  | ASTM D714                       | 09/C09  | ASTM D1259                       |
| 09/B11                                                  | ASTM D772                       | 09/C11  | ASTM D1353                       |
| 09/B12                                                  | ASTM D868                       | 09/C12  | ASTM D1364                       |
| 09/B13a                                                 | ASTM D968                       | 09/C22  | ASTM D1644                       |
| 09/B13b                                                 | CGSB Method 1-GP-71 Meth. 104.1 | 09/C26a | ASTM D2369                       |
| 09/B14                                                  | ASTM D869                       | 09/C26b | CGSB Method 1-GP-71, Meth. 17.1  |
| 09/B15                                                  | ASTM D870                       | 09/C26c | CGSB Method 1-GP-71, Meth. 19.1  |
| 09/B16                                                  | ASTM D913                       | 09/C27  | ASTM D2371                       |
| 09/B18                                                  | ASTM D969                       | 09/C28  | ASTM D2697                       |
| 09/B19a                                                 | ASTM D1308                      | 09/C29  | ASTM D2698                       |



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|                 |                                                |
|-----------------|------------------------------------------------|
| 09/C30          | ASTM D2832                                     |
| 09/C37          | ASTM D3723                                     |
| 09/C39          | ASTM D3960                                     |
| 09/C40          | ASTM D4017                                     |
| 09/C42          | CGSB Method 1-GP-71, Meth. 21.1                |
| 09/C43          | CGSB Method 1-GP-71, Meth. 24.1                |
| 09/C44          | ASTM D5095                                     |
| 09/C45          | CGSB Method 1-GP-71, Meth. 69.3                |
| 09/D01          | ASTM B117                                      |
| 09/D02          | ASTM D609                                      |
| 09/D03          | ASTM D822                                      |
| 09/D04          | ASTM D823 (Limited to Practices B, C, D and E) |
| 09/D05          | ASTM D1006                                     |
| 09/D06          | ASTM D1014                                     |
| 09/D07          | ASTM D1654                                     |
| 09/D13          | ASTM D3924                                     |
| 09/D14          | ASTM G23                                       |
| 09/D16          | ASTM G53                                       |
| 09/D17          | ASTM D4446                                     |
| 09/D18          | ASTM D5401                                     |
| <b>Plastics</b> |                                                |
| 15/A26          | ASTM D2240                                     |

### NVLAP LAB CODE 100255-0

#### Underwriters Laboratories, Inc.

1285 Walt Whitman Road  
Melville, NY 11747-3081  
Contact: Mr. Rick A. Titus  
Phone: 847-272-8800  
Fax: 847-509-6321  
E-Mail: Rick.A.Titus@us.ul.com  
URL: <http://www.ul.com>

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

##### NVLAP

Code      Designation

#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

#### Immunity Test Methods:

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

#### Safety Test Methods:

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

#### Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |
| 12/T42  | ACA TS-002                                                                                                                                                                                                                                 |
| 12/T44  | ACA TS-004                                                                                                                                                                                                                                 |
| 12/T45  | ACA TS-006                                                                                                                                                                                                                                 |
| 12/T46  | ACA TS-008                                                                                                                                                                                                                                 |

#### Energy Efficient Lighting Products

Accreditation Valid Through: September 30, 2001

##### NVLAP

Code      Designation

#### Color Measurements

|        |           |
|--------|-----------|
| 22/C01 | IES LM-58 |
|--------|-----------|

#### Electrical Measurements

|        |              |
|--------|--------------|
| 22/E01 | IES LM-9     |
| 22/E02 | IES LM-45    |
| 22/E04 | IES LM-66    |
| 22/E05 | ANSI-C78.375 |

#### Life Tests

|        |           |
|--------|-----------|
| 22/L01 | IES LM-40 |
| 22/L04 | IES LM-65 |

#### Photometric Measurements

|         |                        |
|---------|------------------------|
| 22/P01a | IES LM-9 (Total Flux)  |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## NVLAP LAB CODE 100256-0

### Western Electro-Acoustic Lab., Inc.

1711 16th Street  
Santa Monica, CA 90404  
Contact: Mr. Gary E. Mange  
Phone: 310-450-1733  
Fax: 310-396-3424  
E-Mail: gmange@weal.com

### Acoustical Testing Services

Accreditation Valid Through: March 31, 2001

#### NVLAP

| Code   | Designation     |
|--------|-----------------|
| 08/P03 | ASTM C423       |
| 08/P06 | ASTM E90        |
| 08/P30 | ASTM E1408      |
| 08/P31 | ASTM E336       |
| 08/P32 | ASTM E1007      |
| 08/P45 | ISO 140, Part 3 |

## NVLAP LAB CODE 100267-0

### Retlif Testing Laboratories

795 Marconi Avenue  
Ronkonkoma, NY 11779-7231  
Contact: Mr. Ross A. Hansen  
Phone: 631-737-1500  
Fax: 631-737-1497  
E-Mail: rhansen@retlif.com  
URL: <http://www.retlif.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

#### NVLAP

| Code      | Designation                                                                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

#### Emissions Test Methods:

#### Immunity Test Methods:

|        |                                                                                    |
|--------|------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1                                               |

|                                                                                                       |
|-------------------------------------------------------------------------------------------------------|
| (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test                                 |
| 12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                            |
| 12/I04 IEC 61000-4-5 (1995): Surge Immunity Test                                                      |
| 12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields       |
| 12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                             |
| 12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

#### MIL-STD-462 : Conducted Emissions:

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

#### MIL-STD-462 : Conducted Susceptibility:

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B06 | MIL-STD-462 Method CS07                |
| 12/B07 | MIL-STD-462 Method CS09                |
| 12/B08 | MIL-STD-462 Method CS10                |
| 12/B09 | MIL-STD-462 Method CS11                |
| 12/B10 | MIL-STD-462 Method CS12                |
| 12/B11 | MIL-STD-462 Method CS13                |
| 12/B12 | MIL-STD-462 Version D Method CS101     |
| 12/B13 | MIL-STD-462 Version D Method CS103     |
| 12/B14 | MIL-STD-462 Version D Method CS104     |
| 12/B15 | MIL-STD-462 Version D Method CS105     |
| 12/B16 | MIL-STD-462 Version D Method CS109     |
| 12/B17 | MIL-STD-462 Version D Method CS114     |
| 12/B18 | MIL-STD-462 Version D Method CS115     |
| 12/B19 | MIL-STD-462 Version D Method CS116     |

#### MIL-STD-462 : Radiated Emissions:

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D03 | MIL-STD-462 Method RE03            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

#### MIL-STD-462 : Radiated Susceptibility:

|        |                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                       |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                       |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05                                                                                                       |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                       |
| 12/E08 | MIL-STD-462 Version D Method RS101                                                                                            |

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|                                         |                                                                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/E09                                  | MIL-STD-462 Version D Method RS103                                                                                                                                                                                                         |
| 12/E10                                  | MIL-STD-462 Version D Method RS105                                                                                                                                                                                                         |
| <b>Telecommunications Test Methods:</b> |                                                                                                                                                                                                                                            |
| 12/CS03                                 | CS-03                                                                                                                                                                                                                                      |
| 12/T01                                  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a                                 | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b                                 | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c                                 | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |

## NVLAP LAB CODE 100267-1

### Retlif Testing Laboratories

101 New Boston Road  
Goffstown, NH 03045  
Contact: John Monahan  
Phone: 631-497-4600  
Fax: 631-497-5281

URL: <http://www.retelif.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

## NVLAP LAB CODE 100268-0

### TUV Product Service, Inc.

10040 Mesa Rim Road  
San Diego, CA 92121-1034  
Contact: Mr. R. Barry Wallen  
Phone: 619-546-3999  
Fax: 619-546-0364  
E-Mail: [bwallen@TUVps.com](mailto:bwallen@TUVps.com)  
URL: <http://www.tuvps.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

#### MIL-STD-462 : Conducted Emissions:

|        |                         |
|--------|-------------------------|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |

#### MIL-STD-462 : Conducted Susceptibility:

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B06 | MIL-STD-462 Method CS07                |
| 12/B07 | MIL-STD-462 Method CS09                |

#### MIL-STD-462 : Radiated Emissions:

|        |                         |
|--------|-------------------------|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |

#### MIL-STD-462 : Radiated Susceptibility:

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                    |
| 12/E02 | MIL-STD-462 Method RS02                                                    |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing                                          |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

RADHAZ procedures for high level testing  
(Consult laboratory for field strengths  
available)

**NVLAP LAB CODE 100269-0****Intermec Technologies Corporation**

550 Second Street S.E.  
Cedar Rapids, IA 52401-2094  
Contact: Mr. Cedric Brownfield  
Phone: 319-846-2415  
Fax: 319-846-2475  
E-Mail: cedric.brownfield@intermec.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

*Code Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 100270-0****Intertek Testing Services NA Inc.**

70 Codman Hill Road  
Boxborough, MA 01719  
Contact: Mr. Robert F. Martin  
Phone: 978-635-8606  
Fax: 978-263-7086  
E-Mail: rfm@itsqs.com  
URL: <http://www.etlsemko.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

*Code Designation*

**Emissions Test Methods:**

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance                                                     |

characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

|                                                |                                                                                                                               |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22b                                      | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment   |
| 12/F01                                         | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a                                        | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b                                        | Radiated Emissions                                                                                                            |
| 12/T51                                         | AS/NZS 3548                                                                                                                   |
| <b>MIL-STD-462 : Conducted Emissions:</b>      |                                                                                                                               |
| 12/A01                                         | MIL-STD-462 Method CE01                                                                                                       |
| 12/A04                                         | MIL-STD-462 Method CE02                                                                                                       |
| 12/A06                                         | MIL-STD-462 Method CE03                                                                                                       |
| 12/A08                                         | MIL-STD-462 Method CE04                                                                                                       |
| 12/A10                                         | MIL-STD-462 Method CE06                                                                                                       |
| 12/A12                                         | MIL-STD-462 Method CE07                                                                                                       |
| <b>MIL-STD-462 : Conducted Susceptibility:</b> |                                                                                                                               |
| 12/B01                                         | MIL-STD-462 Method CS01                                                                                                       |
| 12/B02                                         | MIL-STD-462 Method CS02                                                                                                       |
| 12/B04                                         | MIL-STD-462 Method CS03/CS04/CS05/CS08                                                                                        |
| 12/B05                                         | MIL-STD-462 Method CS06                                                                                                       |
| 12/B06                                         | MIL-STD-462 Method CS07                                                                                                       |
| 12/B07                                         | MIL-STD-462 Method CS09                                                                                                       |
| 12/B08                                         | MIL-STD-462 Method CS10                                                                                                       |
| 12/B09                                         | MIL-STD-462 Method CS11                                                                                                       |
| 12/B10                                         | MIL-STD-462 Method CS12                                                                                                       |
| 12/B11                                         | MIL-STD-462 Method CS13                                                                                                       |
| <b>MIL-STD-462 : Radiated Emissions:</b>       |                                                                                                                               |
| 12/D01                                         | MIL-STD-462 Method RE01                                                                                                       |
| 12/D02                                         | MIL-STD-462 Method RE02                                                                                                       |
| 12/D03                                         | MIL-STD-462 Method RE03                                                                                                       |
| <b>MIL-STD-462 : Radiated Susceptibility:</b>  |                                                                                                                               |
| 12/E01                                         | MIL-STD-462 Method RS01                                                                                                       |
| 12/E02                                         | MIL-STD-462 Method RS02                                                                                                       |
| 12/E03                                         | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)                                                    |
| 12/E04                                         | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05                                         | MIL-STD-462 Method RS05                                                                                                       |
| 12/E07                                         | MIL-STD-462 Method RS06                                                                                                       |

**Safety Test Methods:**

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

**Telecommunications Test Methods:**

|         |                                                                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                           |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                               |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; |

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|         |                                                            |
|---------|------------------------------------------------------------|
|         | 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                 |
| 12/T42  | ACA TS-002                                                 |
| 12/T43  | ACA TS-003                                                 |
| 12/T44  | ACA TS-004                                                 |
| 12/T45  | ACA TS-006                                                 |
| 12/T49  | ACA TS-016                                                 |

### NVLAP LAB CODE 100271-0

#### TUV Product Service, Inc.

1775 Old Hwy. 8 NW, Suite 104  
New Brighton, MN 55112-1891

Contact: Mr. R. Barry Wallen

Phone: 303-402-5241

Fax: 303-449-3004

E-Mail: bwallen@tuvps.com

URL: <http://www.tuvglobal.com>

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment   |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b   | Radiated Emissions                                                                                                            |
| 12/T51    | AS/NZS 3548                                                                                                                   |

#### Immunity Test Methods:

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

#### MIL-STD-462 : Conducted Emissions:

|        |                         |
|--------|-------------------------|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A12 | MIL-STD-462 Method CE07 |

#### MIL-STD-462 : Conducted Susceptibility:

|        |                         |
|--------|-------------------------|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |

#### MIL-STD-462 : Radiated Emissions:

|        |                         |
|--------|-------------------------|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |

#### MIL-STD-462 : Radiated Susceptibility:

|        |                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                       |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                       |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)                                                    |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                       |

#### Safety Test Methods:

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

### NVLAP LAB CODE 100271-1

#### TUV Product Service, Inc.

5541 Central Avenue  
Boulder, CO 80301-2846

Contact: R. Barry Wallen

Phone: 303-402-5241

Fax: 303-449-3004

E-Mail: jdoolittle@tuvps.com

URL: <http://www.tuvglobal.com>

#### Electromagnetic Compatibility & Telecommunication

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#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz                                                                                                                              |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100272-0****Communication Certification Laboratory**

1940 West Alexander Street  
Salt Lake City, UT 84119-2039  
Contact: Ms. Anh T. Wride  
Phone: 801-972-6146  
Fax: 801-972-8432  
E-Mail: wsh@cclab.com  
URL: <http://www.cclab.com/>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**Safety Test Methods:**

12/T41 ACA TS-001  
12/T50 AS/NZS 3260

**Telecommunications Test Methods:**

12/CS03 CS-03  
12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital  
12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection  
12/T01b 68.316 Hearing Aid Compatibility: technical standards  
12/T01c 68.302 Environmental simulation (Par. a,b)  
12/T42 ACA TS-002  
12/T43 ACA TS-003  
12/T44 ACA TS-004  
12/T45 ACA TS-006

12/T46 ACA TS-008  
12/T49 ACA TS-016

**NVLAP LAB CODE 100273-0****MET Laboratories, Inc.**

914 W. Patapsco Avenue  
Baltimore, MD 21230-3432  
Contact: Mr. Robert Frier  
Phone: 410-354-3300  
Fax: 410-354-3313  
E-Mail: [rfrier@metlabs.com](mailto:rfrier@metlabs.com)  
URL: <http://www.metlabs.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

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Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**Immunity Test Methods:**

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test  
12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test  
12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test  
12/I04 IEC 61000-4-5 (1995): Surge Immunity Test  
12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields  
12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test  
12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

**Safety Test Methods:**

12/T41 ACA TS-001  
12/T50 AS/NZS 3260

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |
| 12/T42  | ACA TS-002                                                                                                                                                                                                                                 |
| 12/T43  | ACA TS-003                                                                                                                                                                                                                                 |
| 12/T44  | ACA TS-004                                                                                                                                                                                                                                 |
| 12/T45  | ACA TS-006                                                                                                                                                                                                                                 |
| 12/T49  | ACA TS-016                                                                                                                                                                                                                                 |

## NVLAP LAB CODE 100274-0

### Intertek Testing Services NA Inc.

731 Enterprise Drive  
Lexington, KY 40510-1029  
Contact: Mr. Tim Scott  
Phone: 859-226-1083  
Fax: 859-225-1050  
E-Mail: tims@itsqs.com  
URL: <http://www.testmark.com>

### Electromagnetic Compatibility & Telecommunications

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#### NVLAP

Code Designation

## Emissions Test Methods:

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment   |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b   | Radiated Emissions                                                                                                            |
| 12/T51    | AS/NZS 3548                                                                                                                   |

## Immunity Test Methods:

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to                                                                          |

Conducted Disturbances, Induced

Radio-Frequency Fields

12/I06 IEC 61000-4-8 (1993): Power Frequency

Magnetic Field Immunity Test

12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

## Safety Test Methods:

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

## Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |
| 12/T42  | ACA TS-002                                                                                                                                                                                                                                 |
| 12/T43  | ACA TS-003                                                                                                                                                                                                                                 |
| 12/T44  | ACA TS-004                                                                                                                                                                                                                                 |
| 12/T45  | ACA TS-006                                                                                                                                                                                                                                 |
| 12/T46  | ACA TS-008                                                                                                                                                                                                                                 |
| 12/T49  | ACA TS-016                                                                                                                                                                                                                                 |

## NVLAP LAB CODE 100275-0

### Lucent Technologies, Global Product Compliance Lab

101 Crawfords Corner Road, M/S 11C-195  
P.O. Box 3030  
Holmdel, NJ 07733-3030  
Contact: Mr. E. Gardner Burkhardt  
Phone: 732-332-6001  
Fax: 732-332-5999  
E-Mail: [egburkhardt@lucent.com](mailto:egburkhardt@lucent.com)  
URL: <http://www.gpcl.com>

### Electromagnetic Compatibility & Telecommunications

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#### NVLAP

Code Designation

## Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference                                                                                                |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|         |                                                     |
|---------|-----------------------------------------------------|
|         | Characteristics of Information Technology Equipment |
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |
| 12/T51  | AS/NZS 3548                                         |

**Immunity Test Methods:**

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

**Safety Test Methods:**

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

**Telecommunications Test Methods:**

|        |            |
|--------|------------|
| 12/T42 | ACA TS-002 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T46 | ACA TS-008 |

**NVLAP LAB CODE 100276-0****D.L.S. Electronic Systems, Inc.**

1250 Peterson Drive  
Wheeling, IL 60090-6454  
Contact: Mr. Brian J. Mattson  
Phone: 847-537-6400  
Fax: 847-537-6488  
E-Mail: [bmattson@dlsemc.com](mailto:bmattson@dlsemc.com)  
URL: <http://www.dlsemc.com>

**Electromagnetic Compatibility & Telecommunications**

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology                                                      |

|                               |                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
|                               | Equipment                                                                                                  |
| 12/F01                        | FCC Method - 47 CFR Part 15 - Digital Devices                                                              |
| 12/F01a                       | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                        |
| 12/F01b                       | Radiated Emissions                                                                                         |
| 12/T51                        | AS/NZS 3548                                                                                                |
| <b>Immunity Test Methods:</b> |                                                                                                            |
| 12/I01                        | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02                        | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03                        | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04                        | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05                        | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06                        | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07                        | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

**NVLAP LAB CODE 100278-0****Elite Electronic Engineering Inc.**

1516 Centre Circle  
Downers Grove, IL 60515-1082  
Contact: Mr. Raymond Klouda  
Phone: 630-495-9770  
Fax: 630-495-9785  
E-Mail: [engineering@elitetest.com](mailto:engineering@elitetest.com)  
URL: <http://www.elitetest.com>

**Electromagnetic Compatibility & Telecommunications**

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**Emissions Test Methods:**

|                               |                                                                                                                                                                        |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22                      | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a                     | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01                        | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a                       | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b                       | Radiated Emissions                                                                                                                                                     |
| 12/T51                        | AS/NZS 3548                                                                                                                                                            |
| <b>Immunity Test Methods:</b> |                                                                                                                                                                        |
| 12/I01                        | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                                                                                     |
| 12/I02                        | IEC 61000-4-3 (1995) and Amendment 1                                                                                                                                   |



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|        |                                                                                                      |
|--------|------------------------------------------------------------------------------------------------------|
|        | (1998): Radiated, Radio-Frequency<br>Electromagnetic Field Immunity Test                             |
| 12/103 | IEC 61000-4-4 (1995): Electrical Fast<br>Transient/Burst Immunity Test                               |
| 12/104 | IEC 61000-4-5 (1995): Surge Immunity Test                                                            |
| 12/105 | IEC 61000-4-6 (1996): Immunity to<br>Conducted Disturbances, Induced<br>Radio-Frequency Fields       |
| 12/106 | IEC 61000-4-8 (1993): Power Frequency<br>Magnetic Field Immunity Test                                |
| 12/107 | IEC 61000-4-11 (1994): Voltage Dips, Short<br>Interruptions and Voltage Variations Immunity<br>Tests |

### **MIL-STD-462 : Conducted Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

### **MIL-STD-462 : Conducted Susceptibility:**

|        |                                           |
|--------|-------------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                   |
| 12/B02 | MIL-STD-462 Method CS02                   |
| 12/B04 | MIL-STD-462 Method<br>CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                   |
| 12/B06 | MIL-STD-462 Method CS07                   |
| 12/B07 | MIL-STD-462 Method CS09                   |
| 12/B08 | MIL-STD-462 Method CS10                   |
| 12/B09 | MIL-STD-462 Method CS11                   |
| 12/B10 | MIL-STD-462 Method CS12                   |
| 12/B11 | MIL-STD-462 Method CS13                   |
| 12/B12 | MIL-STD-462 Version D Method CS101        |
| 12/B13 | MIL-STD-462 Version D Method CS103        |
| 12/B14 | MIL-STD-462 Version D Method CS104        |
| 12/B15 | MIL-STD-462 Version D Method CS105        |
| 12/B16 | MIL-STD-462 Version D Method CS109        |
| 12/B17 | MIL-STD-462 Version D Method CS114        |
| 12/B18 | MIL-STD-462 Version D Method CS115        |
| 12/B19 | MIL-STD-462 Version D Method CS116        |

### **MIL-STD-462 : Radiated Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D03 | MIL-STD-462 Method RE03            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

### **MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                                |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                                |
| 12/E04 | MIL-STD-462 Method RS03 employing<br>RADHAZ procedures for high level testing<br>(Consult laboratory for field strengths<br>available) |
| 12/E05 | MIL-STD-462 Method RS05                                                                                                                |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                                |
| 12/E08 | MIL-STD-462 Version D Method RS101                                                                                                     |

|                                         |                                                                                                                                                                                                                                                           |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/E09                                  | MIL-STD-462 Version D Method RS103                                                                                                                                                                                                                        |
| 12/E10                                  | MIL-STD-462 Version D Method RS105                                                                                                                                                                                                                        |
| <b>Telecommunications Test Methods:</b> |                                                                                                                                                                                                                                                           |
| 12/CS03                                 | CS-03                                                                                                                                                                                                                                                     |
| 12/T01                                  | Terminal Equipment Network Protection<br>Standards, FCC Method - 47 CFR Part 68 -<br>Analog and Digital                                                                                                                                                   |
| 12/T01a                                 | 68.302 (Par. c,d,e,f) Environmental simulation;<br>68.304 Leakage current limit.; 68.306<br>Hazardous voltage limit.; 68.308 Signal power<br>limit.; 68.310 Longitudinal balance limit.;<br>68.312 On-hook impedance limit.; 68.314<br>Billing protection |
| 12/T01b                                 | 68.316 Hearing Aid Compatibility: technical<br>standards                                                                                                                                                                                                  |
| 12/T01c                                 | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                                |

## NVLAP LAB CODE 100280-0

### **IIT Research Institute/R&B Operation**

20 Clipper Road  
West Conshohocken, PA 19428-2721  
Contact: Mr. Rohit Vohra  
Phone: 610-825-1960 x229  
Fax: 610-825-1684  
E-Mail: rvohra@iitri.org  
URL: www.IITRI.org

### **Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

#### **NVLAP**

*Code      Designation*

### **Emissions Test Methods:**

|         |                                                        |
|---------|--------------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital<br>Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz |
| 12/F01b | Radiated Emissions                                     |

### **MIL-STD-462 : Conducted Emissions:**

|        |                         |
|--------|-------------------------|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |

### **MIL-STD-462 : Conducted Susceptibility:**

|        |                         |
|--------|-------------------------|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |

### **MIL-STD-462 : Radiated Emissions:**

|        |                         |
|--------|-------------------------|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |

### **MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                               |
|--------|-------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                       |
| 12/E02 | MIL-STD-462 Method RS02                                                       |
| 12/E04 | MIL-STD-462 Method RS03 employing<br>RADHAZ procedures for high level testing |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

(Consult laboratory for field strengths available)  
12/E05 MIL-STD-462 Method RS05

**NVLAP LAB CODE 100286-0****Acoustic Systems Acoustical Research Facility**

415 East St. Elmo Road  
P.O. Box 3610  
Austin, TX 78764  
Contact: Mr. Michael C. Black  
Phone: 512-444-1961  
Fax: 512-444-2282  
E-Mail: acoustic@inetport.com

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

|        |             |
|--------|-------------|
| 08/P03 | ASTM C423   |
| 08/P06 | ASTM E90    |
| 08/P08 | ASTM E596   |
| 08/P10 | ANSI S12.31 |
| 08/P24 | ANSI S12.10 |
| 08/P35 | ASTM E1050  |
| 08/P40 | ISO 9296    |
| 08/P41 | ECMA 74     |
| 08/P42 | ECMA 109    |
| 08/P48 | ISO 7779    |

**NVLAP LAB CODE 100288-0****Bentley Testing Laboratory**

14641 E. Don Julian Road  
P.O. Box 527  
City of Industry, CA 91746-3106  
Contact: Ms. Sandy Kolby  
Phone: 626-333-4585 x2253  
Fax: 626-333-4125  
E-Mail: Sandy.Kolby@us.interfaceinc.com

**Carpet and Carpet Cushion**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Tests Applicable to Carpet Cushion**

|         |                                |
|---------|--------------------------------|
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12)       |
| 03/U02  | ASTM D297                      |
| 03/U07  | ASTM D3574 (Test C)            |
| 03/U08  | ASTM D3574 (Test D)            |
| 03/U10  | ASTM D3676 (Sec. 13)           |
| 03/U11  | ASTM D3676 (Sec.14)            |
| 03/U12  | ASTM D3676 (Sec.15)            |
| 03/U13  | ASTM D3676 (Sec.16)            |

**Tests Applicable to Carpet and Carpet Cushion**

|        |                            |
|--------|----------------------------|
| 03/T01 | AATCC 16 (Option E)        |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |

**Tests Applicable to Carpets**

|         |                     |
|---------|---------------------|
| 03/G04  | AATCC 165           |
| 03/G05  | ASTM D418 (Sec. 8)  |
| 03/G05a | ASTM D5848 (Sec. 8) |

|        |                         |
|--------|-------------------------|
| 03/G06 | ASTM D418 (Sec. 9)      |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13)     |
| 03/G09 | ASTM D1335              |
| 03/G10 | ASTM D3936              |
| 03/G12 | ASTM E648               |
| 03/G13 | ASTM E662               |
| 03/G14 | Fed Spec, DDD-C-0095A   |

**NVLAP LAB CODE 100290-0****Akzo Nobel K.K., Kashima EMC Site**

1 Oaza Sunayama, Hasaki, Kashima-gun  
Ibaraki 314-02  
JAPAN  
Contact: Mr. Shuichi Kobayashi  
Phone: +81-479-40-1097  
Fax: +81-479-46-1788  
E-Mail: shuichi.kobayashi@nifty.ne.jp  
URL: <http://www.akzoemc.co.jp>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emission Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 100290-2****Akzo Nobel K.K., Kakegawa EMC Test Site**

322 Shimotaruki, Kakegawa  
Shizuoka 436-0222  
JAPAN  
Contact: Seiji Matsuda  
Phone: +81-837-24-8191  
Fax: +81-537-24-8193  
E-Mail: matsuda@akzoemc.co.jp  
URL: <http://www.akzoemc.co.jp>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emission Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-3****Akzo Nobel K.K., Nagano EMC Test Site**

3226 Yokokawa, Tatsuno, Kamiina-gun

Nagano 399-0511

JAPAN

Contact: Yoshio Kowase

Phone: +81-266-47-5311

Fax: +81-266-47-5540

E-Mail: kowase@akzoemc.co.jp

URL: <http://www.akzoemc.co.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP***Code Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-4****Akzo Nobel K.K., Matsuda EMC Test Site**

1283 Yadorigi, Matsuda, Ashigarakami-gun

Kanagawa 258-0001

JAPAN

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Phone: +81-465-89-2316

Fax: +81-465-89-2160

E-Mail: hayashi@akzoemc.co.jp

URL: <http://www.akzoemc.co.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP***Code Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-5****Akzo Nobel K.K., Tochigi EMC Test Site**

870 Nakaawano, Awano, Kamitsuga-gun

Tochigi 322-0306

JAPAN

Contact: Kazuharu Yanagisawa

Phone: +81-289-86-7121

Fax: +81-289-86-7126

E-Mail: ohashi@akzoemc.co.jp

URL: <http://www.akzoemc.co.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP***Code Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 100296-0****Chomerics Test Services (CTS)**

77 Dragon Court

Woburn, MA 01888-4014

Contact: Mr. David C. Inman

Phone: 781-939-4375

Fax: 781-935-2758

E-Mail: dinman@parker.com

URL: <http://www.chomericstest.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP***Code Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100297-0****Professional Testing Laboratory, Inc.**

714 Glenwood Place  
Dalton, GA 30721  
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Phone: 706-226-3283  
Fax: 706-226-6787  
E-Mail: protest@alltel.net

**Carpet and Carpet Cushion**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code Designation*

**Tests Applicable to Carpet Cushion**

03/U01a ASTM D3574 (Sec. 8.2 & Test A)  
03/U01b ASTM D3676 (Secs. 10-12)  
03/U02 ASTM D297  
03/U03 ASTM D629 (Sec. 10)  
03/U04 ASTM D629 (Secs. 13-22)  
03/U05 ASTM D629 (Secs. 23-27)  
03/U06 ASTM D1667 (Suffix B)  
03/U07 ASTM D3574 (Test C)  
03/U08 ASTM D3574 (Test D)  
03/U09 ASTM D3574 (Test E)  
03/U10 ASTM D3676 (Sec.13)  
03/U11 ASTM D3676 (Sec.14)  
03/U12 ASTM D3676 (Sec.15)  
03/U13 ASTM D3676 (Sec.16)

**Tests Applicable to Carpet and Carpet Cushion**

03/T01 AATCC 16 (Option E)  
03/T02 ASTM D2646 (Secs. 16-24)  
03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G01 AATCC 20  
03/G02 AATCC 20A  
03/G03 AATCC 134  
03/G04 AATCC 165  
03/G05 ASTM D418 (Sec. 8)  
03/G06 ASTM D418 (Sec. 9)  
03/G07 ASTM D418 (Secs. 10-11)  
03/G08 ASTM D418 (Sec. 13)  
03/G09 ASTM D1335  
03/G10 ASTM D3936  
03/G11 ASTM D5252  
03/G12 ASTM E648  
03/G13 ASTM E662  
03/G15 ASTM D6119  
03/G16 CRI TM-101

**NVLAP LAB CODE 100308-0****Special Testing Laboratories, Inc.**

21 Henry Street  
P.O. Box 200  
Bethel, CT 06801-0200  
Contact: Mr. Richard Speciale  
Phone: 203-743-7281  
Fax: 203-791-2451

**Construction Materials Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP**

*Code Designation*

**Aggregates**

02/A03 ASTM C29  
02/A04 ASTM C40  
02/A06 ASTM C88  
02/A07 ASTM C117  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A11 ASTM C131  
02/A12 ASTM C136  
02/A15 ASTM D75  
02/A15 ASTM D75  
02/A44 ASTM C566

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A41 ASTM C192  
02/A43 ASTM C1064  
02/A45 ASTM C42  
02/G01 ASTM C31/C172/C143/C138/C231  
02/G02 ASTM C173

**Road and Paving Materials**

02/M25 ASTM D2726

**Soil and Rock**

02/L02 ASTM D422  
02/L04 ASTM D698  
02/L06 ASTM D1140  
02/L07 ASTM D1556  
02/L08 ASTM D1557  
02/L09 ASTM D1558  
02/L12 ASTM D2168  
02/L13 ASTM D2216  
02/L16 ASTM D2487  
02/L17 ASTM D2488  
02/L20 ASTM D4318  
02/L23 ASTM D2922  
02/L25 ASTM D3017  
02/L31 ASTM D2167

**Standard Practices**

02/A38 ASTM E329  
02/A39 ASTM C1077

**Steel Materials**

02/S02 ASTM A370 (Sec. 14)/E190  
02/S07 ASTM E709  
02/S08 ASTM E165

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

| NVLAP LAB CODE 100315-0                                                                                                                                                        |                              | NVLAP LAB CODE 100316-0                                                                                                                         |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Eastern Materials Testing Lab a division of<br/>Jaworski Geotech</b>                                                                                                        |                              | <b>Independent Materials Testing Laboratories, Inc.</b>                                                                                         |                              |
| 114 Woodlawn Road<br>Berlin, CT 06037<br>Contact: Mr. Kevin J. Brigandi<br>Phone: 800-232-3634<br>Fax: 888-215-9721<br>E-Mail: emtl@jgl-geo.com<br>URL: http://www.jgi-geo.com |                              | 57 N. Washington Street<br>P.O. Box 745<br>Plainville, CT 06062-0745<br>Contact: Mr. David P. Aiudi<br>Phone: 203-525-7193<br>Fax: 203-747-6455 |                              |
| <b>Construction Materials Testing</b><br>Accreditation Valid Through: June 30, 2001                                                                                            |                              | <b>Construction Materials Testing</b><br>Accreditation Valid Through: March 31, 2001                                                            |                              |
| <i>NVLAP</i>                                                                                                                                                                   |                              | <i>NVLAP</i>                                                                                                                                    |                              |
| <i>Code</i>                                                                                                                                                                    | <i>Designation</i>           | <i>Code</i>                                                                                                                                     | <i>Designation</i>           |
| <b>Aggregates</b>                                                                                                                                                              |                              | <b>Aggregates</b>                                                                                                                               |                              |
| 02/A03                                                                                                                                                                         | ASTM C29                     | 02/A03                                                                                                                                          | ASTM C29                     |
| 02/A04                                                                                                                                                                         | ASTM C40                     | 02/A04                                                                                                                                          | ASTM C40                     |
| 02/A06                                                                                                                                                                         | ASTM C88                     | 02/A05                                                                                                                                          | ASTM C87                     |
| 02/A07                                                                                                                                                                         | ASTM C117                    | 02/A06                                                                                                                                          | ASTM C88                     |
| 02/A09                                                                                                                                                                         | ASTM C127                    | 02/A07                                                                                                                                          | ASTM C117                    |
| 02/A10                                                                                                                                                                         | ASTM C128                    | 02/A08                                                                                                                                          | ASTM C123                    |
| 02/A12                                                                                                                                                                         | ASTM C136                    | 02/A09                                                                                                                                          | ASTM C127                    |
| 02/A15                                                                                                                                                                         | ASTM D75                     | 02/A10                                                                                                                                          | ASTM C128                    |
| <b>Cement</b>                                                                                                                                                                  |                              | 02/A11                                                                                                                                          | ASTM C131                    |
| 02/A17                                                                                                                                                                         | ASTM C109                    | 02/A12                                                                                                                                          | ASTM C136                    |
| 02/A21                                                                                                                                                                         | ASTM C157                    | 02/A13                                                                                                                                          | ASTM C142                    |
| 02/A28                                                                                                                                                                         | ASTM C227                    | 02/A15                                                                                                                                          | ASTM D75                     |
| 02/A30                                                                                                                                                                         | ASTM C266                    | 02/A44                                                                                                                                          | ASTM C566                    |
| 02/A51                                                                                                                                                                         | ASTM C780 (Annex A7)         | 02/A46                                                                                                                                          | ASTM C535                    |
| 02/A52                                                                                                                                                                         | ASTM C1019                   | <b>Cement</b>                                                                                                                                   |                              |
| <b>Concrete</b>                                                                                                                                                                |                              | 02/A26                                                                                                                                          | ASTM C191                    |
| 02/A01                                                                                                                                                                         | ASTM C39                     | 02/A31                                                                                                                                          | ASTM C305                    |
| 02/A02                                                                                                                                                                         | ASTM C617                    | 02/A51                                                                                                                                          | ASTM C780 (Annex A7)         |
| 02/A41                                                                                                                                                                         | ASTM C192                    | 02/A52                                                                                                                                          | ASTM C1019                   |
| 02/A43                                                                                                                                                                         | ASTM C1064                   | <b>Concrete</b>                                                                                                                                 |                              |
| 02/A45                                                                                                                                                                         | ASTM C42                     | 02/A01                                                                                                                                          | ASTM C39                     |
| 02/G01                                                                                                                                                                         | ASTM C31/C172/C143/C138/C231 | 02/A02                                                                                                                                          | ASTM C617                    |
| 02/G02                                                                                                                                                                         | ASTM C173                    | 02/A40                                                                                                                                          | ASTM C78                     |
| <b>Road and Paving Materials</b>                                                                                                                                               |                              | 02/A41                                                                                                                                          | ASTM C192                    |
| 02/M19                                                                                                                                                                         | ASTM D2172                   | 02/A43                                                                                                                                          | ASTM C1064                   |
| <b>Soil and Rock</b>                                                                                                                                                           |                              | 02/A45                                                                                                                                          | ASTM C42                     |
| 02/L02                                                                                                                                                                         | ASTM D422                    | 02/G01                                                                                                                                          | ASTM C31/C172/C143/C138/C231 |
| 02/L04                                                                                                                                                                         | ASTM D698                    | 02/G02                                                                                                                                          | ASTM C173                    |
| 02/L05                                                                                                                                                                         | ASTM D854                    | <b>Road and Paving Materials</b>                                                                                                                |                              |
| 02/L06                                                                                                                                                                         | ASTM D1140                   | 02/M08                                                                                                                                          | ASTM D979                    |
| 02/L08                                                                                                                                                                         | ASTM D1557                   | 02/M11                                                                                                                                          | ASTM D1188                   |
| 02/L12                                                                                                                                                                         | ASTM D2168                   | 02/M19                                                                                                                                          | ASTM D2172                   |
| 02/L13                                                                                                                                                                         | ASTM D2216                   | 02/M24                                                                                                                                          | ASTM D2041                   |
| 02/L16                                                                                                                                                                         | ASTM D2487                   | 02/M25                                                                                                                                          | ASTM D2726                   |
| 02/L17                                                                                                                                                                         | ASTM D2488                   | <b>Soil and Rock</b>                                                                                                                            |                              |
| 02/L20                                                                                                                                                                         | ASTM D4318                   | 02/L01                                                                                                                                          | ASTM D4220                   |
| 02/L23                                                                                                                                                                         | ASTM D2922                   | 02/L02                                                                                                                                          | ASTM D422                    |
| 02/L25                                                                                                                                                                         | ASTM D3017                   | 02/L04                                                                                                                                          | ASTM D698                    |
| 02/L31                                                                                                                                                                         | ASTM D2167                   | 02/L05                                                                                                                                          | ASTM D854                    |
| <b>Standard Practices</b>                                                                                                                                                      |                              | 02/L06                                                                                                                                          | ASTM D1140                   |
| 02/A38                                                                                                                                                                         | ASTM E329                    | 02/L07                                                                                                                                          | ASTM D1556                   |
| 02/A39                                                                                                                                                                         | ASTM C1077                   | 02/L08                                                                                                                                          | ASTM D1557                   |
|                                                                                                                                                                                |                              | 02/L10                                                                                                                                          | ASTM D1883                   |
|                                                                                                                                                                                |                              | 02/L12                                                                                                                                          | ASTM D2168                   |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|        |                                                                                                                     |
|--------|---------------------------------------------------------------------------------------------------------------------|
| 02/L13 | ASTM D2216                                                                                                          |
| 02/L14 | ASTM D2217                                                                                                          |
| 02/L16 | ASTM D2487                                                                                                          |
| 02/L17 | ASTM D2488                                                                                                          |
| 02/L19 | ASTM D4254                                                                                                          |
| 02/L20 | ASTM D4318                                                                                                          |
| 02/L21 | ASTM D2434                                                                                                          |
| 02/L23 | ASTM D2922                                                                                                          |
| 02/L24 | ASTM D2974                                                                                                          |
| 02/L25 | ASTM D3017                                                                                                          |
| 02/L27 | ASTM D4253                                                                                                          |
| 02/L29 | Corps of Engineers - Manual<br>EM-1110-2-1906, Appendix VII, Permeability<br>of Fine Grained Soils Using a Triaxial |

|        |            |
|--------|------------|
| 02/L31 | ASTM D2167 |
|--------|------------|

**Standard Practices**

|        |            |
|--------|------------|
| 02/A38 | ASTM E329  |
| 02/A39 | ASTM C1077 |

**Steel Materials**

|        |           |
|--------|-----------|
| 02/S07 | ASTM E709 |
| 02/S08 | ASTM E165 |

**NVLAP LAB CODE 100317-0****Fairfield Testing Laboratory, Inc.**

652 Glenbrook Road, P.O. 2310  
Stamford, CT 06906  
Contact: Mr. James E. Quill  
Phone: 203-372-1980  
Fax: 203-372-1898  
E-Mail: JQuill@aol.com

**Construction Materials Testing**

Accreditation Valid Through: March 31, 2001

**NVLAP**

|             |                    |
|-------------|--------------------|
| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|

**Concrete**

|        |                              |
|--------|------------------------------|
| 02/A01 | ASTM C39                     |
| 02/A02 | ASTM C617                    |
| 02/A43 | ASTM C1064                   |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173                    |

**Soil and Rock**

|        |            |
|--------|------------|
| 02/L02 | ASTM D422  |
| 02/L04 | ASTM D698  |
| 02/L08 | ASTM D1557 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |

**NVLAP LAB CODE 100320-0****Materials Testing, Inc.**

200 Rowe Avenue  
Milford, CT 06460  
Contact: Mr. Frank A. Soucy  
Phone: 203-878-2765  
Fax: 203-878-1504

**Construction Materials Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP**

|             |                    |
|-------------|--------------------|
| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|

**Aggregates**

|        |           |
|--------|-----------|
| 02/A03 | ASTM C29  |
| 02/A04 | ASTM C40  |
| 02/A06 | ASTM C88  |
| 02/A07 | ASTM C117 |
| 02/A08 | ASTM C123 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A46 | ASTM C535 |

**Cement**

|        |           |
|--------|-----------|
| 02/A17 | ASTM C109 |
|--------|-----------|

**Concrete**

|        |                              |
|--------|------------------------------|
| 02/A01 | ASTM C39                     |
| 02/A02 | ASTM C617                    |
| 02/A41 | ASTM C192                    |
| 02/A43 | ASTM C1064                   |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173                    |

**Soil and Rock**

|        |            |
|--------|------------|
| 02/L02 | ASTM D422  |
| 02/L04 | ASTM D698  |
| 02/L05 | ASTM D854  |
| 02/L06 | ASTM D1140 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L23 | ASTM D2922 |
| 02/L31 | ASTM D2167 |

**NVLAP LAB CODE 100322-0****CSA International**

178 Rexdale Boulevard  
Toronto Ontario M9W 1R3  
CANADA  
Contact: Mr. Otto C. Krepps, P.Eng  
Phone: 416-747-2798  
Fax: 416-747-4173  
E-Mail: otto.krepps@csa-international.org

**Commercial Products Testing**

Accreditation Valid Through: March 31, 2001

**NVLAP**

|             |                    |
|-------------|--------------------|
| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

### Plumbing

|         |                                                         |
|---------|---------------------------------------------------------|
| 19/F01  | ASME A112.18.1M (Sec. 5.2)                              |
| 19/F02  | ASME A112.18.1M (Sec. 5.14)                             |
| 19/F03  | ASME A112.18.1M (Sec. 6.2)                              |
| 19/F04  | ASME A112.18.1M (Sec. 6.4)                              |
| 19/F05  | ASME A112.18.1M (Sec. 6.5)                              |
| 19/F06  | ASME A112.18.1M (Sec. 6.6)                              |
| 19/F07  | ASME A112.18.1M (Sec. 6.7)                              |
| 19/F08  | ASME A112.18.1M (Sec. 6.8)                              |
| 19/F09  | ASME A112.18.1M (Sec. 5.13)                             |
| 19/F10  | ASME A112.18.1M (Sec. 6.3)                              |
| 19/M01  | ICC/ANSI A117.1 (Sec. 609, 610)                         |
| 19/M02  | ASME/ANSI A112.19.7M (Sec. 5, 7)                        |
| 19/M03  | ASME/ANSI A112.19.8M (Sec. 4, 5)                        |
| 19/M04  | ASTM F446                                               |
| 19/P01  | ANSI Z124.1 (Sec. 4, 5, 6)                              |
| 19/P02  | ANSI Z124.2 (Sec. 4, 5, 6)                              |
| 19/P03  | ANSI Z124.3 (Sec. 4, 5, 6)                              |
| 19/P03a | ICPA-SS-1 (Sec. 4, 5, 6)                                |
| 19/P04  | ANSI Z124.4 (Sec. 4, 5)                                 |
| 19/P05  | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1)     |
| 19/P06  | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6)                        |
| 19/P07  | ANSI/IAPMO Z124.8 (Sec. 4, 5)                           |
| 19/U01  | ASME/ANSI A112.18.3M (Sec. 5.1, 12.1, 12.2, 13, 14, 16) |
| 19/V01  | ASME A112.19.2M (Sec. 8.1)                              |
| 19/V02  | ASME A112.19.2M (Sec. 8.2)                              |
| 19/V03  | ASME A112.19.2M (Sec. 8.3)                              |
| 19/V04  | ASME A112.19.2M (Sec. 8.7)                              |
| 19/V05  | ASME A112.19.2M (Sec. 8.6)                              |
| 19/V06  | ASME A112.19.2M (Sec. 8.5)                              |
| 19/W01  | ASME A112.19.6 (Sec. 7.1.2)                             |
| 19/W02  | ASME A112.19.6 (Sec. 7.1.3)                             |
| 19/W03  | ASME A112.19.6 (Sec. 7.1.4)                             |
| 19/W04  | ASME A112.19.6 (Sec. 7.1.5)                             |
| 19/W05  | ASME A112.19.6 (Sec. 7.1.6)                             |
| 19/W06  | ASME A112.19.6 (Sec. 7.1.7)                             |
| 19/W07  | ASME A112.19.6 (Sec. 7.1.8)                             |
| 19/W08  | ASME A112.19.6 (Sec. 7.1.9)                             |

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital                                                                                                                                  |

### Devices

|                             |                                                     |
|-----------------------------|-----------------------------------------------------|
| 12/F01a                     | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b                     | Radiated Emissions                                  |
| 12/T51                      | AS/NZS 3548                                         |
| <b>Safety Test Methods:</b> |                                                     |
| 12/T41                      | ACA TS-001                                          |
| 12/T50                      | AS/NZS 3260                                         |

### NVLAP LAB CODE 100323-0

#### IBM Hudson Valley Acoustics Laboratory

Building 704, M/S P226  
522 South Road  
Poughkeepsie, NY 12601-5400  
Contact: Dr. Matthew A. Nobile  
Phone: 914-435-4959  
Fax: 914-432-9880  
E-Mail: nobile@us.ibm.com

#### Acoustical Testing Services

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

|        |             |
|--------|-------------|
| 08/P03 | ASTM C423   |
| 08/P10 | ANSI S12.31 |
| 08/P11 | ISO 3744    |
| 08/P13 | ANSI S12.32 |
| 08/P21 | ISO 3745    |
| 08/P24 | ANSI S12.10 |
| 08/P38 | ANSI S12.11 |
| 08/P39 | ANSI S12.5  |
| 08/P40 | ISO 9296    |
| 08/P41 | ECMA 74     |
| 08/P42 | ECMA 109    |
| 08/P44 | ISO 354     |
| 08/P46 | ISO 3741    |
| 08/P47 | ISO 3742    |
| 08/P48 | ISO 7779    |
| 08/P51 | ISO 6926    |
| 08/P56 | ANSI S12.35 |
| 08/P57 | ANSI S12.34 |

### NVLAP LAB CODE 100325-0

#### City of San Jose, Materials Testing Laboratory

Central Service Yard  
1661 Senter Road, Building A  
San Jose, CA 95112  
Contact: Mr. Pier L. Maggiani  
Phone: 408-998-6110  
Fax: 408-971-4883

#### Construction Materials Testing

Accreditation Valid Through: December 31, 2001

#### NVLAP

Code Designation

#### Aggregates

|        |          |
|--------|----------|
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

02/A07 ASTM C117  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A11 ASTM C131  
02/A12 ASTM C136  
02/A13 ASTM C142  
02/A15 ASTM D75  
02/A16 ASTM D2419  
02/A44 ASTM C566

**Cement**

02/A17 ASTM C109  
02/A22 ASTM C183  
02/A52 ASTM C1019

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A40 ASTM C78  
02/A41 ASTM C192  
02/A42 ASTM C360  
02/A43 ASTM C1064  
02/A45 ASTM C42  
02/G01 ASTM C31/C172/C143/C138/C231  
02/G02 ASTM C173

**Road and Paving Materials**

02/M01 ASTM D5  
02/M03 ASTM D140  
02/M05 ASTM D244  
02/M07 ASTM D546  
02/M08 ASTM D979  
02/M09 ASTM D1074  
02/M11 ASTM D1188  
02/M12 ASTM D1559  
02/M13 ASTM D1560  
02/M14 ASTM D1561  
02/M15 ASTM D1856  
02/M16 ASTM D2042  
02/M17 ASTM D2170  
02/M18 ASTM D2171  
02/M19 ASTM D2172  
02/M20 ASTM D2872  
02/M24 ASTM D2041  
02/M25 ASTM D2726

**Soil and Rock**

02/L02 ASTM D422  
02/L05 ASTM D854  
02/L06 ASTM D1140  
02/L08 ASTM D1557  
02/L12 ASTM D2168  
02/L13 ASTM D2216  
02/L14 ASTM D2217  
02/L16 ASTM D2487  
02/L20 ASTM D4318  
02/L23 ASTM D2922  
02/L25 ASTM D3017  
02/L47 ASTM D2844

**Standard Practices**

02/A38 ASTM E329  
02/A39 ASTM C1077  
02/L32 ASTM D3740  
02/M26 ASTM D3666

**NVLAP LAB CODE 100339-0****EMC Corporation**

4400 Computer Drive  
Westboro, MA 01580  
Contact: Mr. Joseph DeMonaco  
Phone: 508-898-6051  
Fax: 508-898-7729  
E-Mail: Demonaco\_Joe@emc.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100340-0****Fairway Testing Company, Inc.**

Smith Street  
P.O. Box 578  
Stony Point, NY 10980  
Contact: Mr. Patsy J. Aguanno  
Phone: 914-942-2088  
Fax: 914-942-0995

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code Designation

**Aggregates**

02/A03 ASTM C29  
02/A04 ASTM C40  
02/A06 ASTM C88  
02/A07 ASTM C117  
02/A08 ASTM C123  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A12 ASTM C136

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|                                  |                                                                                                                                  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 02/A13                           | ASTM C142                                                                                                                        |
| 02/A15                           | ASTM D75                                                                                                                         |
| 02/A16                           | ASTM D2419                                                                                                                       |
| 02/A44                           | ASTM C566                                                                                                                        |
| <b>Concrete</b>                  |                                                                                                                                  |
| 02/A01                           | ASTM C39                                                                                                                         |
| 02/A02                           | ASTM C617                                                                                                                        |
| 02/A40                           | ASTM C78                                                                                                                         |
| 02/A41                           | ASTM C192                                                                                                                        |
| 02/A43                           | ASTM C1064                                                                                                                       |
| 02/G01                           | ASTM C31/C172/C143/C138/C231                                                                                                     |
| 02/G02                           | ASTM C173                                                                                                                        |
| <b>Road and Paving Materials</b> |                                                                                                                                  |
| 02/M01                           | ASTM D5                                                                                                                          |
| 02/M07                           | ASTM D546                                                                                                                        |
| 02/M08                           | ASTM D979                                                                                                                        |
| 02/M11                           | ASTM D1188                                                                                                                       |
| 02/M12                           | ASTM D1559                                                                                                                       |
| 02/M15                           | ASTM D1856                                                                                                                       |
| 02/M19                           | ASTM D2172                                                                                                                       |
| 02/M24                           | ASTM D2041                                                                                                                       |
| 02/M25                           | ASTM D2726                                                                                                                       |
| <b>Soil and Rock</b>             |                                                                                                                                  |
| 02/L01                           | ASTM D4220                                                                                                                       |
| 02/L02                           | ASTM D422                                                                                                                        |
| 02/L04                           | ASTM D698                                                                                                                        |
| 02/L05                           | ASTM D854                                                                                                                        |
| 02/L06                           | ASTM D1140                                                                                                                       |
| 02/L07                           | ASTM D1556                                                                                                                       |
| 02/L08                           | ASTM D1557                                                                                                                       |
| 02/L13                           | ASTM D2216                                                                                                                       |
| 02/L16                           | ASTM D2487                                                                                                                       |
| 02/L17                           | ASTM D2488                                                                                                                       |
| 02/L20                           | ASTM D4318                                                                                                                       |
| 02/L21                           | ASTM D2434                                                                                                                       |
| 02/L23                           | ASTM D2922                                                                                                                       |
| 02/L25                           | ASTM D3017                                                                                                                       |
| 02/L29                           | Corps of Engineers - Manual<br>EM-1110-2-1906, Appendix VII, Permeability<br>of Fine Grained Soils Using a Triaxial<br>Apparatus |
| <b>Standard Practices</b>        |                                                                                                                                  |
| 02/A38                           | ASTM E329                                                                                                                        |
| 02/A39                           | ASTM C1077                                                                                                                       |
| 02/L32                           | ASTM D3740                                                                                                                       |
| 02/M26                           | ASTM D3666                                                                                                                       |
| <b>Steel Materials</b>           |                                                                                                                                  |
| 02/S02                           | ASTM A370 (Sec. 14)/E190                                                                                                         |
| 02/S07                           | ASTM E709                                                                                                                        |
| 02/S08                           | ASTM E165                                                                                                                        |

## NVLAP LAB CODE 100347-0

### National Technical Systems

1146 Massachusetts Avenue

Boxborough, MA 01719

Contact: Mr. James Press

Phone: 978-266-1001

Fax: 978-266-1073

E-Mail: [jimp@ntscorp.com](mailto:jimp@ntscorp.com)

URL: <http://www.ntscorp.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### MIL-STD-462 : Conducted Emissions:

12/A01 MIL-STD-462 Method CE01

12/A04 MIL-STD-462 Method CE02

12/A06 MIL-STD-462 Method CE03

12/A08 MIL-STD-462 Method CE04

12/A12 MIL-STD-462 Method CE07

#### MIL-STD-462 : Conducted Susceptibility:

12/B01 MIL-STD-462 Method CS01

12/B02 MIL-STD-462 Method CS02

12/B05 MIL-STD-462 Method CS06

12/B07 MIL-STD-462 Method CS09

#### MIL-STD-462 : Radiated Emissions:

12/D01 MIL-STD-462 Method RE01

12/D02 MIL-STD-462 Method RE02

#### MIL-STD-462 : Radiated Susceptibility:

12/E01 MIL-STD-462 Method RS01

12/E02 MIL-STD-462 Method RS02

12/E03 MIL-STD-462 Method RS03 (Consult

laboratory for field strengths available)

12/E04 MIL-STD-462 Method RS03 employing

RADHAZ procedures for high level testing

(Consult laboratory for field strengths

available)

12/E07 MIL-STD-462 Method RS06

## NVLAP LAB CODE 100351-0

### KTL Ottawa Inc.

3325 River Road, R.R. No. 5

Ottawa Ontario K1V 1H2

CANADA

Contact: Mr. Marc Beisheim

Phone: 613-737-9680

Fax: 613-737-9691

E-Mail: [mbeisheim@ktlcanada.com](mailto:mbeisheim@ktlcanada.com)

URL: <http://www.ktl.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|                                         |                                                                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.                                                                                                              |
| 12/CIS22b                               | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                                                                                                |
| 12/F01                                  | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                                                                                              |
| 12/F01a                                 | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                                                                                        |
| 12/F01b                                 | Radiated Emissions                                                                                                                                                                                                                         |
| 12/T51                                  | AS/NZS 3548                                                                                                                                                                                                                                |
| <b>Immunity Test Methods:</b>           |                                                                                                                                                                                                                                            |
| 12/I01                                  | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                                                                                                                                                         |
| 12/I02                                  | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test                                                                                                                                 |
| 12/I03                                  | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                                                                                                                                                        |
| 12/I04                                  | IEC 61000-4-5 (1995): Surge Immunity Test                                                                                                                                                                                                  |
| 12/I05                                  | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                                                                                                                                                   |
| 12/I06                                  | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                                                                                                                                                         |
| 12/I07                                  | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests                                                                                                                                             |
| <b>Safety Test Methods:</b>             |                                                                                                                                                                                                                                            |
| 12/T41                                  | ACA TS-001                                                                                                                                                                                                                                 |
| 12/T50                                  | AS/NZS 3260                                                                                                                                                                                                                                |
| <b>Telecommunications Test Methods:</b> |                                                                                                                                                                                                                                            |
| 12/CS03                                 | CS-03                                                                                                                                                                                                                                      |
| 12/T01                                  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a                                 | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b                                 | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c                                 | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |
| 12/T42                                  | ACA TS-002                                                                                                                                                                                                                                 |
| 12/T43                                  | ACA TS-003                                                                                                                                                                                                                                 |
| 12/T44                                  | ACA TS-004                                                                                                                                                                                                                                 |
| 12/T45                                  | ACA TS-006                                                                                                                                                                                                                                 |
| 12/T49                                  | ACA TS-016                                                                                                                                                                                                                                 |

**NVLAP LAB CODE 100374-0****Aearo Company, E-ARCAL Acoustical Laboratory**

7911 Zionsville Road  
Indianapolis, IN 46268-1657  
Contact: Mr. Elliott H. Berger  
Phone: 317-692-3031  
Fax: 317-692-3116  
E-Mail: eberger@compuserve.com  
URL: <http://www.e-a-r.com>

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

|        |                              |
|--------|------------------------------|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
|--------|------------------------------|

|        |            |
|--------|------------|
| 08/P27 | ANSI S12.6 |
|--------|------------|

**NVLAP LAB CODE 100382-0****Eaton E3 Laboratory**

26201 Northwestern Highway  
P.O. Box 766  
Southfield, MI 48037-0766  
Contact: Mr. Kimball Williams  
Phone: 248-354-2845  
Fax: 248-208-2018  
E-Mail: k.williams@ieee.org  
URL: <http://www.eaton.com/emc>

**Electromagnetic Compatibility & Telecommunications**

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**NVLAP**

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|------|-------------|

**MIL-STD-462 : Conducted Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |

**MIL-STD-462 : Conducted Susceptibility:**

|        |                                    |
|--------|------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01            |
| 12/B02 | MIL-STD-462 Method CS02            |
| 12/B05 | MIL-STD-462 Method CS06            |
| 12/B07 | MIL-STD-462 Method CS09            |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |

**MIL-STD-462 : Radiated Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |

**MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                    |
| 12/E02 | MIL-STD-462 Method RS02                                                    |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing                                          |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|        |                                                                                                   |
|--------|---------------------------------------------------------------------------------------------------|
|        | RADHAZ procedures for high level testing<br>(Consult laboratory for field strengths<br>available) |
| 12/E07 | MIL-STD-462 Method RS06                                                                           |
| 12/E08 | MIL-STD-462 Version D Method RS101                                                                |
| 12/E09 | MIL-STD-462 Version D Method RS103                                                                |

**NVLAP LAB CODE 100396-0****Criterion Technology Corp.**

1350 County Road 16  
P.O. Box 387  
Rollinsville, CO 80474  
Contact: Mr. Michael E. Mussler  
Phone: 303-258-0100  
Fax: 303-258-0775  
E-Mail: mmussler@criteriontech.com  
URL: www.criteriontech.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 100398-0****GE Lighting- Product Testing**

1975 Noble Road  
Nela Park  
Cleveland, OH 44112-6300  
Contact: Mr. Lawrence Mead  
Phone: 216-266-5520  
Fax: 216-266-3503  
E-Mail: lawrence.mead@lighting.ge.com

**Energy Efficient Lighting Products**

Accreditation Valid Through: March 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Color Measurements**

|        |           |
|--------|-----------|
| 22/C01 | IES LM-58 |
|--------|-----------|

**Electrical Measurements**

|        |              |
|--------|--------------|
| 22/E01 | IES LM-9     |
| 22/E02 | IES LM-45    |
| 22/E03 | IES LM-51    |
| 22/E04 | IES LM-66    |
| 22/E05 | ANSI-C78.375 |

**Life Tests**

|        |           |
|--------|-----------|
| 22/L01 | IES LM-40 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |

**Photometric Measurements**

|         |                        |
|---------|------------------------|
| 22/P01a | IES LM-9 (Total Flux)  |
| 22/P01b | IES LM-9 (Intensity)   |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity)  |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity)  |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity)  |

**NVLAP LAB CODE 100399-0****Philips Lighting Corporate Calibration & Standards Laboratory**

Route 3, P.O. Box 505, Houlst Road  
Fairmont, WV 26554-9484  
Contact: Dr. Ronald Gibbons  
Phone: 304-367-7608  
Fax: 304-367-7602  
E-Mail: ronald.b.gibbons@philips.com

**Energy Efficient Lighting Products**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Color Measurements**

|        |           |
|--------|-----------|
| 22/C01 | IES LM-58 |
|--------|-----------|

**Electrical Measurements**

|        |              |
|--------|--------------|
| 22/E01 | IES LM-9     |
| 22/E02 | IES LM-45    |
| 22/E03 | IES LM-51    |
| 22/E04 | IES LM-66    |
| 22/E05 | ANSI-C78.375 |

**Life Tests**

|        |           |
|--------|-----------|
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |

**Photometric Measurements**

|         |                        |
|---------|------------------------|
| 22/P01a | IES LM-9 (Total Flux)  |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity)  |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity)  |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P04b | IES LM-51 (Intensity)  |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity)  |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 100402-0****Intertek Testing Services NA Inc.**

3933 U.S. Route 11  
Cortland, NY 13045-0950  
Contact: Mr. John Sabelli  
Phone: 607-758-6382  
Fax: 607-753-0439  
E-Mail: jsabelli@itsqs.com  
URL: <http://www.worldlab.com>

**Energy Efficient Lighting Products**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Color Measurements**

|        |           |
|--------|-----------|
| 22/C01 | IES LM-58 |
|--------|-----------|

**Electrical Measurements**

|        |              |
|--------|--------------|
| 22/E01 | IES LM-9     |
| 22/E02 | IES LM-45    |
| 22/E03 | IES LM-51    |
| 22/E04 | IES LM-66    |
| 22/E05 | ANSI-C78.375 |
| 22/E06 | ANSI-C78.386 |
| 22/E07 | ANSI-C78.387 |
| 22/E08 | ANSI-C78.388 |

**Life Tests**

|        |           |
|--------|-----------|
| 22/L01 | IES LM-40 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |

**Photometric Measurements**

|         |                        |
|---------|------------------------|
| 22/P01a | IES LM-9 (Total Flux)  |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity)  |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity)  |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity)  |

**NVLAP LAB CODE 100403-0****OSRAM SYLVANIA, Test & Measurements****Laboratory**

71 Cherry Hill Dr.  
Beverly, MA 01915  
Contact: Dr. Ronald O. Daubach  
Phone: 508-750-1593  
Fax: 508-750-1794  
E-Mail: [ronald.daubach@sylvania.com](mailto:ronald.daubach@sylvania.com)

**Energy Efficient Lighting Products**

Accreditation Valid Through: June 30, 2001

**NVLAP**

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|------|-------------|
|------|-------------|

**Color Measurements**

|        |           |
|--------|-----------|
| 22/C01 | IES LM-58 |
|--------|-----------|

**Electrical Measurements**

|        |           |
|--------|-----------|
| 22/E01 | IES LM-9  |
| 22/E02 | IES LM-45 |
| 22/E03 | IES LM-51 |

|        |              |
|--------|--------------|
| 22/E04 | IES LM-66    |
| 22/E05 | ANSI-C78.375 |
| 22/E06 | ANSI-C78.386 |
| 22/E07 | ANSI-C78.387 |
| 22/E08 | ANSI-C78.388 |

**Life Tests**

|        |           |
|--------|-----------|
| 22/L01 | IES LM-40 |
| 22/L02 | IES LM-47 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |

**Photometric Measurements**

|         |                        |
|---------|------------------------|
| 22/P01a | IES LM-9 (Total Flux)  |
| 22/P01b | IES LM-9 (Intensity)   |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity)  |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity)  |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P04b | IES LM-51 (Intensity)  |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity)  |

**NVLAP LAB CODE 100404-0****Industrial Acoustics Company, Inc.,****Aero-Acoustics Laboratory**

1160 Commerce Avenue  
Bronx, NY 10462  
Contact: Mr. Jon Weinstein  
Phone: 718-931-8000  
Fax: 718-863-1138  
E-Mail: [jonw@industrialacoustics.com](mailto:jonw@industrialacoustics.com)  
URL: <http://www.industrialacoustics.com>

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

**NVLAP**

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|        |                 |
|--------|-----------------|
| 08/P02 | ASTM C384       |
| 08/P03 | ASTM C423       |
| 08/P04 | ASTM C522       |
| 08/P06 | ASTM E90        |
| 08/P08 | ASTM E596       |
| 08/P30 | ASTM E1408      |
| 08/P36 | ASTM E477       |
| 08/P44 | ISO 354         |
| 08/P45 | ISO 140, Part 3 |

**NVLAP LAB CODE 100405-0****Motorola SSG EMC/TEMPEST Laboratory**

8201 E. McDowell Road  
Scottsdale, AZ 85252  
Contact: Mr. Dwayne R. Awerkamp  
Phone: 480-441-3138  
Fax: 480-441-3625  
E-Mail: [p09969@email.mot.com](mailto:p09969@email.mot.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

### *Emission Test Methods:*

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

### *MIL-STD-462 : Conducted Emissions:*

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

### *MIL-STD-462 : Conducted Susceptibility:*

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B06 | MIL-STD-462 Method CS07                |
| 12/B07 | MIL-STD-462 Method CS09                |
| 12/B08 | MIL-STD-462 Method CS10                |
| 12/B09 | MIL-STD-462 Method CS11                |
| 12/B10 | MIL-STD-462 Method CS12                |
| 12/B11 | MIL-STD-462 Method CS13                |
| 12/B12 | MIL-STD-462 Version D Method CS101     |
| 12/B13 | MIL-STD-462 Version D Method CS103     |
| 12/B14 | MIL-STD-462 Version D Method CS104     |
| 12/B15 | MIL-STD-462 Version D Method CS105     |
| 12/B16 | MIL-STD-462 Version D Method CS109     |
| 12/B17 | MIL-STD-462 Version D Method CS114     |
| 12/B19 | MIL-STD-462 Version D Method CS116     |

### *MIL-STD-462 : Radiated Emissions:*

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D03 | MIL-STD-462 Method RE03            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

### *MIL-STD-462 : Radiated Susceptibility:*

|        |                         |
|--------|-------------------------|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |

|        |                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)                                                    |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05                                                                                                       |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                       |
| 12/E08 | MIL-STD-462 Version D Method RS101                                                                                            |
| 12/E09 | MIL-STD-462 Version D Method RS103                                                                                            |
| 12/E10 | MIL-STD-462 Version D Method RS105                                                                                            |

### NVLAP LAB CODE 100406-0

#### **Inland Foundation Engineering, Inc.**

1310 South Santa Fe Avenue  
P.O. Box 937  
San Jacinto, CA 92581-0937  
Contact: Mr. Donald O. Swenson  
Phone: 909-654-1555  
Fax: 909-654-0551

#### **Construction Materials Testing**

Accreditation Valid Through: March 31, 2001

#### *NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

#### *Aggregates*

|        |            |
|--------|------------|
| 02/A04 | ASTM C40   |
| 02/A06 | ASTM C88   |
| 02/A07 | ASTM C117  |
| 02/A08 | ASTM C123  |
| 02/A09 | ASTM C127  |
| 02/A10 | ASTM C128  |
| 02/A11 | ASTM C131  |
| 02/A12 | ASTM C136  |
| 02/A13 | ASTM C142  |
| 02/A15 | ASTM D75   |
| 02/A16 | ASTM D2419 |
| 02/A44 | ASTM C566  |
| 02/A46 | ASTM C535  |

#### *Concrete*

|        |                              |
|--------|------------------------------|
| 02/A01 | ASTM C39                     |
| 02/A02 | ASTM C617                    |
| 02/A41 | ASTM C192                    |
| 02/A43 | ASTM C1064                   |
| 02/A45 | ASTM C42                     |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |

#### *Road and Paving Materials*

|        |            |
|--------|------------|
| 02/M03 | ASTM D140  |
| 02/M07 | ASTM D546  |
| 02/M08 | ASTM D979  |
| 02/M11 | ASTM D1188 |
| 02/M12 | ASTM D1559 |
| 02/M14 | ASTM D1561 |
| 02/M19 | ASTM D2172 |
| 02/M24 | ASTM D2041 |

#### *Soil and Rock*

|        |            |
|--------|------------|
| 02/L01 | ASTM D4220 |
| 02/L02 | ASTM D422  |
| 02/L04 | ASTM D698  |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

02/L05 ASTM D854  
02/L06 ASTM D1140  
02/L07 ASTM D1556  
02/L08 ASTM D1557  
02/L13 ASTM D2216  
02/L16 ASTM D2487  
02/L17 ASTM D2488  
02/L18 ASTM D3080  
02/L20 ASTM D4318  
02/L21 ASTM D2434  
02/L22 ASTM D2850  
02/L23 ASTM D2922  
02/L25 ASTM D3017  
02/L47 ASTM D2844

**Standard Practices**

02/A38 ASTM E329  
02/A39 ASTM C1077  
02/L32 ASTM D3740  
02/M26 ASTM D3666

**NVLAP LAB CODE 100408-0****NAWC AD 5.1.7.2. EMI Lab**

48298 Shaw Road, Unit 4, Bldg. 1461  
Patuxent River, MD 20670-1900  
Contact: Mr. Robert Smith  
Phone: 301-342-0851  
Fax: 301-342-5390  
E-Mail: smithRB@navair.navy.mil

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**MIL-STD-462 : Conducted Emissions:**

12/A01 MIL-STD-462 Method CE01  
12/A04 MIL-STD-462 Method CE02  
12/A06 MIL-STD-462 Method CE03  
12/A08 MIL-STD-462 Method CE04  
12/A10 MIL-STD-462 Method CE06  
12/A13 MIL-STD-462 Version D Method CE101  
12/A14 MIL-STD-462 Version D Method CE102  
12/A15 MIL-STD-462 Version D Method CE106

**MIL-STD-462 : Conducted Susceptibility:**

12/B01 MIL-STD-462 Method CS01  
12/B02 MIL-STD-462 Method CS02  
12/B04 MIL-STD-462 Method  
CS03/CS04/CS05/CS08  
12/B05 MIL-STD-462 Method CS06  
12/B08 MIL-STD-462 Method CS10  
12/B09 MIL-STD-462 Method CS11  
12/B13 MIL-STD-462 Version D Method CS103  
12/B14 MIL-STD-462 Version D Method CS104  
12/B15 MIL-STD-462 Version D Method CS105  
12/B17 MIL-STD-462 Version D Method CS114  
12/B18 MIL-STD-462 Version D Method CS115  
12/B19 MIL-STD-462 Version D Method CS116

**MIL-STD-462 : Radiated Emissions:**

12/D01 MIL-STD-462 Method RE01  
12/D02 MIL-STD-462 Method RE02  
12/D03 MIL-STD-462 Method RE03

12/D04 MIL-STD-462 Version D Method RE101  
12/D05 MIL-STD-462 Version D Method RE102  
12/D06 MIL-STD-462 Version D Method RE103  
**MIL-STD-462 : Radiated Susceptibility:**  
12/E01 MIL-STD-462 Method RS01  
12/E02 MIL-STD-462 Method RS02  
12/E03 MIL-STD-462 Method RS03 (Consult  
laboratory for field strengths available)  
12/E04 MIL-STD-462 Method RS03 employing  
RADHAZ procedures for high level testing  
(Consult laboratory for field strengths  
available)  
12/E08 MIL-STD-462 Version D Method RS101  
12/E09 MIL-STD-462 Version D Method RS103

**NVLAP LAB CODE 100409-0****Intertek Testing Services NA Inc.**

1950 Evergreen Boulevard, Suite 100  
Duluth, GA 30096  
Contact: Mr. David C. Dennis  
Phone: 678-775-2400  
Fax: 678-775-2401  
E-Mail: ddennis@itsqs.com  
URL: <http://www.worldlab.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment, Amendment 1:1995, and  
Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of  
Measurement of Radio Interference  
Characteristics of Information Technology  
Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**Safety Test Methods:**

12/T41 ACA TS-001  
12/T50 AS/NZS 3260

**Telecommunications Test Methods:**

12/CS03 CS-03  
12/T01 Terminal Equipment Network Protection  
Standards, FCC Method - 47 CFR Part 68 -  
Analog and Digital  
12/T01a 68.302 (Par. e,d,e,f) Environmental simulation;  
68.304 Leakage current limit.; 68.306

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|         |                                                                                                                                                      |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                           |
| 12/T46  | ACA TS-008                                                                                                                                           |

**NVLAP LAB CODE 100411-0****Sanmina Homologation Services**

4401 Great America Parkway, M/S 01-02

Santa Clara, CA 95054

Contact: Mr. John Shinn, P.E.

Phone: 408-495-2046

Fax: 408-495-1297

E-Mail: jshinn@nortelnetworks.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**Safety Test Methods:**

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

**Telecommunications Test Methods:**

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical                                                                                                                                                                                                |

|         |                                            |
|---------|--------------------------------------------|
|         | standards                                  |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42  | ACA TS-002                                 |
| 12/T43  | ACA TS-003                                 |
| 12/T44  | ACA TS-004                                 |
| 12/T45  | ACA TS-006                                 |
| 12/T49  | ACA TS-016                                 |

**NVLAP LAB CODE 100413-0****Compaq Regulatory Compliance Engineering - East**

200 Forest Street, Mail Stop MRO1-D

Marlboro, MA 01752-3085

Contact: Ms. Diana Montvitt-Jones

Phone: 508-467-2851

Fax: 508-467-2846

E-Mail: diana.montvitt@compaq.com

**Electromagnetic Compatibility & Telecommunications**

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**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 100414-0****Underwriters Laboratories Inc.**

333 Pfingsten Road

Northbrook, IL 60062-2096

Contact: Mr. Rick A. Titus

Phone: 847-272-8800 x43281

Fax: 847-509-6321

E-Mail: Rick.A.Titus@us.ul.com

URL: <http://www.ul.com>**Electromagnetic Compatibility & Telecommunications**

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of                                                                                                                                  |



|         |                                           |
|---------|-------------------------------------------|
|         | Measurement of Radio Interference         |
|         | Characteristics of Information Technology |
|         | Equipment                                 |
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital     |
|         | Devices                                   |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz |
|         | to 30 MHz                                 |
| 12/F01b | Radiated Emissions                        |
| 12/T51  | AS/NZS 3548                               |

**Immunity Test Methods:**

|        |                                               |
|--------|-----------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1          |
|        | (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1          |
|        | (1998): Radiated, Radio-Frequency             |
|        | Electromagnetic Field Immunity Test           |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast         |
|        | Transient/Burst Immunity Test                 |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test     |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to             |
|        | Conducted Disturbances, Induced               |
|        | Radio-Frequency Fields                        |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency         |
|        | Magnetic Field Immunity Test                  |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short    |
|        | Interruptions and Voltage Variations Immunity |
|        | Tests                                         |

**Safety Test Methods:**

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

NVLAP

|      |             |
|------|-------------|
| Code | Designation |
|------|-------------|

**Corrosiveness**

|        |                    |
|--------|--------------------|
| 01/C01 | ASTM C739 (Sec. 9) |
| 01/C02 | 16 CFR-Part 1209.5 |

**Flammability**

|        |                                  |
|--------|----------------------------------|
| 01/F02 | ASTM E84                         |
| 01/F07 | 16 CFR-Part 1209.6               |
| 01/F08 | 16 CFR-Part 1209.7               |
| 01/F09 | ASTM C739 (Sec. 10) by ASTM E970 |
| 01/F10 | ASTM C739 (Sec. 14)              |

**Mass, Density, and Dimensional Stability**

|        |                     |
|--------|---------------------|
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4  |
| 01/D27 | ASTM C739 (Sec. 8)  |

**Related Material Properties**

|        |                     |
|--------|---------------------|
| 01/V05 | ASTM C739 (Sec. 11) |
|--------|---------------------|

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T06 | ASTM C518 |
| 01/T10 | ASTM C687 |

NVLAP LAB CODE 100416-0

**SGS U.S. Testing Company, Inc.**

1341 North 108th East Avenue  
 Tulsa, OK 74116-5637  
 Contact: Mr. Dale E. Holloway  
 Phone: 918-437-8333  
 Fax: 918-437-8487  
 E-Mail: dale\_holloway@sgsgroup.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

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|      |             |
|------|-------------|
| Code | Designation |
|------|-------------|

**Corrosiveness**

|        |                    |
|--------|--------------------|
| 01/C01 | ASTM C739 (Sec. 9) |
| 01/C02 | 16 CFR-Part 1209.5 |

**Flammability**

|        |                     |
|--------|---------------------|
| 01/F08 | 16 CFR-Part 1209.7  |
| 01/F10 | ASTM C739 (Sec. 14) |

**Mass, Density, and Dimensional Stability**

|        |                     |
|--------|---------------------|
| 01/D02 | ASTM C167           |
| 01/D18 | ASTM D1622          |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4  |
| 01/D27 | ASTM C739 (Sec. 8)  |

**Related Material Properties**

|        |                     |
|--------|---------------------|
| 01/V04 | ASTM E96            |
| 01/V05 | ASTM C739 (Sec. 11) |
| 01/V06 | ASTM C739 (Sec. 15) |

**Commercial Products Testing**

Accreditation Valid Through: December 31, 2001

NVLAP

|      |             |
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|------|-------------|

**Plumbing**

|        |                                          |
|--------|------------------------------------------|
| 19/F01 | ASME A112.18.1M (Sec. 5.2)               |
| 19/F02 | ASME A112.18.1M (Sec. 5.14)              |
| 19/F03 | ASME A112.18.1M (Sec. 6.2)               |
| 19/F04 | ASME A112.18.1M (Sec. 6.4)               |
| 19/F05 | ASME A112.18.1M (Sec. 6.5)               |
| 19/F06 | ASME A112.18.1M (Sec. 6.6)               |
| 19/F07 | ASME A112.18.1M (Sec. 6.7)               |
| 19/F08 | ASME A112.18.1M (Sec. 6.8)               |
| 19/F09 | ASME A112.18.1M (Sec. 5.13)              |
| 19/F10 | ASME A112.18.1M (Sec. 6.3)               |
| 19/M01 | ICC/ANSI A117.1 (Sec. 609, 610)          |
| 19/M02 | ASME/ANSI A112.19.7M (Sec. 5, 7)         |
| 19/M03 | ASME/ANSI A112.19.8M (Sec. 4, 5)         |
| 19/M04 | ASTM F446                                |
| 19/M05 | ASTM F462                                |
| 19/P01 | ANSI Z124.1 (Sec. 4, 5, 6)               |
| 19/P02 | ANSI Z124.2 (Sec. 4, 5, 6)               |
| 19/P03 | ANSI Z124.3 (Sec. 4, 5, 6)               |
| 19/P04 | ANSI Z124.4 (Sec. 4, 5)                  |
| 19/P05 | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M |
|        | (Sec. 7.1)                               |
| 19/P06 | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6)         |
| 19/P07 | ANSI/IAPMO Z124.8 (Sec. 4, 5)            |
| 19/V01 | ASME A112.19.2M (Sec. 8.1)               |

|        |                             |
|--------|-----------------------------|
| 19/V02 | ASME A112.19.2M (Sec. 8.2)  |
| 19/V03 | ASME A112.19.2M (Sec. 8.3)  |
| 19/V04 | ASME A112.19.2M (Sec. 8.7)  |
| 19/V05 | ASME A112.19.2M (Sec. 8.6)  |
| 19/V06 | ASME A112.19.2M (Sec. 8.5)  |
| 19/W01 | ASME A112.19.6 (Sec. 7.1.2) |
| 19/W02 | ASME A112.19.6 (Sec. 7.1.3) |
| 19/W03 | ASME A112.19.6 (Sec. 7.1.4) |
| 19/W04 | ASME A112.19.6 (Sec. 7.1.5) |
| 19/W05 | ASME A112.19.6 (Sec. 7.1.6) |
| 19/W06 | ASME A112.19.6 (Sec. 7.1.7) |
| 19/W07 | ASME A112.19.6 (Sec. 7.1.8) |
| 19/W08 | ASME A112.19.6 (Sec. 7.1.9) |

**NVLAP LAB CODE 100417-0**

**Celotex Technical Center**

10301 Ninth Street North  
St. Petersburg, FL 33716-1514  
Contact: Dr. Stanley R. Prince  
Phone: 727-563-5159  
Fax: 727-563-5218  
E-Mail: sprince@celotex.com  
URL: <http://www.celotex.com>

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

**NVLAP**

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| <i>Code</i> | <i>Designation</i> |
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**Flammability**

|        |          |
|--------|----------|
| 01/F02 | ASTM E84 |
|--------|----------|

**Mass, Density, and Dimensional Stability**

|        |                                                      |
|--------|------------------------------------------------------|
| 01/D03 | ASTM C209 (Sec. 7)                                   |
| 01/D04 | ASTM C209 (Sec. 14, 2 hour)                          |
| 01/D05 | ASTM C209 (Sec. 14, 24 hour) by D1037 (Sec. 100-106) |
| 01/D06 | ASTM C209 (Sec. 15) by D1037 (Sec. 107-110)          |
| 01/D07 | ASTM C272                                            |
| 01/D18 | ASTM D1622                                           |
| 01/D19 | ASTM D2126                                           |
| 01/D23 | ASTM D2842                                           |

**Related Material Properties**

|        |          |
|--------|----------|
| 01/V04 | ASTM E96 |
|--------|----------|

**Strength**

|         |                                            |
|---------|--------------------------------------------|
| 01/S01a | ASTM C165 (Proc. A)                        |
| 01/S02  | ASTM C203                                  |
| 01/S03  | ASTM C209 (Sec. 10)                        |
| 01/S04  | ASTM C209 (Sec. 11)                        |
| 01/S05  | ASTM C209 (Sec. 12)                        |
| 01/S06  | ASTM C209 (Sec. 13)                        |
| 01/S07  | ASTM C273                                  |
| 01/S10  | ASTM D828                                  |
| 01/S11  | ASTM D1621 (Proc. A of ASTM Practice D618) |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T04 | ASTM C236 |
| 01/T06 | ASTM C518 |

**NVLAP LAB CODE 100418-0**

**Composite Panel Association (CPA)**

18928 Premiere Court  
Gaithersburg, MD 20879-1569  
Contact: Mr. Gary Heroux  
Phone: 301-670-0604  
Fax: 301-840-1252  
E-Mail: gheroux@cpamail.org

**Wood Based Products**

Accreditation Valid Through: September 30, 2001

**NVLAP**

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**General Wood Products**

|        |                                 |
|--------|---------------------------------|
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20) |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33) |

**Particleboard and Medium-Density Fiberboard**

|        |                                   |
|--------|-----------------------------------|
| 23/P02 | ASTM D1037 (Part A, Sec. 61-67)   |
| 23/P03 | ASTM D1037 (Part A, Sec. 68-73)   |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4)          |
| 23/T01 | ASTM E1333                        |
| 23/T03 | EN 120:92                         |
| 23/T04 | ASTM D5582                        |
| 23/T05 | ASTM D6007                        |

**NVLAP LAB CODE 100419-0**

**Test Site Services, Inc.**

P.O. Box 766  
Marlboro, MA 01752  
Contact: Mr. Richard L. Wiedeman  
Phone: 508-481-1684  
Fax: 508-481-1684  
E-Mail: slp@ma.ultranet.com  
URL: <http://testsiteservices.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|         |                                                        |
|---------|--------------------------------------------------------|
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz |
| 12/F01b | Radiated Emissions                                     |
| 12/T51  | AS/NZS 3548                                            |

**NVLAP LAB CODE 100420-0****Timberco, Inc.- dba TECO**

86305 College View Road  
Eugene, OR 97405-9631  
Contact: Mr. Darin Thompson  
Phone: 541-746-8271  
Fax: 541-747-1630  
E-Mail: dthompson@pfs-teco.com

**Wood Based Products**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**General Wood Products**

|        |                                      |
|--------|--------------------------------------|
| 23/G01 | ASTM D906 (CSA 0112.0-M Series 1977) |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20)      |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33)      |
| 23/G04 | ASTM D2395 (Method A)                |
| 23/G05 | ASTM D2718                           |
| 23/G07 | ASTM D3043 (Method C)                |
| 23/G08 | ASTM D4442 (Method A)                |
| 23/G09 | ASTM D4442 (Method B)                |
| 23/G10 | ASTM E72 (Sec. 14)                   |
| 23/G11 | ASTM E72 (Sec. 15)                   |
| 23/G12 | ASTM E564                            |

**Hardwood Plywood**

|        |                 |
|--------|-----------------|
| 23/H01 | HP-1 (Sec. 4.3) |
| 23/H02 | HP-1 (Sec. 4.4) |
| 23/H03 | HP-1 (Sec. 4.6) |
| 23/H04 | ASTM E96        |

**Particleboard and Medium-Density Fiberboard**

|        |                                   |
|--------|-----------------------------------|
| 23/P01 | ASTM D1037 (Part A, Sec. 21-27)   |
| 23/P02 | ASTM D1037 (Part A, Sec. 61-67)   |
| 23/P03 | ASTM D1037 (Part A, Sec. 68-73)   |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P07 | ASTM D1037 (Part A, Sec. 118-124) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4)          |
| 23/T01 | ASTM E1333                        |
| 23/T02 | FTM 1-83                          |
| 23/T04 | ASTM D5582                        |

**Structural Composite Lumber, Glulam, I-Joists,****Laminated Veneer Lumber**

|        |                                                         |
|--------|---------------------------------------------------------|
| 23/J01 | ASTM D143 (Sec. 8)                                      |
| 23/J02 | ASTM D143 (Sec. 14)                                     |
| 23/J04 | ASTM D198 (Sec. 4-11)                                   |
| 23/J06 | ASTM D905 (CSA 0112.0-M Series 1977)                    |
| 23/J07 | ASTM D1037 (Part A, Sec. 87-90)                         |
| 23/J08 | ASTM D1101                                              |
| 23/J09 | ASTM D1761 (Sec. 1-11)                                  |
| 23/J10 | ASTM D2559 (Shear)                                      |
| 23/J11 | ASTM D2559 (Delamination) (CSA 0112.0-M<br>Series 1977) |
| 23/J12 | ASTM D4688                                              |

|        |                                       |
|--------|---------------------------------------|
| 23/J13 | AITC 200 (T106)                       |
| 23/J14 | AITC 200 (T107)                       |
| 23/J15 | AITC 200 (T110)                       |
| 23/J16 | AITC 200 (T114)                       |
| 23/J17 | AITC 200 (T116)                       |
| 23/J20 | ASTM D3110                            |
| 23/J21 | ASTM D3535 (CSA 0112.0-M Series 1977) |

**Structural Use Panels**

|        |                                                                 |
|--------|-----------------------------------------------------------------|
| 23/S04 | ASTM E661                                                       |
| 23/S05 | PS-1 (Sec. 4.5.2)                                               |
| 23/S06 | PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88)                           |
| 23/S07 | PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)                           |
| 23/S08 | PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)                           |
| 23/S09 | PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)                           |
| 23/S10 | PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)                           |
| 23/S11 | PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)                           |
| 23/S12 | PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)                           |
| 23/S13 | PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)                          |
| 23/S14 | PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)                          |
| 23/S15 | PS-2 (Sec. 6.4.19) (Supplement No.1-92 to<br>CAN/CSA-0325.1-88) |
| 23/S16 | PS-2 (Sec. 6.4.20) (Supplement No.1-92 to<br>CAN/CSA-0325.1-88) |

**NVLAP LAB CODE 100421-0****PFS Corporation**

2402 Daniels Street  
Madison, WI 53718-6798  
Contact: Mr. James P. VanSchoyck  
Phone: 608-221-3361  
Fax: 608-223-5560  
E-Mail: JVanSchoyck@pfs-teco.com  
URL: <http://www.pfs-teco.com>

**Wood Based Products**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**General Wood Products**

|        |                                      |
|--------|--------------------------------------|
| 23/G01 | ASTM D906 (CSA 0112.0-M Series 1977) |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20)      |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33)      |
| 23/G04 | ASTM D2395 (Method A)                |
| 23/G05 | ASTM D2718                           |
| 23/G06 | ASTM D2719 (Method C)                |
| 23/G08 | ASTM D4442 (Method A)                |
| 23/G09 | ASTM D4442 (Method B)                |
| 23/G10 | ASTM E72 (Sec. 14)                   |
| 23/G11 | ASTM E72 (Sec. 15)                   |
| 23/G12 | ASTM E564                            |
| 23/G13 | ASTM E695                            |
| 23/G14 | AFG-01-84 (Sec. 3.1)                 |
| 23/G15 | AFG-01-84 (Sec. 3.2)                 |
| 23/G16 | ASTM E489                            |
| 23/G17 | ASTM E767                            |
| 23/G18 | ASTM D1761 (Sec. 41-52)              |
| 23/G19 | ASTM E72 (Sec. 9, 10)                |
| 23/G20 | ASTM E72 (Sec. 11, 17, 20)           |
| 23/G21 | ASTM E72 (Sec. 13, 18, 21)           |
| 23/G22 | ASTM D5764                           |
| 23/G23 | ASTM E1803                           |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Hardwood Plywood**

|        |                 |
|--------|-----------------|
| 23/H01 | HP-1 (Sec. 4.3) |
| 23/H02 | HP-1 (Sec. 4.4) |
| 23/H03 | HP-1 (Sec. 4.6) |
| 23/H04 | ASTM E96        |

**Particleboard and Medium-Density Fiberboard**

|        |                                   |
|--------|-----------------------------------|
| 23/P01 | ASTM D1037 (Part A, Sec. 21-27)   |
| 23/P02 | ASTM D1037 (Part A, Sec. 61-67)   |
| 23/P03 | ASTM D1037 (Part A, Sec. 68-73)   |
| 23/P04 | ASTM D1037 (Part A, Sec. 81-86)   |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P07 | ASTM D1037 (Part A, Sec. 118-124) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4)          |
| 23/T01 | ASTM E1333                        |
| 23/T02 | FTM 1-83                          |
| 23/T04 | ASTM D5582                        |

**Sandwich Constructions**

|        |                      |
|--------|----------------------|
| 23/X01 | ASTM C273            |
| 23/X02 | ASTM C297            |
| 23/X03 | ASTM C365 (Method A) |
| 23/X04 | ASTM C393            |
| 23/X05 | ASTM C480            |
| 23/X06 | ASTM C481            |
| 23/X07 | ASTM D1183           |

**Structural Composite Lumber, Glulam, I-Joists,****Laminated Veneer Lumber**

|        |                                                      |
|--------|------------------------------------------------------|
| 23/J01 | ASTM D143 (Sec. 8)                                   |
| 23/J02 | ASTM D143 (Sec. 14)                                  |
| 23/J03 | ASTM D143 (Sec. 16)                                  |
| 23/J04 | ASTM D198 (Sec. 4-11)                                |
| 23/J06 | ASTM D905 (CSA 0112.0-M Series 1977)                 |
| 23/J07 | ASTM D1037 (Part A, Sec. 87-90)                      |
| 23/J08 | ASTM D1101                                           |
| 23/J09 | ASTM D1761 (Sec. 1-11)                               |
| 23/J10 | ASTM D2559 (Shear)                                   |
| 23/J11 | ASTM D2559 (Delamination) (CSA 0112.0-M Series 1977) |
| 23/J12 | ASTM D4688                                           |
| 23/J13 | AITC 200 (T106)                                      |
| 23/J14 | AITC 200 (T107)                                      |
| 23/J15 | AITC 200 (T110)                                      |
| 23/J16 | AITC 200 (T114)                                      |
| 23/J17 | AITC 200 (T116)                                      |
| 23/J21 | ASTM D3535 (CSA 0112.0-M Series 1977)                |

**Structural Use Panels**

|        |                                           |
|--------|-------------------------------------------|
| 23/S01 | ASTM D3044                                |
| 23/S03 | ASTM D3501 (Method B)                     |
| 23/S04 | ASTM E661                                 |
| 23/S05 | PS-1 (Sec. 4.5.2)                         |
| 23/S06 | PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88)     |
| 23/S07 | PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)     |
| 23/S08 | PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)     |
| 23/S09 | PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)     |
| 23/S10 | PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)     |
| 23/S11 | PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)     |
| 23/S12 | PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)     |
| 23/S13 | PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)    |
| 23/S14 | PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)    |
| 23/S15 | PS-2 (Sec. 6.4.19) (Supplement No.1-92 to |

CAN/CSA-0325.1-88)

23/S16 PS-2 (Sec. 6.4.20) (Supplement No.1-92 to  
CAN/CSA-0325.1-88)

**NVLAP LAB CODE 100423-0****APA - The Engineered Wood Association  
Research Center**

7011 South 19th Street  
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Tacoma, WA 98411-0700  
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**Wood Based Products**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**General Wood Products**

|        |                       |
|--------|-----------------------|
| 23/G05 | ASTM D2718            |
| 23/G06 | ASTM D2719 (Method C) |
| 23/G07 | ASTM D3043 (Method C) |
| 23/G10 | ASTM E72 (Sec. 14)    |
| 23/G11 | ASTM E72 (Sec. 15)    |

**Structural Composite Lumber, Glulam, I-Joists,****Laminated Veneer Lumber**

|        |                                                      |
|--------|------------------------------------------------------|
| 23/J04 | ASTM D198 (Sec. 4-11)                                |
| 23/J05 | ASTM D198 (Sec. 28-35)                               |
| 23/J09 | ASTM D1761 (Sec. 1-11)                               |
| 23/J10 | ASTM D2559 (Shear)                                   |
| 23/J11 | ASTM D2559 (Delamination) (CSA 0112.0-M Series 1977) |
| 23/J12 | ASTM D4688                                           |

**Structural Use Panels**

|        |                                                                 |
|--------|-----------------------------------------------------------------|
| 23/S01 | ASTM D3044                                                      |
| 23/S02 | ASTM D3500 (Method B)                                           |
| 23/S03 | ASTM D3501 (Method B)                                           |
| 23/S04 | ASTM E661                                                       |
| 23/S07 | PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)                           |
| 23/S08 | PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)                           |
| 23/S09 | PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)                           |
| 23/S10 | PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)                           |
| 23/S11 | PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)                           |
| 23/S12 | PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)                           |
| 23/S13 | PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)                          |
| 23/S14 | PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)                          |
| 23/S15 | PS-2 (Sec. 6.4.19) (Supplement No.1-92 to<br>CAN/CSA-0325.1-88) |
| 23/S16 | PS-2 (Sec. 6.4.20) (Supplement No.1-92 to<br>CAN/CSA-0325.1-88) |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 100424-0****Vibro-Acoustics Laboratory**

727 Tapscott Road  
Scarborough Ontario M1X 1A2  
CANADA  
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Phone: 416-291-7371  
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E-Mail: bgault@vibro-acoustics.com

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |             |
|--------|-------------|
| 08/P03 | ASTM C423   |
| 08/P10 | ANSI S12.31 |
| 08/P36 | ASTM E477   |
| 08/P44 | ISO 354     |
| 08/P46 | ISO 3741    |

**NVLAP LAB CODE 100425-0****Johns Manville Technical Center**

10100 West Ute Avenue  
P.O. Box 625005  
Littleton, CO 80162-5005  
Contact: Mr. Mark A. Albers  
Phone: 303-978-5008  
Fax: 303-978-3123  
E-Mail: albersm@jm.com  
URL: <http://www.jm.com/mtc/appliedtech.html>

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
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|        |                 |
|--------|-----------------|
| 08/P03 | ASTM C423       |
| 08/P04 | ASTM C522       |
| 08/P06 | ASTM E90        |
| 08/P10 | ANSI S12.31     |
| 08/P13 | ANSI S12.32     |
| 08/P24 | ANSI S12.10     |
| 08/P28 | ASTM E1375      |
| 08/P29 | ASTM E1376      |
| 08/P33 | ASTM E1111      |
| 08/P34 | ASTM E1414      |
| 08/P35 | ASTM E1050      |
| 08/P36 | ASTM E477       |
| 08/P45 | ISO 140, Part 3 |
| 08/P48 | ISO 7779        |

**Thermal Insulation Materials**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Flammability**

|        |               |
|--------|---------------|
| 01/F01 | TAPPI T461-OM |
| 01/F02 | ASTM E84      |
| 01/F05 | ASTM E136     |

**Mass, Density, and Dimensional Stability**

|        |           |
|--------|-----------|
| 01/D02 | ASTM C167 |
|--------|-----------|

|        |                                                         |
|--------|---------------------------------------------------------|
| 01/D03 | ASTM C209 (Sec. 7)                                      |
| 01/D04 | ASTM C209 (Sec. 14, 2 hour)                             |
| 01/D05 | ASTM C209 (Sec. 14, 24 hour) by D1037<br>(Sec. 100-106) |
| 01/D08 | ASTM C302                                               |
| 01/D09 | ASTM C303                                               |
| 01/D11 | ASTM C356                                               |
| 01/D12 | ASTM C411                                               |
| 01/D13 | ASTM C519                                               |

**Related Material Properties**

|        |                   |
|--------|-------------------|
| 01/V04 | ASTM E96          |
| 01/V07 | ASTM C1104/C1104M |

**Strength**

|         |                     |
|---------|---------------------|
| 01/S01a | ASTM C165 (Proc. A) |
| 01/S01b | ASTM C165 (Proc. B) |
| 01/S02  | ASTM C203           |
| 01/S03  | ASTM C209 (Sec. 10) |
| 01/S04  | ASTM C209 (Sec. 11) |
| 01/S05  | ASTM C209 (Sec. 12) |
| 01/S06  | ASTM C209 (Sec. 13) |
| 01/S08  | ASTM C446           |
| 01/S10  | ASTM D828           |

**Thermal Resistance**

|        |           |
|--------|-----------|
| 01/T01 | ASTM C177 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |
| 01/T10 | ASTM C687 |
| 01/T11 | ASTM C976 |

**NVLAP LAB CODE 100426-0****KTL Dallas, Inc.**

802 N. Kealy  
Lewisville, TX 75057-3136  
Contact: Mr. John Olivant  
Phone: 972-436-9600  
Fax: 972-436-2667  
E-Mail: jolivant@icomply.com  
URL: <http://www.ktl.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment   |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b   | Radiated Emissions                                                                                                            |
| 12/T51    | AS/NZS 3548                                                                                                                   |

**Immunity Test Methods:**

|        |                                      |
|--------|--------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 |
|--------|--------------------------------------|



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|        |                                                                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/I02 | (1998): Electrostatic Discharge Immunity Test<br>IEC 61000-4-3 (1995) and Amendment 1                                                              |
| 12/I03 | (1998): Radiated, Radio-Frequency<br>Electromagnetic Field Immunity Test<br>IEC 61000-4-4 (1995): Electrical Fast<br>Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                                                          |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to<br>Conducted Disturbances, Induced<br>Radio-Frequency Fields                                                     |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency<br>Magnetic Field Immunity Test                                                                              |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short<br>Interruptions and Voltage Variations Immunity<br>Tests                                               |

### Safety Test Methods:

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

### Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                                     |
| 12/T01  | Terminal Equipment Network Protection<br>Standards, FCC Method - 47 CFR Part 68 -<br>Analog and Digital                                                                                                                                                   |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation;<br>68.304 Leakage current limit.; 68.306<br>Hazardous voltage limit.; 68.308 Signal power<br>limit.; 68.310 Longitudinal balance limit.;<br>68.312 On-hook impedance limit.; 68.314<br>Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical<br>standards                                                                                                                                                                                                  |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                                |
| 12/T42  | ACA TS-002                                                                                                                                                                                                                                                |
| 12/T43  | ACA TS-003                                                                                                                                                                                                                                                |
| 12/T44  | ACA TS-004                                                                                                                                                                                                                                                |
| 12/T45  | ACA TS-006                                                                                                                                                                                                                                                |
| 12/T49  | ACA TS-016                                                                                                                                                                                                                                                |

### NVLAP LAB CODE 100427-0

#### Michael & Associates

200 Innovation Blvd., Suite 229  
State College, PA 16803  
Contact: Mr. Kevin Michael  
Phone: 814-234-7042  
Fax: 814-235-1381  
E-Mail: Michaelassoc@home.com  
URL: <http://www.michaelassociates.com>

#### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

#### NVLAP

| Code   | Designation                  |
|--------|------------------------------|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6                   |

### NVLAP LAB CODE 100428-0

#### Matsushita EMC Center

Yunitopia Sasayama, Yashiro  
Sasayama-City  
Sasayama, Hyogo 669-2356  
JAPAN  
Contact: Mr. Katsuo Ishihara  
Phone: 81-795-52-5681  
Fax: 81-795-52-5682  
E-Mail: PAN02796@pas.mei.co.jp

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

|           |                                                                                                                                                                                    |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment                                             |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment, Amendment 1:1995, and<br>Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of<br>Measurement of Radio Interference<br>Characteristics of Information Technology<br>Equipment                                               |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital<br>Devices                                                                                                                                   |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz                                                                                                                             |
| 12/F01b   | Radiated Emissions                                                                                                                                                                 |
| 12/T51    | AS/NZS 3548                                                                                                                                                                        |

#### Immunity Test Methods:

|        |                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1<br>(1998): Electrostatic Discharge Immunity Test                            |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1<br>(1998): Radiated, Radio-Frequency<br>Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast<br>Transient/Burst Immunity Test                                           |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                        |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to<br>Conducted Disturbances, Induced<br>Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency<br>Magnetic Field Immunity Test                                            |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short<br>Interruptions and Voltage Variations Immunity<br>Tests             |



# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## NVLAP LAB CODE 100430-0

### Professional Service Industries, Inc., Pittsburgh

#### Test. Lab. Div.

2710 West 5th Avenue

Eugene, OR 97402

Contact: Mr. Ralph M. Vaughn

Phone: 541-484-9212

Fax: 541-344-2735

E-Mail: ralph.vaughn@PSI.USA.com

### Wood Based Products

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### General Wood Products

23/G02 ASTM D1037 (Part A, Sec. 11-20)

23/G03 ASTM D1037 (Part A, Sec. 28-33)

23/G08 ASTM D4442 (Method A)

23/G10 ASTM E72 (Sec. 14)

23/G11 ASTM E72 (Sec. 15)

#### Hardwood Plywood

23/H01 HP-1 (Sec. 4.3)

23/H02 HP-1 (Sec. 4.4)

23/H03 HP-1 (Sec. 4.6)

#### Particleboard and Medium-Density Fiberboard

23/P04 ASTM D1037 (Part A, Sec. 81-86)

23/P05 ASTM D1037 (Part A, Sec. 100-106)

23/P06 ASTM D1037 (Part A, Sec. 107-110)

23/P07 ASTM D1037 (Part A, Sec. 118-124)

23/P08 ASTM D1037 (Part A, Sec. 126-127)

23/P09 ANSI/A208.1 (Sec. 3.4.4)

23/T01 ASTM E1333

23/T02 FTM 1-83

#### Structural Use Panels

23/S04 ASTM E661

23/S05 PS-1 (Sec. 4.5.2)

23/S06 PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88)

23/S07 PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)

23/S08 PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)

23/S09 PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)

23/S10 PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)

23/S11 PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)

23/S12 PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)

23/S13 PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)

23/S14 PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)

23/S15 PS-2 (Sec. 6.4.19) (Supplement No.1-92 to CAN/CSA-0325.1-88)

23/S16 PS-2 (Sec. 6.4.20) (Supplement No.1-92 to CAN/CSA-0325.1-88)

## NVLAP LAB CODE 100431-0

### PCTEST Engineering Laboratory, Inc.

6660-B Dobbin Road

Columbia, MD 21045-4708

Contact: Mr. Randy Ortanez

Phone: 410-290-6652

Fax: 410-290-6654

E-Mail: randy@pctestlab.com

URL: http://www.pctestlab.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

#### Immunity Test Methods:

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test

12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency

Electromagnetic Field Immunity Test

12/I03 IEC 61000-4-4 (1995): Electrical Fast

Transient/Burst Immunity Test

12/I04 IEC 61000-4-5 (1995): Surge Immunity Test

12/I05 IEC 61000-4-6 (1996): Immunity to

Conducted Disturbances, Induced

Radio-Frequency Fields

12/I06 IEC 61000-4-8 (1993): Power Frequency

Magnetic Field Immunity Test

12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

NVLAP LAB CODE 100432-0

**InfoGard Laboratories, Inc.**

641 Higuera Street, Second Floor  
San Luis Obispo, CA 93401  
Contact: Ms. Patricia Lareau  
Phone: 805-783-0810  
Fax: 805-783-0889  
E-Mail: plareau@infogard.com  
URL: <http://www.infogard.com>

**Cryptographic Module Testing**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i>                                                                                                                                                                                                           |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17/C01      | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a     | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3.                                                                                         |
| 17/C01b     | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT                                                                                                           |
| 17/C01c     | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT                                                                                                           |
| 17/C02      | FIPS-Approved Cryptographic Algorithms (see < <a href="http://csrc.nist.gov/cryptval">http://csrc.nist.gov/cryptval</a> >) as required in FIPS PUB 140-1.                                                                    |

NVLAP LAB CODE 100501-0

**Calvert Cliffs Nuclear Power Plant, Inc.**

Member of Constellation Energy Group  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702  
Contact: Mr. Timothy J. Kirkham  
Phone: 410-495-6885  
Fax: 410-495-2539  
E-Mail: [timothy.j.kirkham@ccnppi.com](mailto:timothy.j.kirkham@ccnppi.com)

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802 in a Panasonic UD874A holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII, VIII.

NVLAP LAB CODE 100502-0

**Union Electric Company, Callaway Plant**

P.O. Box 620  
Fulton, MO 65251-0620  
Contact: Mr. Christopher C. Graham  
Phone: 573-676-8380  
Fax: 573-676-4476  
E-Mail: [ccgraham@cal.ameren.com](mailto:ccgraham@cal.ameren.com)

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD-802-AS in a Panasonic UD-874A holder for ANSI HPS N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

NVLAP LAB CODE 100503-0

**Mallinckrodt, Inc.**

2703 Wagner Place  
Maryland Heights, MO 63043  
Contact: Mr. Roger Moroney  
Phone: 314-654-7457  
Fax: 314-654-7998  
E-Mail: [roger.moroney@mkg.com](mailto:roger.moroney@mkg.com)

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing Harshaw automatic reader model 6600E.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD model 8825 for ANSI-N13.11 categories II, IIIB, IV, VC, VI, VII.

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 100504-0**

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**Naval Dosimetry Center**

National Naval Medical Center

8901 Wisconsin Ave.

Bethesda, MD 20889-5614

Contact: CAPT K. Mendenhall

Phone: 301-295-0142/5410

Fax: 301-295-5981

E-Mail: kmendenhall@navdoscen.med.navy.mil

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Harshaw/Bicron automatic reader models 8800PC and 6600.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Harshaw 8801 (DT 648/PD)(Harshaw 4 Chip Card, 3 TLD700, 1 TLD600) in a Type 88 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VI, VII, VIII.

Bicron 8840-8841 (4 chip MCP Copper Doped Intergrated Dosimetry System) for ANSI.N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII.

Harshaw extremity TLD EXTRAD-100 in a finger ring holder for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIB, IV, VA.

Bicron DXTRAD-707H finger ring for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

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**NVLAP LAB CODE 100505-0**

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**Duke Power Company Dosimetry Laboratory**

526 South Church Street

P.O. Box 1006

Charlotte, NC 28201-1006

Contact: Mr. Donald N. Mei

Phone: 704-382-7547

Fax: 704-382-4477

E-Mail: dnmei@duke-energy.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw Model 8800.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD card Type 8801 in a model 8814 BGN holder for ANSI-N13.11 categories I, II, IIIA, IV, VB, VI, VII, VIII.

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**NVLAP LAB CODE 100506-0**

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**Southern California Edison**

San Onofre Nuclear Generating Station

5000 Pacific Coast Highway, P.O. Box 128

San Clemente, CA 92674-0128

Contact: Mr. Richard V. Warnock

Phone: 949-368-6784

Fax: 949-368-9881

E-Mail: warnocrv@songs.sce.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD model UD802-AS2 in a Panasonic holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII.

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**NVLAP LAB CODE 100512-0**

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**Radiation Detection Company**

162 N. Wolfe Road

P.O. Box 3414

Sunnyvale, CA 94088-3414

Contact: Mr. Richard H. Holden

Phone: 408-735-8700

Fax: 408-735-0126

E-Mail: barrie.laing@radetco.com

URL: <http://www.radetco.com>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing (1) Teledyne 7300 and 310 reader; (2) Harshaw 3000A and 3500 reader; (3) by manual film processing and reading on a Macbeth TD932 densitometer; (4) NE Autoscan 60 system and Ziess microscope and (5) Harshaw 6600 and 8800 TLD readers.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

| DESIGNATION                                               | PROCESS | ANSI-N13.11 CATEGORIES                 |                                                                                                                                                                    |
|-----------------------------------------------------------|---------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hi Energy Photons<br>TLD-100 powder<br>(Type 06 & 09)     | 1*      | II, IV                                 | with ANSI HPS-N13.11-1993 through testing.<br><br>Panasonic TLD model UD802-AS in an ISA Model 821 hanger for ANSI-N13.11 categories I, II, IIIB, IV, VA, VI, VII. |
| Lo Energy Photons<br>TLD-100, 600, 700<br>chips (Type 22) | 2       | I, IIIB, VI                            | Panasonic TLD model UD812A-5 in a Panasonic UD884A-T hanger for ANSI-N13.11 categories I, II, IV, VA, VII.                                                         |
| TLD Albedo<br>(Type 22)                                   | 2       | VIII                                   | Combination Panasonic TLD model UD812A-5 and UD809-AS in a Panasonic UD884A-T holder with cd shields for ANSI-N13.11 category VIII.                                |
| Film XBG<br>(Type 01)                                     | 3       | I, II, IIIA, IIIB, IV, VA, VB, VI, VII | Rados Electronic Dosimeter RAD-51R with a Rados ADR 1000 and 2000 reader for HPS ANSI-N13.32-1995 categories II, IIIB, IV and VI.                                  |
| Neutron Tracketch<br>PN-3 (Type 23)                       | 4       | VIII                                   |                                                                                                                                                                    |
| Beta/gamma<br>Albedo TLD<br>(Type 23)                     | 2       | II, IV, VA, VII                        |                                                                                                                                                                    |
| TLD-Beta/gamma-<br>TLD 100 powder &<br>chips (Type 30)    | 1 or 2  | I, IIIA, IIIB, VA, VB, VI              |                                                                                                                                                                    |
| TLD-Beta/gamma-<br>TLD 100 powder &<br>chips (Type 9)     | 1 or 2  | VA, VII                                |                                                                                                                                                                    |

\* Process 2 is considered functionally acceptable as a substitute which can be used in lieu of process I as listed above.

Extremity Finger Ring Type 05 Harshaw TLD-100 dosimeter using processes 1 and 2 readers for ANSI HPS N13.32-1995 and NIST Handbook 150-4, table 2 categories II, IVA, VA.

**NVLAP LAB CODE 100514-0****Ginna Nuclear Station**

1503 Lake Road  
Ontario, NY 14519-9742  
Contact: Mr. William H. Thomson  
Phone: 716-771-3219  
Fax: 716-771-3905  
E-Mail: bill\_thomson@RGE.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the TLD radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in an ISA model 820 or Polymer 1-A holder for ANSI HPS N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

**NVLAP LAB CODE 100517-0****Carolina Power & Light Company, Harris Energy & Enviro. Center**

3932 New Hill-Holleman Road  
P.O. Box 327  
New Hill, NC 27562-0327  
Contact: Mr. A. G. Cheatham  
Phone: 919-362-3215  
Fax: 919-362-3354  
E-Mail: gooch.cheatham@cplc.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

| process the TLD radiation dosimeters listed below through<br>employing a Panasonic automatic reader model UD7I0A.                                                                                                                                                                                                                                                                                                                                                                                     | DOSIMETER                                                                                                                                                                                                                                                                            | PROCESS   | ANSI N13.11<br>CATEGORY         |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------|-----------------------------|
| This facility is accredited to process the following<br>dosimeters by virtue of actual demonstration of compliance<br>with ANSI HPS-N13.11-1993 and ANSI<br>HPS-N13.32-1995 through testing.                                                                                                                                                                                                                                                                                                          | FILM                                                                                                                                                                                                                                                                                 |           | Based<br>On<br>Testing          | Based<br>On Tech.<br>Equiv. |
| Panasonic TLD model UD802 in a Panasonic closed type<br>UD-874 ATM1 holder for ANSI HPS-N13.11 categories I,<br>II, IIIA, IV, VC, VI, VII, VIII.                                                                                                                                                                                                                                                                                                                                                      | G - Film "GARDRAY"<br>(100518A)                                                                                                                                                                                                                                                      | I,4       | II, IV, V, VII                  |                             |
| Panasonic extremity TLD model UD-807 in a plastic ring<br>holder for ANSI HPS-13.32 (NIST Handbook I50-4, table<br>2) category IVA.                                                                                                                                                                                                                                                                                                                                                                   | R - G badge plus<br>Neutrak ER<br>(100518G)                                                                                                                                                                                                                                          | 1,2,3,4,8 | VIII                            | II, IV, V, VII              |
| Based on equivalency, the Panasonic TLD model UD802<br>in a wrist holder for ANSI HPS-13.32 (NIST Handbook<br>150-4, table 2) categories I, II, IIIA, IV, VC, VI, VII.                                                                                                                                                                                                                                                                                                                                | B - G badge plus<br>CR-39(100518L)                                                                                                                                                                                                                                                   | I,3,4     | VIII                            | II, IV, V, VII              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | C - G badge plus<br>CR-39 and Cadmium                                                                                                                                                                                                                                                | 1,3,4     | II, IV, V, VII, VIII            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Y - G badge plus<br>Cadmium                                                                                                                                                                                                                                                          | 1,3,4     | II, IV, V, VII                  |                             |
| Merlin Gerin DMC-100 Electronic Dosimeter (ED) with<br>LDM-101 reader for ANSI HPS N13.11 category IV.                                                                                                                                                                                                                                                                                                                                                                                                | TLD                                                                                                                                                                                                                                                                                  |           |                                 |                             |
| Based on equivalency, the DMC-100 Electronic Personal<br>Dosimeter (EPD) in a wrist holder for ANSI HPS-13.32<br>(NIST Handbook 150-4, table 2) category IV.                                                                                                                                                                                                                                                                                                                                          | K - ALNOR<br>(TLD 100 or TLD 700<br>chips)(100518H/K)                                                                                                                                                                                                                                | 5         | I-VII                           |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | W - modified - 2 chip<br>Escort with x-ray<br>filtration (100518-J)                                                                                                                                                                                                                  | 2,7       | I, II                           |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Z - K badge<br>(TLD 100 or 700<br>chips) plus Neutron<br>Track Etch Neutrak<br>144 (100518-U)                                                                                                                                                                                        | 3,5,8     | VIII                            | I-VII                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | F - L badge plus<br>CR-39                                                                                                                                                                                                                                                            | 1,3       |                                 | I-VIII                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | L - 4 chip Alnor TLD                                                                                                                                                                                                                                                                 | 5         |                                 | I-VII                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | M - K badge<br>(TLD 700 chips)                                                                                                                                                                                                                                                       | 5         |                                 | I-VII                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | S - K badge<br>(TLD 700 chips)<br>plus ER                                                                                                                                                                                                                                            | 3,5       |                                 | I-VIII                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | POSL                                                                                                                                                                                                                                                                                 |           |                                 |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | J - Luxel (003/POSL)<br>plus Neutrak 144<br>(100518-V)                                                                                                                                                                                                                               | 6,8       | VIII                            | I-VII                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | P - Luxel (003/POSL)<br>(100518-U)                                                                                                                                                                                                                                                   | 6         | I, II, IIIA, IV,<br>VC, VI, VII |                             |
| This facility has been evaluated and deemed competent to<br>process the radiation dosimeters listed below through<br>employing (1) Landauer (Kanars Data) automatic film<br>reader; (2) Harshaw 2000 B/D Laser reader; (3) CR-39<br>manual optical readers; (4) manual densitometers X-Rite,<br>Tech/Ops model 301, Macbeth models TD504, TD931,<br>TD904; (5) ALNOR Dosacus reader; (6) Pulsed Optically<br>Stimulated Luminescence (POSL); (7) Harshaw 4000<br>single chip reader; (8) microscopes. | This facility has been accredited to process the extremity<br>dosimeters listed below, by virtue of actual demonstration<br>of compliance with ANSI-N13.32-1995 and NIST<br>Handbook I50-4, Pg. 14, Table 2, through employing the<br>following readers/process: (1) Landauer Custom |           |                                 |                             |
| This facility is accredited to process the following<br>dosimeters by virtue of actual demonstration of compliance<br>with ANSI HPS N13.11-1993 through testing.                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                      |           |                                 |                             |
| Landauer designation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                      |           |                                 |                             |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

Automated; (2) Kanars Data Custom Automated (film); (3) Alnor Dosacus Automatic Reader; (4) Harshaw 2000B/D, 4000 manual; (5) Macbeth TD504, TD904, TD931 manual; (6) Landauer Custom Luxel reader; (7) Pulsed Optically Stimulated Luminescence (POSL).

| DOSIMETER                                  | PROCESS                                   | ANSI N13.32 CATEGORY       |
|--------------------------------------------|-------------------------------------------|----------------------------|
|                                            | Based On Testing                          | Based On Tech. Equiv.      |
| TLD                                        |                                           |                            |
| U - Ring (TLD-100 chip) (Finger) (100518B) | 1, 4 I, II, IIIA, IV, VA, VB, VD, VI, VII |                            |
| K - Modified K (Wrist) (100518H)           | 3, 4 IIIA and VI                          | I, II, IV, VA, VB, VD, VII |
| POSL                                       |                                           |                            |
| P- Luxel (003/POSL) (100518U)              | 7 IIIA and VI                             | I, II, IV, VA, VB, VII     |

**NVLAP LAB CODE 100519-0****South Texas Project Dosimetry Laboratory**

P.O. Box 289  
Wadsworth, TX 77483  
Contact: Mr. G. T. Powell  
Phone: 361-972-7566  
Fax: 361-972-7757  
E-Mail: gtpowell@stpegs.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD Model UD802-AT in an ISA Model 830 holder for ANSI-N13.11 categories II, IV, VC, VI, VII.

Panasonic TLD Model UD802-AT in an ISA Model 810 holder for ANSI-N13.11 category VIII.

Panasonic TLD Model UD802/Neutron Pack in a Model ISA 830/ISA 810 holder for ANSI-N13.11 category VIII.

**NVLAP LAB CODE 100521-0****FENOC, Beaver Valley Power Station**

Mail Drop BV-ERF  
P.O. Box 4  
Shippingport, PA 15077-0004  
Contact: Mr. John T. Lebda  
Phone: 724-682-5872  
Fax: 724-682-5845  
E-Mail: lebda@firstenergycorp.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD812-AS2 for ANSI HPS N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

The dosimeter is housed in a custom made plastic clam shell type holder with filtering of 4mg/cm<sup>2</sup> mylar over elements 1 & 2, 140 mg/cm<sup>2</sup> plastic over element 3, and 840 mg/cm<sup>2</sup> plastic over element 4.

**NVLAP LAB CODE 100524-0****Duke Engineering and Services Environmental Laboratory**

400 Donald Lynch Boulevard  
Marlborough, MA 01752-4713  
Contact: Mr. Edward F. Maher, Sc.D  
Phone: 978-568-2522  
Fax: 978-568-2520  
E-Mail: efmaher@dukeengineering.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model 710A and a Rialto XT extremity dosimeter reader.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Panasonic TLD model UD-808 in a ISA model 830U holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV,

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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VA, VB, VC, VI, VII.

Panasonic TLD model 814-AS4 in a ISA model 830U holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

Panasonic TLD models UD808/UD814 combined for category VIII.

Bieron-NE extremity TLD mode 869/A/2B in a ring tape holder for HPS ANSI 13.32 (NIST Handbook 150-4, table 2) categories IVA, IVB, VA, VB and VD.

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**NVLAP LAB CODE 100528-0****TXU Electric - Comanche Peak Steam Electric Station**

5 miles North of Glen Rose on Hwy. 56 N  
P.O. Box 1002  
Glen Rose, TX 76043  
Contact: Mr. John R. Curtis  
Phone: 254-897-5332  
Fax: 254-897-0972  
E-Mail: jcurtis1@txu.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AT in an ISA 810 holder with Mylar-window for ANSI-N13.11 categories IIIB, IV, VB, VI, VII, VIII.

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**NVLAP LAB CODE 100529-0****Detroit Edison, Fermi 2 Dosimetry Laboratory**

6400 North Dixie Highway, 100 A1B  
Newport, MI 48166  
Contact: Mr. Ronald Gillmore  
Phone: 734-586-1388  
Fax: 734-586-1041  
E-Mail: gillmorer@dteenergy.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance

with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD model UD802-AS in an ISA-820 holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100535-0****Entergy Operations, Inc.**

Waterford 3, 17265 River Road  
Killona, LA 70066  
Contact: Mr. Ronald C. McLendon  
Phone: 504-464-3199  
Fax: 504-464-3151  
E-Mail: rcmlend@entergy.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic 874A holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100536-0****Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station**

5801 S. Wintersburg Road, Station 6107  
Tonopah, AZ 85354-7529  
Contact: Mr. Michael W. Lantz  
Phone: 623-393-5200  
Fax: 623-393-2624  
E-Mail: mlantz@apsc.com  
URL: <http://www.apsc.com/dosim.asp>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the TLD radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD812-AS5 in a single use holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII.

Panasonic TLD combination UD809 (in UD885A-T holder)/UD812 (in a single use holder) for ANSI-N13.11 category VIII.

Merlin Gerlin DMC-100 Electronic Personnel Dosimeter  
for ANSI-N13.11 categories II, IIIB, IV, VI.

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**NVLAP LAB CODE 100537-0****Pacific Gas & Electric Company, Diablo Canyon  
Nuclear Power Plant**

P.O. Box 56  
Avila Beach, CA 93424  
Contact: Mr. Mark O. Somerville  
Phone: 805-545-4007  
Fax: 805-545-6645  
E-Mail: mos3@pge.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic UD875AT holder for ANSI-N13.11 categories II, IIIA, IV, VA, VI, VII, VIII.

Combination Panasonic TLD model UD813-AS8 in a Panasonic UD885AT holder for ANSI-N13.11 category VIII.

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**NVLAP LAB CODE 100538-0****Con Edison, Indian Point**

Broadway and Bleakley Avenue  
Buchanan, NY 10511-1099  
Contact: Mr. Edward Salisbury  
Phone: 914-271-7118  
Fax: 914-734-5734  
E-Mail: salisbury@coned.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI-HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AT in an 874 AT holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100539-0****U.S. Army Radiation Standards & Dosimetry  
Laboratory**

Attn: AMSAM-TMD-SR-D, Bldg. 5417  
Redstone Arsenal, AL 35898-5000  
Contact: Mr. Patrick Kuykendall  
Phone: 256-876-3340  
Fax: 256-955-6413  
E-Mail: patrick.kuykendall@redstone.army.mil

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Model 710 reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic Model UD802AS in a Panasonic UD-874A-T holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100540-0****Northeast Nuclear Energy Co. Dosimetry  
Laboratory**

Route 156, Rope Ferry Road  
Waterford, CT 06385  
Contact: Mr. Robert J. Decensi  
Phone: 860-444-5454  
Fax: 860-444-5640  
E-Mail: decenrj@nu.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw model 8800 TLD workstation.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD card model 8801N (3 TLD 700, 1 TLD 600 chips) in a Harshaw Model 8810 holder for ANSI-N13.11 categories I, II, IIIB, IV, VB, VI, VII, and VIII.



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 100541-0****Exelon Generation Company, LLC - TLD****Processing Laboratory**

PTC TLD Lab, Room 173

36400 South Essex Road

Wilmington, IL 60481

Contact: Mr. Frank Rescek

Phone: 815-458-7643

Fax: 815-458-7864

E-Mail: Frank.Rescek@Exeloncorp.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AS in a UD874-T hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100544-0****Florida Power & Light Company**

700 Universe Blvd.

P.O. Box 14000

Juno Beach, FL 33408-0420

Contact: Mr. Joseph Danek

Phone: 561-694-4213

Fax: 561-694-3706

E-Mail: joe\_danek@fpl.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD716.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI-N13.11-1993 through testing.

Panasonic TLD model UD802-AT or AS in a ISA 820 holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

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**NVLAP LAB CODE 100548-0****US Air Force Center for Radiation Dosimetry**

2402 E. Drive

Brooks AFB, TX 78235-5114

Contact: Dr. David N. Erwin

Phone: 210-536-2003

Fax: 210-536-2025

E-Mail: David.Erwin@Guardian.Brooks.AF.MIL

URL: <http://sg-www.satx.disa.mil/iera/sdr/sdrd.htm>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Panasonic automatic readers model UD716AGL and UD-7900. Also, the Harshaw 6600 Automatic TLD Reader for the Ext-Rad extremity dosimeter.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AT in model 820-C hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

Panasonic TLD model UD802AT in ISA model 822 neutron hanger for ANSI-N13.11 categories IV, VIII.

Harshaw Ext-Rad extremity TLD-100 chip in a finger ring strap for ANSI HPS N-13.32-1995 (NIST Handbook 150-4, table 2) categories IV, VA, and VII.

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**NVLAP LAB CODE 100551-0****Georgia Power Company/Enviro. Affairs, Enviro. Lab-Dosimetry**

5131 Maner Road

Smyrna, GA 30080-7321

Contact: Mr. Michael C. Nichols

Phone: 404-799-2112

Fax: 404-799-2141

E-Mail: mcnichol@southernco.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing Panasonic automatic readers model UD-710A and UD-717.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32 through testing.

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

Panasonic TLD model UD802-AS in a Panasonic 854A or UD-874ATM1 (closed) hanger for ANSI HPS N13.11 categories II, IIIA, IV, VC, VI, VII, VIII.

Panasonic extremity TLD model UD-817 in an elastic ring holder for ANSI HPS N13.32-1995 (NIST Handbook 150-4, table 2) categories II, IV and VII.

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### NVLAP LAB CODE 100554-0

#### **PPL Susquehanna, LLC**

Two North Ninth Street  
Allentown, PA 18101-1179  
Contact: Mr. Stephen L. Ingram  
Phone: 610-774-5412  
Fax: 610-774-7205  
E-Mail: slingram@papl.com

#### **Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic UD874-AT1 or UD874-ATM1 hanger for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

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### NVLAP LAB CODE 100555-0

#### **ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc.**

3300 Hyland Ave., ICN Plaza  
Costa Mesa, CA 92626  
Contact: Ms. Sandra Nemecek  
Phone: 714-545-0100 x2297  
Fax: 714-668-3149  
E-Mail: smnecck@icnpharm.com  
URL: <http://www.dosimetry.com>

#### **Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the TLD automatic readers: Panasonic model UD710A, UD716, and Harshaw models 8800 and 6600. In addition, the TLD manual readers: Panasonic model UD702 and Harshaw models 5500 and 3500. The MacBeth TD932 densitometer, a custom automatic developer and densitometer for film processing and a Bicon Autoscan 60 chemical etch system.

#### **WHOLE BODY**

This facility is accredited to process the following

dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model ICN UD-802 with a model UD-854 or UD-874 hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

ICN Film Badge (Kodak Type 4) for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII.

ICN Film Badge (Kodak Type 4 with CR39) for ANSI-N13.11 category VIII.

Panasonic TLD model UD-802 with CR39 in a model UD-874 hanger for ANSI-N13.11 category VIII.

ICN Remtrack (Harshaw) TLD model 100 enclosed in a laminated polyethylene material holder for ANSI N13.11 category II and IV.

TLD-100 for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII.

TLD-760 for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

TLD-760 plus CR39 for ANSI-N13.11 category VIII, based on equivalence.

#### **EXTREMITY**

This facility has been accredited to process the extremity dosimeters listed below by virtue of actual demonstration of compliance with ANSI HPS N13.32-1995 and NIST Handbook 150-4, Page 14, Table 2 categories.

Panasonic extremity TLD UD-807 in flex ring holder, based on testing, for categories IVA, VA, and VB.

TLD-100 (Ring), based on testing, for categories I, II, IIIA, IV, VA, VB, VD, VI, and VII.

TLD-100 (Wrist), based on technical equivalence, for categories I, II, IIIA, IIIB, IV, VA, VI, VII.

TLD-100 IC (Ring), based on technical equivalence, for categories I, II, IIIA, IV, VA, VB, VD.

TLD-760 (Wrist), based on technical equivalence, for categories I, II, IIIA, IIIB, IV, VA, VI, VII.

TLD 802 (Wrist), based on technical equivalence, for categories I, II, IIIA, IV, VC, VI, VII.

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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TLD 803 (Wrist), based on technical equivalence, for categories I, II, IIIA, IV, VA, VI, VII.

ICN film (Wrist), based on technical equivalence, for categories I, II, IIIA, IV, VA, VI, VII.

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**NVLAP LAB CODE 100556-0****Atomic Energy Industrial Laboratory of the Southwest, Inc.**

9261 Kirby Drive  
Houston, TX 77054-2514  
Contact: Mr. Steven H. Allen  
Phone: 713-790-9719  
Fax: 713-790-0542  
E-Mail: shallen@aeil.com  
URL: <http://www.aeil.com>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing film processing using a computerized custom densitometer.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Film Badge B-4 (Kodak Type 2) for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII.

Film Badge N-5 (Kodak Type 2 and A) for ANSI-N13.11 category VIII.

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**NVLAP LAB CODE 100559-0****Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs**

3008 Cornwallis Road  
P.O. Box 12057  
Research Triangle Park, NC 27709  
Contact: Mr. Stephen A. Browne  
Phone: 919-549-8661  
Fax: 919-549-0761  
E-Mail: troxrso@troxlerlabs.com  
URL: <http://troxlerlabs.com>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802 with model UD854 hanger

for ANSI-N13.11 category I, II, IIIA, IV, VC, VI, VII, VIIIA.

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**NVLAP LAB CODE 100560-0****Electric Boat Corp/A General Dynamics Co. Radiological Ctrl. Dept**

75 Eastern Point Road  
Groton, CT 06340-4909  
Contact: Mr. Robert D. Renza  
Phone: 860-433-3674  
Fax: 860-433-0946  
E-Mail: rrenza@ebmail.gdeb.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw manual reader model 4000.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

A Harshaw TLD model 4040, CaF<sub>2</sub> Bulb Dosimeter in a model 4039 holder for ANSI HPS N13.11 Category IV.

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**NVLAP LAB CODE 100561-0****Newport News Shipbuilding Radiological Control Department**

4101 Washington Avenue  
Newport News, VA 23607-2770  
Contact: Mrs. C. W. Amos  
Phone: 757-380-3243  
Fax: 757-380-3778  
E-Mail: amos\_cw@nns.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw automatic reader model 8800.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD model 2276-L, BG (2 TLD 700, 1 TLD 600) in a Type 80 Harshaw cardholder for ANSI HPS N13.11 category IV.

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 100562-0****Radiation Laboratory, Taiwan Power Company**

P.O. Box 7  
Shihmen, Taipei 25302  
TAIWAN  
Contact: Mr. W. W. Yeh  
Phone: +886-2-2638-1397  
Fax: +886-2-2638-2446  
E-Mail: u706667@taipower.com.tw

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AS in a UD-874A holder for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII.

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**NVLAP LAB CODE 100565-0****Naval Nuclear Propulsion Program Directorate, Washington, DC**

Puget Sound Naval Shipyard, Rad. Hlth  
Division, Code 105.5, 1400 Farragut Ave  
Bremerton, WA 98314-5001  
Contact: Mr. Mark S. Johnson  
Phone: 360-476-3596  
Fax: 360-476-4383

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: March 31, 2001

The facility listed has been evaluated as a representative site and deemed competent to process the radiation dosimeter listed below through employing a Radiac Computer-Indicator Model No. CP-1112/PD TLD reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing:

CaF Bulb Dosimeter (DT-526/PD) for ANSI-N13.11 categories II, IV.

The accreditation is also extended to include processing performed by other facilities in the Naval Nuclear Propulsion Program which use identical equipment and procedures as listed above.

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**NVLAP LAB CODE 100570-0****Clinton Power Station**

6 mi. East of Clinton, Route 54 East  
P.O. Box 678  
Clinton, IL 61727-0678  
Contact: Ms. Mary J. Lewis  
Phone: 217-935-8881 x3718  
Fax: 217-935-4934  
E-Mail: MLewis@Amergenenergy.com

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Model UD716AGL automatic reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD-802-AT in a ISA model 820 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VI, VII, VIII.

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**NVLAP LAB CODE 100571-0****United States Dosimetry Technology, Inc.**

660-A George Washington Way  
Richland, WA 99352-4246  
Contact: Mr. M. K. Winegardner  
Phone: 509-946-8738  
Fax: 509-943-2710  
E-Mail: mk\_wine@compuserve.com  
URL: <http://www.usdt.com>

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below employing (1) USDT TLD Card Reader (2) Bar-Ray Film Developing System and USDT/Mini film densitometer, and (3) Harshaw Model 2000A TLD Chip Reader.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

USDT-F (TLD-600) and USDT-U (TLD-700) for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII using (1).

USD T-3 Kodak type 2 film for ANSI-13.11 categories I, II, IIIA, IV, VA, VI, VII using (2).



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI N13.32 through testing:

USDT-R finger ring dosimeter for ANSI N13.32 category IV using (3).

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### NVLAP LAB CODE 100573-0

#### **Proxtronic, Inc.**

5795-B Burke Centre Parkway  
P.O. Box 12150  
Burke, VA 22015  
Contact: Mr. W. Guy Davis  
Phone: 703-425-4811  
Fax: 703-503-2856  
E-Mail: sales@Proxtronic.com  
URL: <http://www.proxtronic.com>

#### **Ionizing Radiation Dosimetry**

Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing film processing using a Victoreen 07-440 densitometer and TLD processing using a Panasonic UD710A and UD717AS.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Film Badge (Kodak Type II) for ANSI N13.11 categories IIIA, IV and VC.

Panasonic TLD model UD802-AS2 in an ISA 831, GDS 500, or UD875-ATM1 hanger for ANSI N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

Panasonic TLD model UD802-AS2 in a Panasonic 854 hanger for ANSI N13.11 categories IIIA, IV.

Panasonic TLD model UD-817 in a Wallet Card Holder for ANSI N13.11 categories II and IV.

This facility has been accredited to process the extremity dosimeters listed below by virtue of actual demonstration of compliance with ANSI N13.32 - 1995 and NIST Handbook 150-4, page 14, Table 12 categories.

Panasonic extremity TLD model UD-817 in a finger ring strip holder for categories I, II, IIIA, IVA, VA, VB, and VD.

Panasonic TLD model UD-802 (wrist), based on equivalence, for categories I, II, IIIA, IV, VC, VI, and VII

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### NVLAP LAB CODE 101004-0

#### **Analytics Corporation**

8040 Villa Park Drive  
Richmond, VA 23228  
Contact: Mr. James A. Calpin, CIH  
Phone: 804-264-7100  
Fax: 804-264-8873  
E-Mail: jcalpin@ix.netcom.com

#### **Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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### NVLAP LAB CODE 101006-0

#### **Advanced Industrial Hygiene Services, Inc.**

2131 S.W. 2 Ave.  
Miami, FL 33129-1411  
Contact: Mr. Bruce Marchette  
Phone: 305-854-7554  
Fax: 305-285-0677  
E-Mail: AIHS1@AOL.COM

#### **Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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### NVLAP LAB CODE 101012-0

#### **Dixon Information Inc.**

78 West 2400 South  
South Salt Lake, UT 84115-3013  
Contact: Mr. Willard C. Dixon  
Phone: 801-486-0800  
Fax: 801-486-0849

#### **Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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### NVLAP LAB CODE 101014-0

#### **Aires Consulting Group, Inc.**

1550 Hubbard  
Batavia, IL 60510  
Contact: Ms. Cynthia Darling  
Phone: 630-879-3006  
Fax: 630-879-3014  
E-Mail: cindyardarling@airesconsulting.com  
URL: airesconsulting.com

#### **Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101019-0

**EA Group**

7118 Industrial Park Blvd.  
Mentor, OH 44060-5314  
Contact: Mr. Carl R. Eggebraaten  
Phone: 440-951-3514  
Fax: 440-951-3774

URL: <http://www.eagroup-ohio.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101031-0

**Fiberquant, Inc.**

5025 S. 33rd St.  
Phoenix, AZ 85040  
Contact: Mr. Larry S. Pierce  
Phone: 602-276-6139  
Fax: 602-276-4558  
E-Mail: [FIBERQUANT@ABILNET.COM](mailto:FIBERQUANT@ABILNET.COM)  
URL: <http://www.fiberq.com/labs/fq.htm>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101032-0

**Batta Laboratories, Inc.**

Delaware Industrial Park  
6 Garfield Way  
Newark, DE 19713-5817  
Contact: Mr. Naresh C. Batta  
Phone: 302-737-3376  
Fax: 302-737-5764  
E-Mail: [ncbatta@battaenv.com](mailto:ncbatta@battaenv.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101037-0

**Microscopic Analysis, Inc.**

11760 Westline Industrial Drive  
St. Louis, MO 63146-3402  
Contact: Mr. Douglas N. Nimmo  
Phone: 314-993-2212  
Fax: 314-993-3193  
E-Mail: [IHSI@COMPUSERVE.COM](mailto:IHSI@COMPUSERVE.COM)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101039-0

**Davis Environmental Labs, Inc.**

333 W. Wacker Drive, Suite 1400  
Chicago, IL 60606-1226  
Contact: Mr. David Kedrowski  
Phone: 312-782-4486  
Fax: 312-782-5145

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101048-0

**EMSL Analytical, Inc.**

107 Haddon Avenue  
Westmont, NJ 08108-2799  
Contact: Mr. Stephen Siegel, CIH  
Phone: 856-858-4800  
Fax: 856-858-4960  
E-Mail: [ssiegel@emsl.com](mailto:ssiegel@emsl.com)  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101048-1**

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**EMSL Analytical, Inc.**

1770 The Exchange SE, Suite 135  
Atlanta, GA 30339  
Contact: Richard White  
Phone: 770-956-9150  
Fax: 770-956-9181  
E-Mail: RWhite@emsl.com  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101048-4**

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**EMSL Analytical, Inc.**

212 S. Wagner Road  
Ann Arbor, MI 48103  
Contact: Hildegard Hohnke  
Phone: 734-668-6810  
Fax: 734-668-8532  
E-Mail: Hhohnke@emsl.com  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101048-2**

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**EMSL Analytical, Inc.**

1056 Stelton Rd.  
Piscataway, NJ 08854  
Contact: Adrian Arav  
Phone: 908-981-0550  
Fax: 908-981-0551  
E-Mail: piscatawaylab@emsl.com  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101048-9**

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**EMSL Analytical, Inc.**

307 W. 38th Street  
New York, NY 10118  
Contact: Jose Arriaga  
Phone: 212-290-0051  
Fax: 212-290-0058  
E-Mail: jarriaga@emsl.com  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101048-3**

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**EMSL Analytical, Inc.**

382 South Abbott Avenue  
Milpitas, CA 95035  
Contact: Sean Fitzgerald  
Phone: 408-934-7010  
Fax: 408-934-7015

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101048-10**

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**EMSL Analytical, Inc.**

208 Stone Henge Road  
Carle Place, NY 11514  
Contact: Michele McGowan  
Phone: 516-997-7251  
Fax: 516-997-7528

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101051-0****Accredited Environmental Technologies, Inc.**

28 North Pennell Road  
Media, PA 19063  
Contact: Mr. Carl Josephson  
Phone: 610-891-0114  
Fax: 610-891-0559

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101061-0****ChemScope, Inc.**

15 Moulthrop Street  
North Haven, CT 06473-3686  
Contact: Mr. Ronald D. Arena  
Phone: 203-865-5605  
Fax: 203-498-1610  
E-Mail: chem.scope@snet.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101066-0****Law Engineering and Environmental Services, Inc.**

2100 Riverchase Center, Suite 450  
Birmingham, AL 35244  
Contact: Ms. Carol Payne  
Phone: 205-733-7671  
Fax: 205-985-2951  
E-Mail: cpayne@lawco.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101086-0****Analytica Solutions, Inc.**

12189 Pennsylvania Street  
Thornton, CO 80241  
Contact: Mr. Steve Merritt  
Phone: 303-469-8868 x123  
Fax: 303-469-5254  
E-Mail: smerritt@Analyticagroup.com  
URL: <http://www.analyticagroup.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101087-0****Environmental Monitoring & Consulting Associates**

P.O. Box 872  
Somerville, NJ 08876  
Contact: Mr. Joel Russell  
Phone: 732-249-3005  
Fax: 732-249-3384

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101103-0****Chatfield Technical Consulting Limited**

2071 Dickson Road  
Mississauga Ontario L5B 1Y8  
CANADA  
Contact: Dr. Eric J. Chatfield  
Phone: 905-896-7611  
Fax: 905-896-1930  
E-Mail: echatfield@ejchatfield.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101106-0****Clayton Group Services**

4636 East Marginal Way South, Suite 215  
Seattle, WA 98134-2331  
Contact: Ms. Venetia Runion  
Phone: 206-763-7364  
Fax: 206-763-4189  
E-Mail: vrunion@claytongrp.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101109-0****Wisconsin Occupational Health Laboratory**

2601 Agriculture Drive  
P.O. Box 7996  
Madison, WI 53707-7996  
Contact: Mr. Lyle Reichmann  
Phone: 608-224-6221  
Fax: 608-224-6213  
E-Mail: lr@mail.slh.wisc.edu

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101111-0****City of Los Angeles Department of Water and Power**

Department of Water and Power  
PO Box 51111, 1630 N. Main St., Bldg. 7  
Los Angeles, CA 90051-0100  
Contact: Mr. Stanley M. Kung  
Phone: 213-367-7270  
Fax: 213-367-7285  
E-Mail: stanley.kung@water.ladwp.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101125-0****Clayton Group Services**

3380 Chastain Meadows Pkwy., Suite 300  
Kennesaw, GA 30144  
Contact: Mr. Alan M. Segrave  
Phone: 770-499-7500  
Fax: 770-423-4990  
E-Mail: ASEG007@AOL.COM  
URL: <http://www.claytongrp.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101130-0****TEM, Incorporated**

443 Duane Street  
Glen Ellyn, IL 60137  
Contact: Mr. James Tuinenga  
Phone: 630-790-0880  
Fax: 630-790-0882  
E-Mail: jimtcih@ameritech.net  
URL: <http://www.tem-inc.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101135-0****McKee Environmental Health, Inc.**

303 Westfield Lane  
Friendswood, TX 77546-6316  
Contact: Mr. Ronald S. McKee  
Phone: 281-482-3403  
Fax: 281-482-7203  
E-Mail: mehi@wt.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101136-0****American Medical Laboratories, Inc.**

14225 Newbrook Drive  
P.O. Box 10841  
Chantilly, VA 20153-0841  
Contact: Mr. Christopher Kase  
Phone: 703-802-6900  
Fax: 703-802-7041  
E-Mail: ckase@aml.com  
URL: <http://www.aml.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101143-0****AMA Analytical Services, Inc.**

4475 Forbes Blvd.  
Lanham, MD 20706  
Contact: Mr. Andreas Saldivar  
Phone: 301-459-2640  
Fax: 301-459-2643  
E-Mail: [asaldivar@amalab.com](mailto:asaldivar@amalab.com)  
URL: <http://www.amalab.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101147-0****Hygienetics Laboratory Services**

98 North Washington Street  
Boston, MA 02114  
Contact: Mr. Bryan Clark  
Phone: 617-589-0660  
Fax: 617-742-4285  
E-Mail: [lab@hygienetics.com](mailto:lab@hygienetics.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101150-0****Schneider Laboratories, Inc.**

2512 W. Cary Street  
Richmond, VA 23220-5117  
Contact: Mr. Raja F. Abouzaki  
Phone: 804-353-6778  
Fax: 804-353-6928  
E-Mail: [s\\_lab@ix.netcom.com](mailto:s_lab@ix.netcom.com)  
URL: <http://www.slabinc.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101151-0****EMSL Analytical, Inc.**

5125 Adanson Street, Suite 900  
Orlando, FL 32804  
Contact: Mr. A. Mark Antonelli  
Phone: 407-599-5887  
Fax: 407-599-9063

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101162-0****EcoSystems Environmental, Inc.**

1408A Vantage Street  
Carrollton, TX 75006  
Contact: Mr. Bakhtiar Dargali  
Phone: 972-416-0520  
Fax: 972-416-4512

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101165-0****International Asbestos Testing Laboratory**

16000 Horizon Way, Unit 100  
Mt. Laurel, NJ 08054  
Contact: Mr. Frank E. Ehrenfeld, III  
Phone: 856-231-9449  
Fax: 856-231-9818

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101170-0****Gelles Laboratories, Division, CC Technologies**

6141 Avery Road  
Dublin, OH 43016  
Contact: Dr. Stanley H. Gelles  
Phone: 614-761-1214  
Fax: 614-761-1633  
E-Mail: [sgelles@cctlabs.com](mailto:sgelles@cctlabs.com)  
URL: <http://www.cctechnologies.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101185-0****SEAS, Inc.**

3089 Pandapas Pond Road  
P.O. Box 660  
Blacksburg, VA 24063-0660  
Contact: Mr. David L. Violette  
Phone: 540-951-9283  
Fax: 540-951-9282  
E-Mail: [seas@swva.net](mailto:seas@swva.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101187-0****ATC Associates Inc.**

104 E. 25th Street 10th Floor  
New York, NY 10010  
Contact: Ms. Milena Lowd  
Phone: 212-353-8280 x247  
Fax: 212-353-3599  
E-Mail: [Lowd15@ATC-ENVIRO.COM](mailto:Lowd15@ATC-ENVIRO.COM)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101188-0****Tremco, Inc. - Roofing Division, An RPM Company**

3735 Green Road  
Beachwood, OH 44122  
Contact: Mr. Greg Rudolph  
Phone: 216-766-5644  
Fax: 216-765-6737

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101192-0****Philip Environmental Services Corp.**

210 West Sandbank Road  
P.O. Box 230  
Columbia, IL 62236-0230  
Contact: Mr. Craig M. Brooks  
Phone: 618-281-7173  
Fax: 618-281-5120  
E-Mail: [cbrooks@philipinc.com](mailto:cbrooks@philipinc.com)  
URL: <http://www.philipinc.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101199-0****HYGENIX, INC.**

49 Woodside Street  
Stamford, CT 06902-2411  
Contact: Mr. Arthur Morris  
Phone: 203-324-2222  
Fax: 203-324-9857

URL: <http://www.hygenix.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101202-0****STAT Analysis Corporation**

2201 W. Campbell Park Dr.  
Chicago, IL 60612-3501  
Contact: Dr. Surendra N. Kumar  
Phone: 312-733-0551  
Fax: 312-733-2386

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Airborne Asbestos Analysis (TEM)**  
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**  
Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101208-0**

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**RJ Lee Group, Inc.**  
350 Hochberg Road  
Monroeville, PA 15146-1516  
Contact: Mr. Drew R. Van Orden  
Phone: 724-325-1776  
Fax: 724-733-1799  
E-Mail: DREW@RJLG.COM  
URL: <http://www.RJLG.COM>

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**  
Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101208-2**

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**RJ Lee Group, Inc.**  
Bay Area Laboratory  
530 McCormick Place  
San Leandro, CA 94577  
Contact: Dr. Benedict Schiefelbein  
Phone: 510-567-0480  
Fax: 510-567-0488

URL: <http://www.RJLG.COM>

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**  
Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101208-3**

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**RJ Lee Group, Inc.**  
Manassas Laboratory  
10503 Battleview Parkway  
Manassas, VA 20109  
Contact: Monica McCloy  
Phone: 703-368-7880  
Fax: 703-368-7761

URL: <http://www.RJLG.COM>

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101216-0**

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**CTL Environmental Services**  
24404 S. Vermont Avenue, Suite 307  
Harbor City, CA 90710  
Contact: Dr. Stuart E. Salot  
Phone: 310-530-5006  
Fax: 310-530-0792  
E-Mail: [salot@ctles.com](mailto:salot@ctles.com)

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101218-0**

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**EMS Laboratories, Inc.**  
117 West Bellevue Drive  
Pasadena, CA 91105-2503  
Contact: Ms. Bernadine M. Kolk  
Phone: 626-568-4065  
Fax: 626-796-5282  
E-Mail: [emslab2@aol.com](mailto:emslab2@aol.com)  
URL: <http://www.emslabs.com>

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**  
Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101221-0**

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**Micro Air, Inc.**  
6320 La Pas Trail  
Indianapolis, IN 46268-4104  
Contact: Dr. Morris L.V. French  
Phone: 317-293-1533  
Fax: 317-290-3566  
E-Mail: [microair@microair.com](mailto:microair@microair.com)

**Bulk Asbestos Analysis (PLM)**  
Accreditation Valid Through: March 31, 2001



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101222-0**

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**Enviro-Probe, Inc.**

2917 Bruckner Boulevard  
Bronx, NY 10461  
Contact: Dr. Ved P. Kukreja  
Phone: 718-863-0045  
Fax: 718-518-7454

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101228-0**

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**The Scott Lawson Group, Ltd.**

29 River Road  
P.O. Box 3304  
Concord, NH 03302-3304  
Contact: Mr. Joseph LaBarre  
Phone: 603-228-3610  
Fax: 603-228-3871

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101232-0**

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**ERI Consulting Engineers, Inc.**

2024 Republic Drive  
P.O. Box 2024  
Tyler, TX 75701-2024  
Contact: Ms. Kathy R. Schosek  
Phone: 903-534-5001  
Fax: 903-534-8701  
E-Mail: [kathy@ericonsulting.com](mailto:kathy@ericonsulting.com)  
URL: <http://www.ericonsulting.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101233-0**

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**HIH Laboratory, Inc.**

100 East NASA Road One, Suite 210  
P.O. Box 57727  
Webster, TX 77598  
Contact: Mr. Jerry W. Bright  
Phone: 281-338-9000  
Fax: 281-338-2351  
E-Mail: [jerry@hihlaboratory.com](mailto:jerry@hihlaboratory.com)  
URL: <http://www.hihlaboratory.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101234-0**

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**Braun Intertec Corporation**

6875 Washington Avenue South  
P.O. Box 39108  
Minneapolis, MN 55439-0108  
Contact: Ms. Beth Regan  
Phone: 612-942-4828  
Fax: 612-942-4844  
E-Mail: [bregan@brauncorp.com](mailto:bregan@brauncorp.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101235-0**

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**Materials Analytical Services, Inc.**

3945 Lakefield Court  
Suwanee, GA 30024  
Contact: Dr. William E. Longo  
Phone: 770-866-3200  
Fax: 770-866-3259  
E-Mail: [wlongo@mastest.com](mailto:wlongo@mastest.com)  
URL: <http://www.mastest.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101237-0**

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**State of Connecticut**

Dept. of Public Health Laboratory  
P.O. Box 1689  
Hartford, CT 06144-1689  
Contact: Dr. Kati Kelley  
Phone: 860-509-8500  
Fax: 860-509-8697

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101247-0

**Micro Analytical, Inc.**

11521 W. North Ave.  
Milwaukee, WI 53226  
Contact: Mr. Jon Yakish  
Phone: 414-771-0855  
Fax: 414-771-6570

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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NVLAP LAB CODE 101249-0

**Institute for Environmental Assessment**

9201 West Broadway, Suite 600  
Brooklyn Park, MN 55445  
Contact: Ms. Yolanda Pope  
Phone: 763-315-7900  
Fax: 763-315-7920  
E-Mail: yolandap@ieainstitute.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101254-0

**Roy F. Weston, Inc.**

1635 Pumphrey Avenue  
Auburn, AL 36832-4303  
Contact: Mr. Jamieson D. Webb  
Phone: 334-826-6100  
Fax: 334-826-8232

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101258-0

**DCM Science Laboratory, Inc.**

12421 W. 49th Ave., Unit 6  
Wheat Ridge, CO 80033  
Contact: Ms. Cindy Mefford  
Phone: 303-463-8270  
Fax: 303-463-8267  
E-Mail: dcmscilab@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101261-0

**Asbestos Analysis and Information Service, Inc.**

603 North Baker Street  
P.O. Box 837  
Four Oaks, NC 27524  
Contact: Mr. Stephen H. Westbrook  
Phone: 919-963-2898  
Fax: 919-963-2841  
E-Mail: STEHWEST@AOL.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101262-0

**Philip Analytical Services**

4418 Pottsville Pike  
Reading, PA 19605  
Contact: Mr. Michael Salum  
Phone: 610-921-8833  
Fax: 610-921-9667  
E-Mail: Salum,Michael@philipinc.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101269-0

**Volz Environmental Services, Inc.**

1200 Gulf Lab Road  
Pittsburgh, PA 15238-1304  
Contact: Mr. George J. Skarupa  
Phone: 412-826-8480  
Fax: 412-826-8488  
E-Mail: georgeskarupa@volzenvironmental.com  
URL: <http://www.volzenvironmental.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101270-0**

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**Pinchin Environmental Ltd.**

5749 Coopers Ave.  
Mississauga Ontario L4Z 1R9  
CANADA  
Contact: Ms. Wendy Bunner  
Phone: 905-507-4850  
Fax: 905-507-4884  
E-Mail: wbunncr@pinchin.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101282-0**

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**Mystic Air Quality Consultants, Inc.**

1204 North Road  
Groton, CT 06340  
Contact: Mr. Christopher J. Eident  
Phone: 860-449-8903  
Fax: 860-449-8860  
E-Mail: MAQC2@AOL.COM  
URL: <http://www.mysticair.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101288-0**

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**University (State) Hygienic Laboratory**

University of Iowa  
102 Oakdale Campus, #H101 OH  
Iowa City, IA 52242-5002  
Contact: Dr. George Breuer  
Phone: 319-335-4500  
Fax: 319-335-4555  
E-Mail: [gbreuer@uhl.uiowa.edu](mailto:gbreuer@uhl.uiowa.edu)  
URL: <http://www.uhl.uiowa.edu>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101289-0**

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**Omega Environmental Services**

165 State Street  
Hackensack, NJ 07601  
Contact: Ms. Veronica Kero  
Phone: 201-489-8700  
Fax: 201-342-5412  
E-Mail: [Veronicaomega@att.net](mailto:Veronicaomega@att.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101292-0**

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**Northern Analytical Laboratories, Inc.**

602 South 25th Street  
P.O. Box 30315  
Billings, MT 59107  
Contact: Ms. Kathleen A. Smit  
Phone: 406-254-7226  
Fax: 406-254-1389  
E-Mail: [nlabs@wtp.net](mailto:nlabs@wtp.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101301-0**

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**PMK Group, Inc.**

629 Springfield Road  
Kenilworth, NJ 07033  
Contact: Mr. Stanley Lewandowski  
Phone: 908-686-0044  
Fax: 908-686-0715  
E-Mail: [slewandowski@pmkgroup.com](mailto:slewandowski@pmkgroup.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101306-0**

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**Environmental Services International, Inc.**

6404 MacCorkle Avenue, SW, Suite #2  
St. Albans, WV 25177  
Contact: Mr. Leiton E. Miller, III  
Phone: 304-768-2233  
Fax: 304-768-9988  
E-Mail: [esilab@citynet.net](mailto:esilab@citynet.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101323-0**

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**PA DEP Bureau of Laboratories**

P.O. Box 1467  
Harrisburg, PA 17105-1467  
Contact: Mr. Paul E. Baker  
Phone: 717-787-4669  
Fax: 717-783-1502  
E-Mail: Baker,Paul@al.DEP.state.PA.US

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101331-0**

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**Kellco Services, Inc.**

3137 Diablo Ave.  
Hayward, CA 94545  
Contact: Dr. Xiaomin (Simon) Wang  
Phone: 510-786-9751  
Fax: 510-786-9625  
E-Mail: xwang@kellco.com  
URL: <http://www.kellco.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101332-0**

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**New York Testing Laboratories, Inc.**

100 Sweeneydale Avenue  
Bay Shore, NY 11706  
Contact: Mr. William Loch  
Phone: 631-952-7300  
Fax: 631-952-7441

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101343-0**

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**O'Brien & Gere Laboratories, Inc.**

5000 Brittonfield Parkway  
P.O. Box 4942  
Syracuse, NY 13221  
Contact: Mr. Michael J. Gerber  
Phone: 315-437-0200  
Fax: 315-463-7554

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101350-0**

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**PSI**

850 Poplar Street  
Pittsburgh, PA 15220  
Contact: Mr. Louis Lombardi  
Phone: 412-922-4010 x260  
Fax: 412-922-4014  
E-Mail: louis.lombardi@psiusa.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101356-0**

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**Raymond-Beling, Inc.**

1001 16th Street  
Moline, IL 61265  
Contact: Mr. David M. Bloss  
Phone: 309-757-9870  
Fax: 309-757-9808  
E-Mail: dave\_bloss@raymond-beling.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001



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**NVLAP LAB CODE 101375-0****Galson Laboratories**

6601 Kirkville Road  
P.O. Box 369  
East Syracuse, NY 13057  
Contact: Ms. Eva Galson  
Phone: 315-432-5227  
Fax: 315-437-0571

URL: <http://www.galsonlabs.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101384-0****Health Science Associates**

10771 Noel Street  
Los Alamitos, CA 90720-2547  
Contact: Ms. Jaime Steedman-Lyde  
Phone: 714-220-3922  
Fax: 714-220-2081  
E-Mail: [steedmanlyde@earthlink.net](mailto:steedmanlyde@earthlink.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101410-0****Davis & Floyd, Inc.**

816 East Durst Street  
P.O. Drawer 428  
Greenwood, SC 29649  
Contact: Mr. E. Carl Burrell, Jr.  
Phone: 864-229-4413  
Fax: 864-229-7119  
E-Mail: [cburrell@davisfloyd.com](mailto:cburrell@davisfloyd.com)  
URL: <http://www.davisfloyd.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101415-0****Larron Laboratory**

529 Broadway  
Cape Girardeau, MO 63701  
Contact: Mr. Ronald E. Farrow  
Phone: 573-334-8910  
Fax: 573-334-8910  
E-Mail: [ron.farrow@larronlab.com](mailto:ron.farrow@larronlab.com)  
URL: [www.larronlab.com](http://www.larronlab.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101421-0****Hillmann Environmental Group, L.L.C.**

1600 Route 22 East  
Union, NJ 07083-1597  
Contact: Ms. Marianne Hillmann  
Phone: 908-688-7800  
Fax: 908-686-2636  
E-Mail: [hecopa@penn.com](mailto:hecopa@penn.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101424-0****TRC Environmental Corporation**

5 Waterside Crossing  
Windsor, CT 06095  
Contact: Mr. Lance R. Cotton  
Phone: 860-289-8631  
Fax: 860-298-6399

URL: <http://www.trcsolutions.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101425-0****Marine Chemist Service, Inc.**

11850 Tug Boat Lane  
Newport News, VA 23606  
Contact: Ms. Tina Greer  
Phone: 757-873-0933  
Fax: 757-873-1074  
E-Mail: [marchem@visi.net](mailto:marchem@visi.net)  
URL: <http://www.marinechemist.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101433-0****Dames & Moore, Inc.**

5 Industrial Way  
Salem, NH 03079  
Contact: Mr. Douglas R. Lawson  
Phone: 603-893-0616  
Fax: 603-893-6240

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101440-0

**RI Analytical Laboratories, Inc.**

41 Illinois Avenue  
Warwick, RI 02888-3007  
Contact: Mr. Eric Neff  
Phone: 401-737-8500  
Fax: 401-738-1970

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101442-0

**ASBESTECH**

6825 Fair Oaks Blvd., Suite 103  
Carmichael, CA 95608  
Contact: Mr. Tommy Conlon  
Phone: 916-481-8902  
Fax: 916-481-3975  
E-Mail: asbestoslab@hotmail.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101457-0

**Assaigai Analytical Laboratories, Inc.**

7300 Jefferson NE  
P.O. Box 90430  
Albuquerque, NM 87199-0430  
Contact: Mr. William P. Biava  
Phone: 505-822-8061  
Fax: 505-822-8063  
E-Mail: bjiava@swcp.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101459-0

**Forensic Analytical**

3777 Depot Road, Suite 409  
Hayward, CA 94545-2761  
Contact: Mr. David Sandusky  
Phone: 510-887-8828  
Fax: 510-887-4218  
E-Mail: Daves@forensica.com  
URL: <http://www.forensica.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101459-1

**Forensic Analytical Specialties, Inc.**

2959 Pacific Commerce Drive  
Rancho Domingues, CA 90221  
Contact: Matilde Antillon  
Phone: 310-763-2374  
Fax: 310-763-8684

URL: <http://www.forensica.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101463-0

**Northern Testing Laboratories, Inc.**

3330 Industrial Avenue  
Fairbanks, AK 99701-7395  
Contact: Mr. Michael R. Pollen  
Phone: 907-456-3116  
Fax: 907-456-3125  
E-Mail: mrp@NTLALASKA.com  
URL: <http://www.NTLALASKA.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101505-0

**Los Angeles Unified School District**

BSC Annex, Env. Health & Safety Branch  
1449 So. San Pedro Street  
Los Angeles, CA 90015  
Contact: Ms. Greta Galoustian  
Phone: 213-743-5086  
Fax: 213-749-7201  
E-Mail: ggaloust@lausd.k12.ca.us

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101506-0

**Environmental Health Laboratories**

St. Louis County Department of Health  
111 So. Meramec  
Clayton, MO 63105-1711  
Contact: Dr. Robert A. Nicolotti  
Phone: 314-615-6830  
Fax: 314-854-6648  
E-Mail: robert\_nicolotti@co.stlouisco.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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NVLAP LAB CODE 101510-0

**Fibertec, Inc.**

4291 Veterans Way, Suite A  
Holt, MI 48842  
Contact: Mr. Phillip A. Peterson  
Phone: 517-699-0345  
Fax: 517-699-0388  
E-Mail: asbestos@fibertec-usa.com  
URL: <http://www.asbestos@fibertec-usa.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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NVLAP LAB CODE 101514-0

**EnviroMed Services, Inc.**

25 Science Park  
New Haven, CT 06511  
Contact: Mr. Joseph Pasquariello  
Phone: 203-786-5580  
Fax: 203-786-5579

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101515-0

**Law Engineering and Environmental Services, Inc.**

4919 West Laurel Street  
Tampa, FL 33607  
Contact: Mr. Monte Hall  
Phone: 813-289-0750  
Fax: 813-289-5474  
E-Mail: mhall@lawco.com  
URL: <http://www.law-USA.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101515-1

**Law Engineering and Environmental Services, Inc.**

5845 N.W. 158th Street  
Miami Lakes, FL 33014  
Contact: Chris DuBour  
Phone: 305-826-5588  
Fax: 305-826-1799

URL: <http://www.law-USA.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101523-0

**DHMH-Air Quality Laboratory**

201 West Preston Street  
P.O. Box 2355  
Baltimore, MD 21201-2355  
Contact: Ms. Yvonne Tai-Sen-Choy  
Phone: 410-767-5948  
Fax: 410-333-5403  
E-Mail: taisenchoy@DHMH.state.md.us  
URL: <http://www.charm.net/~epi6/labs.htm>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101539-0

**Puget Sound Naval Shipyard**

Code 134, Bldg. 371  
1400 Farragut Ave.  
Bremerton, WA 98314-5000  
Contact: Mr. Michael Heaton  
Phone: 360-476-8091  
Fax: 360-476-5587  
E-Mail: [heatonm@psns.navy.mil](mailto:heatonm@psns.navy.mil)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101545-0

**Nova Consulting Group, Inc.**

1107 Hazeltine Boulevard, Suite 400  
Chaska, MN 55318-1008  
Contact: Mr. Steve Cummings  
Phone: 612-448-9393  
Fax: 612-448-9572  
E-Mail: [Novasbc@aol.com](mailto:Novasbc@aol.com)  
URL: <http://www.novaconsulting.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101558-0

**Con Edison, EH&S - ChemLab**

31-01 20th Avenue, Bldg. 138  
Long Island City, NY 11105-2048  
Contact: Mr. Edward Chin  
Phone: 718-204-4148  
Fax: 718-956-8058

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101567-0

**South Coast Air Quality Management District**

21865 E. Copley Drive  
Diamond Bar, CA 91765-4182  
Contact: Ms. Corazon B. Choa  
Phone: 909-396-2172  
Fax: 909-396-2175  
E-Mail: [cchoa@aqmd.gov](mailto:cchoa@aqmd.gov)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101572-0

**South Carolina Department of Health & Environmental Control**

Division of Air Quality Analysis  
8231 Parklane Road  
Columbia, SC 29223-4903  
Contact: Mr. Scott A. Reynolds  
Phone: 803-896-0902  
Fax: 803-896-0980  
E-Mail: [reynolds@columb36.dhec.state.sc.us](mailto:reynolds@columb36.dhec.state.sc.us)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101578-0

**AGX, Inc.**

50 Progress Avenue  
Cranberry Township, PA 16066  
Contact: Mr. Daniel Winkle  
Phone: 724-776-1905  
Fax: 724-776-5714

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101580-0

**Precision Testing Laboratories, Inc.**

1909 S. Eastern  
Moore, OK 73160-6060  
Contact: Mr. C. Jack Harrel  
Phone: 405-793-1468  
Fax: 405-793-1489  
E-Mail: [cjharrel@flash.net](mailto:cjharrel@flash.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101587-0****Environmental Enterprise Group(EEG), Inc.**

220 North Knoxville, Suite 200  
Russellville, AR 72801  
Contact: Mr. Keith Zimmerman  
Phone: 501-968-6767  
Fax: 501-968-1956  
E-Mail: KZimmerman@3wco.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101593-0****National Environmental Reference Laboratory**

C/O US Geological Survey, MS PHL/NERL  
P.O. Box 25046  
Denver, CO 80225-0046  
Contact: Mr. Bruce Hills  
Phone: 303-236-3455 x500  
Fax: 303-236-3440  
E-Mail: bhills@foh.dhhs.gov

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101594-0****TolTest, Inc.**

1915 North 12th Street  
P.O. Box 2186  
Toledo, OH 43624-1305  
Contact: Ms. Susan Pellitieri  
Phone: 419-241-7175  
Fax: 419-241-1808  
E-Mail: spellitieri@toltest.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101595-0****Envirotest, Inc.**

3902 Braxton  
Houston, TX 77063-6304  
Contact: Dr. James D. Murphy  
Phone: 713-782-4411  
Fax: 713-782-3428  
E-Mail: murphy@envirotestinc.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101611-0****Applied Environmental, Inc.**

11800 Sunrise Valley Drive, Suite 1200  
Reston, VA 20191  
Contact: Ms. Jana H. Ambrose  
Phone: 703-648-0822  
Fax: 703-648-0575

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101618-0****Ambient Group, Inc.**

10 Morris Ave.  
Glen Cove, NY 11542  
Contact: Mr. William Esposito, Jr.  
Phone: 516-609-0009  
Fax: 212-463-9397

URL: <http://www.Ambientgroup.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101626-0****GSC Environmental Laboratories, Inc.**

1527 Crescent Drive  
Augusta, GA 30909  
Contact: Dr. Andrew N. McGovern  
Phone: 706-737-0185  
Fax: 706-737-0743  
E-Mail: gscaugusta@earthlink.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101631-0****Pacific Rim Environmental, Inc.**

6510 Southcenter Boulevard  
Tukwila, WA 98188  
Contact: Mr. William F. Golloway  
Phone: 206-244-8965  
Fax: 206-244-9096

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101646-0

**Eastern Analytical Services, Inc.**

4 Westchester Plaza  
Elmsford, NY 10523-1610  
Contact: Mr. Paul Stascavage  
Phone: 914-592-8380  
Fax: 914-592-8956  
E-Mail: PaulS@EASInc.com  
URL: <http://www.EASInc.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101649-0

**Asbestos Consulting & Testing (ACT)**

14953 West 101st Terrace  
Lenexa, KS 66215  
Contact: Ms. Tami L. Van  
Phone: 913-492-1337  
Fax: 913-492-1392

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101661-0

**Aurora Consolidated Laboratories**

8901 W. Lincoln Avenue  
West Allis, WI 53227  
Contact: Dr. Leon Saryan  
Phone: 414-328-7946  
Fax: 414-328-8560

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101703-0

**U.S. EPA - National Enforcement Investigations Center**

Box 25227 Bldg. 53, Denver Federal Ctr.  
Denver, CO 80225  
Contact: Ms. Peggy J. Forney  
Phone: 303-236-6079  
Fax: 303-236-5116  
E-Mail: [forney.peggy@epa.gov](mailto:forney.peggy@epa.gov)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101704-0

**Allegheny Asbestos Analysis**

416 Anthony Street  
Carnegie, PA 15106  
Contact: Ms. Tammy Seiler  
Phone: 412-278-5400  
Fax: 412-278-5404  
E-Mail: [tseiler@gloenvmgmt.com](mailto:tseiler@gloenvmgmt.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101727-0

**AnalyticalLab**

8270 Archer Avenue  
Willow Springs, IL 60480  
Contact: Mr. Richard J. Langenderfer  
Phone: 708-839-1338  
Fax: 708-839-6970

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101732-0

**United Analytical Services, Inc.**

1515 Brook Drive  
Downers Grove, IL 60515-1024  
Contact: Dr. Charles D. Byers  
Phone: 630-691-8271  
Fax: 630-691-1819  
E-Mail: [uasinc@flash.net](mailto:uasinc@flash.net)  
URL: <http://www.flash.net/~uasinc.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101735-0****Jimmie Ann Bolton**

2105 Nathan Drive  
Austin, TX 78728-4530  
Contact: Ms. Jimmie Ann Bolton  
Phone: 512-251-8388  
Fax: 512-251-8388  
E-Mail: jabolton@earthlink.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101759-0****Comprehensive Health Services-Environmental Health PLM Laboratory**

Environmental Health PLM Laboratory  
CHS-022  
Kennedy Space Center, FL 32899  
Contact: Ms. Joanne W. Creech  
Phone: 321-867-9014  
Fax: 321-867-3694  
E-Mail: joanne.creech-1@kmail.ksc.nasa.gov

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101768-0****Carolina Environmental, Inc.**

102-H Commonwealth Court  
Cary, NC 27511  
Contact: Dr. Tianbao Bai  
Phone: 919-481-1413  
Fax: 919-481-1442

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101775-0****American Asbestos Laboratories, Inc.**

14505 Commerce Way, Suite 400  
Miami Lakes, FL 33016  
Contact: Dr. Daniel J. Cottrell  
Phone: 305-374-8300  
Fax: 305-374-9004  
E-Mail: eegmiami@mindspring.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101781-0****Covino Environmental Associates, Inc.**

300 Wildwood Avenue  
Woburn, MA 01801  
Contact: Ms. Ann D. Eckmann  
Phone: 781-933-2555  
Fax: 781-932-9402  
E-Mail: covino@tiac.net  
URL: <http://www.covinoenvironmental.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101793-0****A & B Environmental Services, Inc.**

1643 Federal Road  
Houston, TX 77015  
Contact: Mr. Robert L. Voorhies  
Phone: 713-453-6060  
Fax: 713-453-6091  
E-Mail: aandblab@flash.net  
URL: <http://www.ABLABS.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101803-0****CAMCO Lab**

11040 Rose Avenue  
Fontana, CA 92337-7051  
Contact: Ms. Pamela Landreth  
Phone: 909-428-3099  
Fax: 909-428-3098

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101832-0**

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**A.R.C. Laboratories, Inc.**

1323 9th Avenue South  
Grand Forks, ND 58201  
Contact: Mr. Joseph J. Worman  
Phone: 701-772-6496  
Fax: 701-772-6416  
E-Mail: arclabs@arclabs.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101864-0**

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**Design for Health Environmental Services**

3574 Kettner Blvd.  
San Diego, CA 92101  
Contact: Mr. Kabir Shefa  
Phone: 619-291-1777  
Fax: 619-291-4318  
E-Mail: DFHPRD@AOL.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101848-0**

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**Environmental Testing, Inc.**

100 South Cass Street  
P.O. Box 138  
Middletown, DE 19709-0138  
Contact: Ms. Lee Ann Shinaberry  
Phone: 302-378-9881  
Fax: 302-378-9107  
E-Mail: LEEANN.ECSI@DEL.NET

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101868-0**

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**Bella Donna Labs Inc.**

Environmental Consultants and Laboratory  
3031 North 114th Street  
Wauwatosa, WI 53222  
Contact: Mr. Aleksey Torosin  
Phone: 414-476-3131  
Fax: 414-476-2201

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101853-0**

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**RCM Laboratories, Inc.**

5400 East Avenue, Second Floor  
Countryside, IL 60525  
Contact: Mr. Thomas P. Marlin  
Phone: 708-485-8600  
Fax: 708-485-8607

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101870-0**

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**Sun City Analytical, Inc.**

1409 Montana  
El Paso, TX 79902  
Contact: Ms. Priscilla Acuna  
Phone: 915-533-8840  
Fax: 915-533-8843  
E-Mail: scai@flash.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101855-0**

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**Analytical Industries, Inc.**

6025 Kentucky Dam Road  
P.O. Box 3327  
Paducah, KY 42003  
Contact: Mr. Steve Stamper  
Phone: 270-898-8683  
Fax: 270-898-3531  
E-Mail: aii@apex.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101871-0**

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**Apollo Environmental, Inc.**

11553 U.S. Highway 41 South  
P.O. Box 239  
Gibsonton, FL 33534-9720  
Contact: Mr. Michael L. Williamson  
Phone: 813-671-3999  
Fax: 813-677-3422  
E-Mail: LaFroice@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001



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**NVLAP LAB CODE 101872-0****Micro Analytical Laboratories, Inc.**

5900 Hollis Street, Suite M  
Emeryville, CA 94608-2008  
Contact: Mr. Frank Raviola  
Phone: 510-653-0824  
Fax: 510-653-1361  
E-Mail: microlab@labmicro.com  
URL: <http://www.labmicro.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101882-0****Environmental Hazards Services, L.L.C.**

7469 White Pine Road  
Richmond, VA 23237  
Contact: Ms. Irma Faszewski  
Phone: 804-275-4788  
Fax: 804-275-4907  
E-Mail: [managerqac@leadlab.com](mailto:managerqac@leadlab.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 101884-0****Concord Analysis, Inc.**

9960 Canoga Ave., Suite D8  
Chatsworth, CA 91311-6704  
Contact: Ms. Johanna Fann  
Phone: 818-407-0128  
Fax: 818-882-9409

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101890-0****Mountain Laboratories**

10905 East Montgomery Avenue, Suite 1  
Spokane, WA 99206  
Contact: Ms. Karen L. Drader  
Phone: 509-924-9236  
Fax: 509-924-2287  
E-Mail: [mcskaren@myavista.com](mailto:mcskaren@myavista.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101891-0****Asbestos TEM Laboratories, Inc.**

1409 Fifth Street, Suite C  
Berkeley, CA 94710  
Contact: Mr. R. Mark Bailey  
Phone: 510-528-0108  
Fax: 510-528-0109  
E-Mail: [MBaileyASB@aol.com](mailto:MBaileyASB@aol.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101894-0****Midwest Laboratories, Inc.**

6246 Joliet Road, Suite 4  
Countryside, IL 60525  
Contact: Mr. James P. Hahn  
Phone: 708-354-7117  
Fax: 708-354-7142

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101895-0

**McCall and Spero Environmental, Inc.**

13005 Middletown Industrial Blvd.  
Suite H  
Louisville, KY 40223  
Contact: Mr. R. Dale McCall  
Phone: 502-244-7135  
Fax: 502-244-7136  
E-Mail: customerservice@mselabs.com  
URL: <http://www.mselabs.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101896-0

**Reservoirs Environmental Services, Inc.**

1827 Grant Street  
Denver, CO 80203  
Contact: Ms. Jeanne Spencer Orr  
Phone: 303-830-1986  
Fax: 303-863-9196  
E-Mail: [residen@rmi.net](mailto:residen@rmi.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101902-0

**E. M. Analytical, Inc.**

8000 North Ocean Drive  
Dania, FL 33004-3078  
Contact: Ms. Pat Blackwelder  
Phone: 305-751-1184  
Fax: 954-921-6747  
E-Mail: [pblackwelder@rsmas.miami.edu](mailto:pblackwelder@rsmas.miami.edu)

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101904-0

**Scientific Laboratories, Inc.**

13635 Genito Road  
Midlothian, VA 23112  
Contact: Mr. Rob Fleet  
Phone: 804-763-1200  
Fax: 804-763-1800  
E-Mail: [rob\\_fleet@hotmail.com](mailto:rob_fleet@hotmail.com)  
URL: <http://www.scilabs.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101904-1

**Scientific Laboratories, Inc.**

117 East 30th Street  
New York, NY 10016  
Contact: Dr. Robert E. Tompkins  
Phone: 212-679-8600  
Fax: 212-679-9392  
E-Mail: [rtomplins@scilabs.com](mailto:rtomplins@scilabs.com)  
URL: <http://www.scilabs.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101909-0

**Analytical Labs San Francisco, Inc.**

467 Potrero Avenue  
San Francisco, CA 94110  
Contact: Ms. Olga Kist  
Phone: 415-552-4595  
Fax: 415-552-0730  
E-Mail: [alsf@wenet.net](mailto:alsf@wenet.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101910-0

**PBS Environmental Building Consultants, Inc.**

1220 SW Morrison Street, Suite 600  
Portland, OR 97205-2225  
Contact: Mr. Rollie Champe  
Phone: 503-248-1939  
Fax: 503-248-0223

URL: <http://www.pbsenv.com/pbsinfo>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 101917-0

**DataChem Laboratories**

4388 Glendale-Milford Road  
Cincinnati, OH 45242-3706  
Contact: Ms. Anna Marie Ristich  
Phone: 513-733-5336  
Fax: 513-733-5347  
E-Mail: [amristich@datachemlabs.com](mailto:amristich@datachemlabs.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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NVLAP LAB CODE 101920-0

**Lab/Cor, Inc.**

7619 6th Avenue, NW  
Seattle, WA 98117-4037  
Contact: Mr. John Harris  
Phone: 206-781-0155  
Fax: 206-789-8424  
E-Mail: [mail@labcor.net](mailto:mail@labcor.net)  
URL: <http://www.labcor.net>

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101926-0

**Environmental Management Consultants, Inc.**

7342 East Thomas Road  
Scottsdale, AZ 85251-7216  
Contact: Mr. Kurt A. Kettler  
Phone: 480-990-2069  
Fax: 480-990-8468  
E-Mail: [kkettler@earthlink.net](mailto:kkettler@earthlink.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101941-0

**Kevco Services, Inc.**

890 Pittsburgh Road  
Butler, PA 16002-8901  
Contact: Mr. George M. Beck  
Phone: 724-586-6343  
Fax: 724-586-2172

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 101948-0

**MACS Lab, Inc.**

2070A Walsh Avenue  
Santa Clara, CA 95050-2531  
Contact: Mr. James A. Richards  
Phone: 408-727-9727  
Fax: 408-727-7065  
E-Mail: [jrichards@macslab.com](mailto:jrichards@macslab.com)  
URL: <http://www.macslab.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 101949-0****LEX Scientific Inc.**

2 Quebec Street, Suite 204  
Guelph Ontario N1H 2T3  
CANADA

Contact: Ms. Kim O'Neill

Phone: 519-824-7082

Fax: 519-824-5784

E-Mail: LEXSCI@SENTEX.NET

URL: <http://www.sensex.net/~LEXSCI>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 101959-0****QuanTEM Laboratories, LLC**

2033 Heritage Park Drive

Oklahoma City, OK 73120-7579

Contact: Mr. John E. Barnett

Phone: 405-755-7272

Fax: 405-755-2058

E-Mail: [quantem@ionet.net](mailto:quantem@ionet.net)

URL: <http://www.quantem.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101950-0****WKP Laboratories, Inc.**

228 E. 45th St. 10 Floor

New York City, NY 10017

Contact: Mr. Fabio J. Pedone

Phone: 212-922-0077

Fax: 212-922-0630

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101967-0****NY Environmental & Analytical Labs, Inc.**

88 Harbor Road

Port Washington, NY 11050

Contact: Mr. Li Tsang

Phone: 516-944-9500

Fax: 516-944-9507

E-Mail: [NYEA@YAHOO.COM](mailto:NYEA@YAHOO.COM)

---

**NVLAP LAB CODE 101953-0****JLC Environmental Consultants, Inc.**

200 Park Avenue South, Suite 1001

New York, NY 10003

Contact: Mr. Al Wallner

Phone: 212-420-8119

Fax: 212-420-6092

E-Mail: [JLCenviron@aol.com](mailto:JLCenviron@aol.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 101973-0****Law Engineering and Environmental Services, Inc.**

7616 LBJ Freeway, Suite 600

Dallas, TX 75251

Contact: Mr. John R. Cates

Phone: 972-934-0800

Fax: 972-934-1429

E-Mail: [jcates@lawco.com](mailto:jcates@lawco.com)

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**NVLAP LAB CODE 101958-0****Athenica Environmental Services, Inc.**

45-09 Greenpoint Avenue

Long Island City, NY 11104

Contact: Mr. Spiro Dongaris

Phone: 718-784-7490

Fax: 718-784-4085

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001



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**NVLAP LAB CODE 101977-0****ACM Environmental, Inc.**

229 South Michigan Street  
South Bend, IN 46601  
Contact: Mr. Michael A. Dials  
Phone: 219-234-8435  
Fax: 219-234-6800

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102001-0****Testing Mechanics Corp.**

3770 Merrick Road  
Seaford, NY 11783-2815  
Contact: Mr. Kevin Tumulty  
Phone: 516-221-3800  
Fax: 516-221-3810  
E-Mail: LITUMULTY@AOL.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101990-0****Iowa Environmental Services, Inc.**

4801 Grand Avenue  
Des Moines, IA 50312  
Contact: Mr. Richard E. Soyer  
Phone: 515-279-8042  
Fax: 515-279-1853

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102003-0****GLE Associates, Inc.**

1451 Channelside Drive, Suite 200  
Tampa, FL 33605  
Contact: Ms. Jennifer Workman  
Phone: 813-241-8350  
Fax: 813-241-8737  
E-Mail: jworkman@gleassociates.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 101997-0****Hygieneering, Inc.**

7575 Plaza Court  
Willowbrook, IL 60521  
Contact: Ms. Jacqueline M. Cadwallader  
Phone: 630-654-2550  
Fax: 630-789-3813

URL: <http://www.hygieneering.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 102005-0****University of Alabama Asbestos Laboratory**

Bryant Drive - Martha Parham West  
P.O. Box 870388  
Tuscaloosa, AL 35487-0388  
Contact: Mr. John Sikes  
Phone: 205-348-4667  
Fax: 205-348-9878  
E-Mail: jsikes@ccs.us.edu  
URL: <http://bama.ua.edu/~deip/envprogs.html#LAB>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102000-0****Louisiana Department of Environmental Quality  
Microanalytical Lab**

Microanalytical Lab  
8000 GSRI Avenue, Building #402  
Baton Rouge, LA 70820  
Contact: Ms. Pamela D. Ellis  
Phone: 225-765-0876  
Fax: 225-765-0048  
E-Mail: [pame@deq.state.la.us/](mailto:pame@deq.state.la.us/)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102006-0****Solar Environmental Services, Inc.**

1131 E. 76th Avenue, Suite 102  
Anchorage, AK 99518  
Contact: Ms. Gracita O. Torrijos  
Phone: 907-349-7705  
Fax: 907-349-7944  
E-Mail: [sesenvir@alaska.net](mailto:sesenvir@alaska.net)  
URL: <http://www.alaska.net/~sesenvir>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102008-0

**Micro Air of Texas, Inc.**

1052 Hercules Drive  
Houston, TX 77058  
Contact: Mr. Eric Eitzen  
Phone: 281-280-9965  
Fax: 281-280-9847

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102010-0

**Fluor Fernald, Inc., Analytical Laboratory Services**

P.O. Box 538704  
Cincinnati, OH 45253-8704  
Contact: Ms. Amy Meyer  
Phone: 513-648-5423  
Fax: 513-648-5198  
E-Mail: amy\_meyer@fernald.gov

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102011-0

**Airtek Environmental Corp.**

39 West 38th Street, 12th Floor  
New York, NY 10018  
Contact: Mr. Saad Zouak  
Phone: 212-768-0516  
Fax: 212-768-0759

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102012-0

**JMS Environmental Associates, Ltd.**

816 Burr Oak Drive  
Westmont, IL 60559  
Contact: Mr. John Aschbacher  
Phone: 630-655-8500  
Fax: 630-655-8724  
E-Mail: jms@starnetinc.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102013-0

**Hi-Tech Environmental and Laboratory Services**

DBA Hi-Tech Environmental & Lab. Svcs.  
5396 Lincoln Ave., Suite A  
Cypress, CA 90630  
Contact: Ms. Gwenda Hatcher  
Phone: 714-827-0693  
Fax: 714-827-0695  
E-Mail: Hitechol@ix.netcom.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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NVLAP LAB CODE 102021-0

**Safe Environment of America, Inc.**

dba Med-Tox Northwest  
3902 West Valley Highway North, Ste. 502  
Auburn, WA 98002  
Contact: Ms. Kimberly Brooks  
Phone: 253-351-0677  
Fax: 253-351-0688  
E-Mail: medtownw@msn.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 102025-0

**OCCU-TEC, Inc.**

6700 Corporate Drive, Suite 130  
Kansas City, MO 64120  
Contact: Mr. Greg Sharp  
Phone: 816-231-5580  
Fax: 816-231-5641  
E-Mail: occutec@unicom.net  
URL: <http://www.occutec.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102029-0****ESG Laboratories**

5933 W. 71st Street  
Indianapolis, IN 46278  
Contact: Ms. Mary Dunlap  
Phone: 317-290-1471  
Fax: 317-290-1670

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102044-0****Loflin Environmental Services, Inc.**

2020 Montrose, Suite 100  
Houston, TX 77006  
Contact: Mr. James Murray  
Phone: 713-521-3300  
Fax: 713-523-0829  
E-Mail: loflin1@ibm.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102031-0****ATC Associates, Inc.**

6746 South Revere Parkway, Suite 180  
Englewood, CO 80112-6708  
Contact: Mr. Jeffrey Lomme  
Phone: 303-799-6100  
Fax: 303-799-3441

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102046-0****Criterion Laboratories, Inc.**

3370 Progress Drive, Suite J  
Bensalem, PA 19020  
Contact: Mr. James A. Weltz  
Phone: 215-244-1300 x25  
Fax: 215-244-4349  
E-Mail: j.weltz@criterionlabs.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102035-0****Law Engineering and Environmental Services, Inc.**

4634 S. 36th Place  
Phoenix, AZ 85040  
Contact: Mr. Michael A. Cook  
Phone: 602-437-0250  
Fax: 602-437-3675  
E-Mail: mcook@lawco.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102047-0****KAM Consultants**

35-40 36th Street  
Long Island City, NY 11106  
Contact: Mr. George Kouvaras  
Phone: 718-729-1997  
Fax: 718-729-1876

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102041-0****R. Robinson Analytical Services, Inc.**

1960 Peyton Drive  
Pensacola, FL 32503  
Contact: Mr. William F. Robin Robinson  
Phone: 850-438-5552  
Fax: 850-432-7394  
E-Mail: rrobinson@gulf.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102050-0****Occupational Health Conservation, Inc.**

1840 Southside Blvd., Suite 3C  
Jacksonville, FL 32216-0317  
Contact: Mr. Gregory Davis  
Phone: 904-725-8279  
Fax: 904-721-2809  
E-Mail: lab@ohcnet.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102053-0****Dove Environmental Corporation**

4715 NW 157th Street, Suite 203  
Miami, FL 33014  
Contact: Mr. Rajendranath Ramnath  
Phone: 305-620-6050  
Fax: 305-620-6350

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102056-0****Steve Moody Micro Services, Inc.**

1510 Randolph St., Suite #602  
Carrollton, TX 75006  
Contact: Mr. Steve Moody  
Phone: 972-446-9482  
Fax: 972-446-9870  
E-Mail: SMMS1@AIRMAIL.NET

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102057-0****Niche Analysis, Inc.**

6 Gramatan Avenue, Suite 404  
Mount Vernon, NY 10550  
Contact: Dr. Thomas Palackal  
Phone: 914-663-8937  
Fax: 914-663-8782

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102061-0****Omni Environmental, Inc.**

13740 Research Blvd., Suite H-5  
Austin, TX 78750  
Contact: Mr. Joseph Mink  
Phone: 512-258-9114  
Fax: 512-258-9115  
E-Mail: jmink@prismnet.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102062-0****National Econ Corporation**

730 El Camino Real  
Tustin, CA 92780  
Contact: Mr. Mark S. Ervin  
Phone: 714-730-9235  
Fax: 714-730-9236  
E-Mail: NationalEconCorp@earthlink.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102063-0****NVL Laboratories, Inc.**

4708 Aurora Avenue N.  
Seattle, WA 98103  
Contact: Mr. Nghiep Vi Ly  
Phone: 206-547-0100  
Fax: 206-634-1936  
E-Mail: munaf@nvllabs.com  
URL: <http://www.nvllabs.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001



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**NVLAP LAB CODE 102065-0****Wonder Makers Environmental, Inc.**

2117 Lane Boulevard  
P.O. Box 50209  
Kalamazoo, MI 49005-0209  
Contact: Dr. Michael Pinto  
Phone: 616-382-4154  
Fax: 616-382-4161  
E-Mail: [info@wondermakers.com](mailto:info@wondermakers.com)  
URL: <http://www.wondermakers.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 102073-0****Triad Environmental Consulting, Inc.**

309 3rd Avenue  
Huntington, WV 25701  
Contact: Mr. Brian E. Galligan  
Phone: 304-523-2195  
Fax: 304-523-2197  
E-Mail: [Duxster@earthlink.net](mailto:Duxster@earthlink.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102075-0****S&ME, Inc.**

9751 Southern Pine Boulevard  
P.O. Box 7668  
Charlotte, NC 28241-7668  
Contact: Ms. Jane Wasilewski  
Phone: 704-523-4726  
Fax: 704-525-3953  
E-Mail: [jwasilewski@smeinc.com](mailto:jwasilewski@smeinc.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102077-0****Palmetto Laboratory, Inc.**

2351 Fifth Avenue North  
St. Petersburg, FL 33713  
Contact: Mr. John J. Henderson  
Phone: 727-328-9850  
Fax: 727-328-9830

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102078-0****FRS Geotech, Inc.**

1441 West 46th Avenue, Suite 14  
Denver, CO 80211-2338  
Contact: Mr. Ed Raines  
Phone: 303-477-2559  
Fax: 303-477-2580  
E-Mail: [frsgeo@ix.netcom.com](mailto:frsgeo@ix.netcom.com)  
URL: <http://www.netcom.com/frsgeo>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102079-0****SCILAB BOSTON, Inc.**

8 School Street  
East Weymouth, MA 02189  
Contact: Mr. John Sulkowski  
Phone: 781-337-9334  
Fax: 781-337-7642  
E-Mail: [jsulkowski@scilabs.com](mailto:jsulkowski@scilabs.com)  
URL: <http://www.SCILABS.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102081-0****Legend Technical Services, Inc.**

775 Vandalia Street  
St. Paul, MN 55114  
Contact: Ms. Cheryl Sykora  
Phone: 612-642-1150  
Fax: 612-642-1239  
E-Mail: [cas@legend-group.com](mailto:cas@legend-group.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 102082-0****Analytical Environmental Services, Inc.**

3125 Marjan Drive  
Atlanta, GA 30340  
Contact: Mr. Mehmet Yildirim  
Phone: 800-972-4889  
Fax: 770-457-8188

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 102083-0****Twin Ports Testing, Inc.**

1301 N. 3rd Street  
Superior, WI 54880-1131  
Contact: Mr. Greg Heinecke  
Phone: 715-392-7114  
Fax: 715-392-7163  
E-Mail: TPT@GNN.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102085-0****Brewer Environmental Services Industrial Hygiene Group Laboratory**

a div. of Brewer Env. Industries, Inc.  
311B Pacific Street  
Honolulu, HI 96817  
Contact: Mr. Steve Tanaka  
Phone: 808-848-8866  
Fax: 808-847-5267  
E-Mail: stanaka@brewerenv.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 102086-0****DH Analytical Services**

13955 Murphy Road, Suite 208  
Stafford, TX 77477  
Contact: Mr. Joseph Bury  
Phone: 281-208-4569  
Fax: 281-208-4579  
E-Mail: JBURY@evl.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102087-0****Hygeia Laboratories, Inc.**

1300 Williams Drive, Suite A  
Marietta, GA 30066-6299  
Contact: Mr. Clayton Call  
Phone: 770-514-6933  
Fax: 770-514-6966  
E-Mail: call67@atc-enviro.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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**NVLAP LAB CODE 102089-0****Alpine Consulting, Inc.**

1706 N. Circle Drive  
Colorado Springs, CO 80909  
Contact: Mr. Kevin R. Weaver  
Phone: 719-473-2311  
Fax: 719-473-2312

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 102090-0****Bay Area Air Quality Management District**

939 Ellis Street  
San Francisco, CA 94109  
Contact: Mr. James Hesson  
Phone: 415-749-4625  
Fax: 415-749-5101  
E-Mail: jhesson@baaqmd.gov

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102091-0

**Converse Consultants**

4840 Mill Street #5  
Reno, NV 89502  
Contact: Mr. Dan R. Dolk  
Phone: 775-856-3833  
Fax: 775-856-3513

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 102093-0

**EssTek Ohio, Inc.**

6950 Engle Road #B  
Middleburg Heights, OH 44130-3420  
Contact: Mr. Clifford W. Thomas  
Phone: 440-826-4220  
Fax: 440-826-3841

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102101-0

**Taylor Environmental Group, Inc.**

130 Jericho Turnpike  
Floral Park, NY 11001  
Contact: Mr. George Taylor  
Phone: 516-358-2955  
Fax: 516-358-1780  
E-Mail: georget@taylorenvironmental.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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NVLAP LAB CODE 102102-0

**Analytical Chemistry Services (ACS), Dolan Chemical Lab**

Dolan Chemical Lab  
1 Riverside Plaza  
Columbus, OH 43215-2373  
Contact: Mr. Geoffrey E. Campbell  
Phone: 614-836-4210  
Fax: 614-836-4168  
E-Mail: Geoffrey\_E.\_Campbell@AEP.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

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NVLAP LAB CODE 102104-0

**EMSL Analytical, Inc.**

620-G Guilford College Road  
Greensboro, NC 27409  
Contact: Mr. Nathan Durham  
Phone: 336-297-1487  
Fax: 336-297-1676

URL: <http://www.emsl.com/>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 102106-0

**EMSL Analytical, Inc.**

2501 Central Parkway, Suite C-13  
Houston, TX 77092  
Contact: Mr. Darryl Neldner  
Phone: 713-686-3635  
Fax: 713-686-3645

URL: <http://www.emsl.com/>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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NVLAP LAB CODE 102108-0

**m.a.c. Paran Consulting Services, Inc.**

Analytical Laboratory  
4005 Bach Buxton Road  
Amelia, OH 45102  
Contact: Mr. James R. Jones  
Phone: 513-752-9111  
Fax: 513-752-7973

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102111-0

**Cape Environmental Management, Inc.**

2302 Parklake Drive, Suite 200  
Atlanta, GA 30345-2907  
Contact: Mr. Aleksey Reznik  
Phone: 770-908-7200  
Fax: 770-908-7219

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102112-0

**Oklahoma Dept. of Environmental Quality-DEQ Laboratory**

P.O. Box 1677  
Oklahoma City, OK 73101-1677  
Contact: Mr. Chris Armstrong  
Phone: 405-702-9129  
Fax: 405-702-9101  
E-Mail: CHRIS.Armstrong@deqmail.state.ok.us

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102114-0

**EAI, Inc.**

454 Central Avenue  
Jersey City, NJ 07307  
Contact: Mr. Robert Carvalho  
Phone: 201-714-9858  
Fax: 201-714-9895

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102115-0

**Industrial Laboratory**

Norfolk Naval Shipyard  
Building 184, 3rd Fl.  
Portsmouth, VA 23709-5000  
Contact: Mr. Robert West  
Phone: 757-396-3207  
Fax: 757-396-3972  
E-Mail: WestR@nnsy.navy.mil

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102116-0

**Hygeia Laboratories Inc.**

82 W. Sierra Madre Blvd.  
Sierra Madre, CA 91024-2434  
Contact: Mr. Gustavo Delgado  
Phone: 626-355-4711  
Fax: 626-355-4497  
E-Mail: gdelgado77@atc-enviro.com  
URL: <http://home.earthlink.net/delgadog>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102118-0

**Apex Research, Inc.**

8739 Main Street, Suite 1  
Whitmore Lake, MI 48189  
Contact: Mr. Robert Letarte  
Phone: 734-449-9990  
Fax: 734-449-9991

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200002-0

**Cygnacom Solutions, Inc. An Entrust Technologies Company**

7927 Jones Branch Drive, Suite 100 West  
McLean, VA 22102-3305  
Contact: Dr. Santosh Chokhani  
Phone: 703-848-0883  
Fax: 703-848-0960  
E-Mail: [chokhani@cygnacom.com](mailto:chokhani@cygnacom.com)  
URL: <http://cygnacom.com>

**Common Criteria Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i>                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26/A01      | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a     | APE: Protection Profile evaluation                                                                                                                                                           |
| 26/A01b     | ASE: Security Target evaluation                                                                                                                                                              |
| 26/A01c     | EAL1: Evaluation assurance level 1                                                                                                                                                           |
| 26/A01d     | EAL2: Evaluation assurance level 2                                                                                                                                                           |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

26/A01e EAL3: Evaluation assurance level 3  
26/A01f EAL4: Evaluation assurance level 4

**Cryptographic Module Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

- |         |                                                                                                                                                                                                                              |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17/C01  | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3.                                                                                         |
| 17/C01b | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT                                                                                                           |
| 17/C01c | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT                                                                                                           |
| 17/C02  | FIPS-Approved Cryptographic Algorithms (see < <a href="http://csrc.nist.gov/cryptval">http://csrc.nist.gov/cryptval</a> >) as required in FIPS PUB 140-1.                                                                    |

**NVLAP LAB CODE 200004-0****Integrity Design & Test Services, an Entela Company**

37 Ayer Road, Unit #7 & #9  
Littleton, MA 01460  
Contact: Ms. Sherryl Acey  
Phone: 616-247-0515  
Fax: 616-247-7527  
E-Mail: [sacey@entela.com](mailto:sacey@entela.com)  
URL: [integrity@idts.com](http://integrity@idts.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

- |          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200005-0****Motorola EMC Test Services Lab**

20 Cabot Boulevard  
Mansfield, MA 02048-1153  
Contact: Mr. James E. Powers  
Phone: 508-261-5241  
Fax: 508-261-4777  
E-Mail: [LJP018@email.mot.com](mailto:LJP018@email.mot.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200007-0****Lithonia Testing Laboratories**

1335 Industrial Blvd.  
P.O. Box A  
Conyers, GA 30012-9001  
Contact: Mr. James Hospodarsky  
Phone: 770-922-9000 x2424  
Fax: 770-929-8789  
E-Mail: [jhospodarsky@lithonia.com](mailto:jhospodarsky@lithonia.com)

**Energy Efficient Lighting Products**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Luminaires (Lighting Fixtures)**

- |        |           |
|--------|-----------|
| 22/F04 | IES LM-41 |
|--------|-----------|

NVLAP LAB CODE 200010-0

**Tri-State Materials Testing Lab, Inc.**

121 P North Plains Industrial Road  
Wallingford, CT 06492  
Contact: Mr. William Antonetti  
Phone: 203-949-7733  
Fax: 203-949-7735  
E-Mail: mattestlab@aol.com  
URL: <http://www.materials-testing.com>

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Aggregates**

02/A03 ASTM C29  
02/A04 ASTM C40  
02/A07 ASTM C117  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A12 ASTM C136  
02/A15 ASTM D75  
02/A44 ASTM C566

**Cement**

02/A17 ASTM C109  
02/A22 ASTM C183

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A41 ASTM C192  
02/A43 ASTM C1064  
02/G01 ASTM C31/C172/C143/C138/C231

**Road and Paving Materials**

02/M08 ASTM D979  
02/M24 ASTM D2041  
02/M25 ASTM D2726

**Soil and Rock**

02/L02 ASTM D422  
02/L04 ASTM D698  
02/L06 ASTM D1140  
02/L08 ASTM D1557  
02/L13 ASTM D2216  
02/L20 ASTM D4318

**Standard Practices**

02/A38 ASTM E329  
02/A39 ASTM C1077  
02/M26 ASTM D3666

NVLAP LAB CODE 200012-0

**IPS Corporation**

1878-1, Harumiya Ono, Tatsuno-machi,  
Kamiina-gun, Nagano-ken, PO Box 399-0601  
Nagano 399-0601  
JAPAN  
Contact: Mr. Takashi Maruyama  
Phone: +81-266-44-5200  
Fax: +81-266-44-5300  
E-Mail: [maruyama@ips-emc.co.jp](mailto:maruyama@ips-emc.co.jp)  
URL: <http://www.ips-emc.co.jp>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment, Amendment 1:1995, and  
Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of  
Measurement of Radio Interference  
Characteristics of Information Technology  
Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

NVLAP LAB CODE 200013-0

**ENCORP**

615 North Nash Street, Suite 203  
El Segundo, CA 90245  
Contact: Mr. Roger Casillas  
Phone: 310-640-9811  
Fax: 310-640-9804  
E-Mail: [fmateo@encorp.net](mailto:fmateo@encorp.net)  
URL: <http://www.encorp.net>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

## NVLAP LAB CODE 200016-0

**Daybrite Lighting (Genlyte Thomas Group)**
**Photometric Laboratory**

776 S. Green Street

P.O. Box 1687

Tupelo, MS 38802-1687

Contact: Dr. David W. Knoble, P.E.

Phone: 662-842-7212

Fax: 662-841-5596

E-Mail: dknoble@genlytethomas.com

**Energy Efficient Lighting Products**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Luminaires (Lighting Fixtures)**

22/F01 IES LM-10

22/F03 IES LM-35

22/F04 IES LM-41

22/F05 IES LM-46

## NVLAP LAB CODE 200017-0

**DOMUS ITSL**

116 Albert Street, Suite 200

Ottawa Ontario K1P 5G3

CANADA

Contact: Ms. Laurie L. Mack

Phone: 613-755-2215

Fax: 613-230-3274

E-Mail: laurie\_mack@lgs.com

URL: http://www.domus.com

**Cryptographic Module Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

17/C01 NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules."

17/C01a Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3.

17/C01b Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT

17/C01c Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT

17/C02 FIPS-Approved Cryptographic Algorithms (see <<http://csrc.nist.gov/cryptval>>) as required in FIPS PUB 140-1.

## NVLAP LAB CODE 200018-0

**Test-Con Incorporated**

16 East Franklin Street

P.O. Box 3116

Danbury, CT 06813-3116

Contact: Mr. Chin Okwuka

Phone: 203-748-3012

Fax: 203-778-0633

E-Mail: chin@test-con.com

URL: http://www.test-con.com

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code Designation

**Admixtures**

02/A35 ASTM C233

**Aggregates**

02/A03 ASTM C29

02/A04 ASTM C40

02/A05 ASTM C87

02/A06 ASTM C88

02/A07 ASTM C117

02/A09 ASTM C127

02/A10 ASTM C128

02/A12 ASTM C136

02/A15 ASTM D75

02/A44 ASTM C566

**Cement**

02/A17 ASTM C109

02/A51 ASTM C780 (Annex A7)

02/A52 ASTM C1019

**Concrete**

02/A01 ASTM C39

02/A02 ASTM C617

02/A41 ASTM C192

02/A43 ASTM C1064

02/A45 ASTM C42

02/G01 ASTM C31/C172/C143/C138/C231

02/G02 ASTM C173

**Road and Paving Materials**

02/M03 ASTM D140

02/M11 ASTM D1188

02/M25 ASTM D2726

**Soil and Rock**

02/L02 ASTM D422

02/L04 ASTM D698

02/L05 ASTM D854

02/L06 ASTM D1140

02/L07 ASTM D1556

02/L08 ASTM D1557

02/L09 ASTM D1558

02/L13 ASTM D2216

02/L14 ASTM D2217

02/L16 ASTM D2487

02/L17 ASTM D2488

02/L20 ASTM D4318

02/L21 ASTM D2434

02/L22 ASTM D2850

02/L23 ASTM D2922

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

02/L24 ASTM D2974  
02/L25 ASTM D3017  
02/L31 ASTM D2167  
*Standard Practices*  
02/A38 ASTM E329  
02/A39 ASTM C1077

**NVLAP LAB CODE 200019-0****EMSL Analytical, Inc.**

14375 23rd Avenue North  
Minneapolis, MN 55447  
Contact: Ms. Rachel Travis  
Phone: 612-449-4922  
Fax: 612-449-4924

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200020-0****Hubbell Lighting Photometric Laboratory**

2000 Electric Way  
Christiansburg, VA 24073-2502  
Contact: Mr. Steven Regnaud  
Phone: 540-382-6111 x267  
Fax: 540-382-1544  
E-Mail: [slregnau@hubbell-ltg.com](mailto:slregnau@hubbell-ltg.com)  
URL: [www.hubbell-ltg.com/dcfault.htm/photlab.html](http://www.hubbell-ltg.com/dcfault.htm/photlab.html)

**Energy Efficient Lighting Products**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Luminaires (Lighting Fixtures)**

|        |           |
|--------|-----------|
| 22/F01 | IES LM-10 |
| 22/F02 | IES LM-31 |
| 22/F03 | IES LM-35 |
| 22/F04 | IES LM-41 |
| 22/F05 | IES LM-46 |

**NVLAP LAB CODE 200021-0****Wayne Langston, Inc.**

P.O. Box 1377  
League City, TX 77574-1377  
Contact: Mr. Wayne Langston  
Phone: 281-337-6785  
Fax: 281-337-7217  
E-Mail: [langstoninc@msn.com](mailto:langstoninc@msn.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
|----------|-------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200024-0****Enviro Techniques, Inc.**

22 California Avenue  
Paterson, NJ 07503  
Contact: Mr. Frank Marino  
Phone: 973-684-0202  
Fax: 973-684-3007  
E-Mail: [ETICOM@MSN.COM](mailto:ETICOM@MSN.COM)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200027-0****Vartest Laboratories, Inc.**

19 West 36th Street, 10th Floor  
New York, NY 10018-7909  
Contact: Mr. Adam R. Varley  
Phone: 212-947-8391  
Fax: 212-947-8719  
E-Mail: [avarley@vartest.com](mailto:avarley@vartest.com)  
URL: <http://www.vartest.com>

**Carpet and Carpet Cushion**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Tests Applicable to Carpet and Carpet Cushion**

|        |                            |
|--------|----------------------------|
| 03/T01 | AATCC 16 (Option E)        |
| 03/T02 | ASTM D2646 (Secs. 16-24)   |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |

**Tests Applicable to Carpets**

|        |           |
|--------|-----------|
| 03/G01 | AATCC 20  |
| 03/G02 | AATCC 20A |
| 03/G04 | AATCC 165 |



NVLAP LAB CODE 200030-0

**Dodge-Regupol, Inc. Laboratory**

715 Fountain Avenue  
P.O. Box 989  
Lancaster, PA 17608-0989  
Contact: Mr. Clyde T. Diffendall  
Phone: 717-295-3400 x262  
Fax: 717-295-3414

**Commercial Products Testing**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Plastics**

15/A23a ASTM D412 (Test Method A - Dumbell Specimens)  
15/A24 ASTM D573  
15/A25a ASTM D624 (Die B and Die C)  
15/A26 ASTM D2240 (Type A Durometer)  
15/A30 ASTM D297 (Sec. 16; Para. 16.3)

NVLAP LAB CODE 200031-0

**Intertek Testing Services NA Inc.**

8431 Murphy Drive  
Middleton, WI 53562  
Contact: Mr. Edwin (Ned) Hodgson  
Phone: 608-836-4400  
Fax: 608-831-9279  
E-Mail: nhodgson@itsqs.com  
URL: <http://www.worldlab.com>

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Thermal Resistance**

01/T04 ASTM C236

NVLAP LAB CODE 200033-0

**3M Product Safety EMC Laboratory**

410 E. Fillmore Avenue  
Bldg 76-1-01  
St. Paul, MN 55144-1000  
Contact: Mr. Greg Demaray  
Phone: 612-736-4427  
Fax: 612-737-1035  
E-Mail: gedemaray@mmm.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of

measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**Immunity Test Methods:**

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test  
12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test  
12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test  
12/I04 IEC 61000-4-5 (1995): Surge Immunity Test  
12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test  
12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

NVLAP LAB CODE 200034-0

**EMSL Analytical, Inc.**

Westwood Business Park 1801 Royal Lane  
Suite 908  
Dallas, TX 75229  
Contact: Mr. Darryl Neldner  
Phone: 972-831-9725  
Fax: 972-444-0884  
E-Mail: DallasLab@EMSL.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200036-0

**Quest Engineering Solutions, Inc.**

7 Sterling Road  
P.O. Box 125  
N. Billerica, MA 01862  
Contact: Mr. Richard Ferris  
Phone: 978-667-7000  
Fax: 978-667-3388  
E-Mail: d.ferris@QES.com  
URL: <http://www.QES.com>

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

#### NVLAP LAB CODE 200037-0

### Western Analytical Laboratory

12734 Branford Street, Unit #19

Arleta, CA 91331

Contact: Mr. Mike Maladzhikyan

Phone: 818-899-0949

Fax: 818-899-0399

E-Mail: mail@asbestostesting.com

URL: http://www.asbestostesting.com

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: March 31, 2001

#### NVLAP LAB CODE 200039-0

### TUV Telecom Services, Inc.

1775 Old Highway 8, Suite 107/108

St. Paul, MN 55112-1891

Contact: Mr. David A. Freemore

Phone: 651-639-0775

Fax: 651-639-0873

E-Mail: dfreemore@us.tuv.com

URL: http://www.tuv.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Telecommunications Test Methods:

- 12/CS03 CS-03
- 12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
- 12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306

Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection

- 12/T01b 68.316 Hearing Aid Compatibility: technical standards
- 12/T01c 68.302 Environmental simulation (Par. a,b)
- 12/T45 ACA TS-006
- 12/T49 ACA TS-016

#### NVLAP LAB CODE 200040-0

### LG Electronics, Inc., Quality and Reliability Center

36, Munlae-dong, 6-ga Youngdungpo-gu

Seoul 150-096

KOREA

Contact: Mr. Tae-Yeong Oh

Phone: 82 2 2630 3008

Fax: 82 2 2630 3050

E-Mail: tyojlight@lge.co.kr

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

#### Immunity Test Methods:

- 12/101 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
- 12/102 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
- 12/103 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
- 12/104 IEC 61000-4-5 (1995): Surge Immunity Test
- 12/105 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
- 12/107 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 200041-0****Kingston Environmental Laboratory**

1600 S.W. Market  
Lee's Summit, MO 64081-3109  
Contact: Ms. Melissa McKee  
Phone: 816-246-8746  
Fax: 816-525-5027  
E-Mail: info@kingstonenv.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200044-0****U.S. Army Center for Health Promotion and Preventive Medicine**

Attn: MCHB-TS-L, Bldg. E-2100  
5158 Blackhawk Road  
Aberdeen Proving Ground, MD 21010-5403  
Contact: Ms. Rosemary Gaffney  
Phone: 410-436-2208  
Fax: 410-436-8315

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200045-0****Willamette Industries, Inc. West Coast Development Lab**

9130 SW Pioneer Court, Suite D  
Wilsonville, OR 97070  
Contact: Mr. Gary Vosler  
Phone: 503-682-4995  
Fax: 503-682-4545  
E-Mail: gvosler@wii.com

**Commercial Products Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Paper and Related Products**

|        |                          |
|--------|--------------------------|
| 09/E02 | TAPPI T402-OM; ASTM D685 |
| 09/E03 | TAPPI T403-OM; ASTM D774 |
| 09/E05 | TAPPI T410-OM            |
| 09/E06 | TAPPI T411-OM            |
| 09/E08 | TAPPI T414-OM            |
| 09/E17 | TAPPI T494-OM            |
| 09/E20 | TAPPI T809-OM            |
| 09/E21 | TAPPI T818-OM            |
| 09/E22 | TAPPI T807-OM            |
| 09/E25 | TAPPI T826-PM            |
| 09/E27 | TAPPI TM 833-PM          |
| 09/E29 | TAPPI T476-OM            |
| 09/E31 | TAPPI T838-PM            |

|        |                          |
|--------|--------------------------|
| 09/H01 | ASTM D642; TAPPI T804-OM |
| 09/H24 | TAPPI T802-OM            |
| 09/H28 | TAPPI T810-OM            |
| 09/H30 | TAPPI T821-OM            |
| 09/H31 | TAPPI T825-PM            |

**NVLAP LAB CODE 200046-0****Stork-Twin City Testing Corporation**

662 Cromwell Avenue  
St. Paul, MN 55114-1776  
Contact: Mr. Richard S. Alberg  
Phone: 651-659-7528  
Fax: 651-659-7229  
E-Mail: dalberg@tct.storkgroup.com  
URL: http://www.twincitytesting.com

**Acoustical Testing Services**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

|        |             |
|--------|-------------|
| 08/P03 | ASTM C423   |
| 08/P06 | ASTM E90    |
| 08/P10 | ANSI S12.31 |
| 08/P31 | ASTM E336   |
| 08/P32 | ASTM E1007  |
| 08/P37 | ASTM E966   |
| 08/P52 | ISO 3822    |

**NVLAP LAB CODE 200047-0****National Econ Corporation**

4515 Poplar Avenue, Suite 410  
Memphis, TN 38117  
Contact: Mr. Chester V. Ervin  
Phone: 901-761-5431  
Fax: 901-767-2466

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200049-0****Intertek Testing Services NA, Inc.**

7250 Hudson Blvd. Suite 100  
Oakdale, MN 55128  
Contact: Mr. Albert Garlatti  
Phone: 651-730-1188  
Fax: 651-730-1282  
E-Mail: agarlatti@itsqs.com  
URL: http://www.worldlab.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance                                                     |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
|           | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.                                |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

**NVLAP LAB CODE 200050-0****Cooper Lighting - Metalux Research Laboratories**

1101 Southerfield Road  
P.O. Box 1207  
Americus, GA 31709-1207  
Contact: Mr. Gregory B. Bacon  
Phone: 912-924-8000  
Fax: 912-924-5507  
E-Mail: gbacon@cooperlighting.com  
URL: <http://www.cooperlighting.com/metalux/>

**Energy Efficient Lighting Products**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Luminaires (Lighting Fixtures)**

|        |           |
|--------|-----------|
| 22/F04 | IES LM-41 |
|--------|-----------|

**NVLAP LAB CODE 200051-0****AES International**

1004 Calle Labra, 2nd Floor  
R.H. Todd Avenue  
Santurce, PR 00907  
Contact: Mr. Ady Padan  
Phone: 787-722-0220  
Fax: 787-724-5788  
E-Mail: YOTA1@msn.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200052-0****Dell Regulatory Test Laboratories**

One Dell Way  
Round Rock, TX 78682  
Contact: Mr. David Staggs  
Phone: 512-728-3751  
Fax: 512-728-3653  
E-Mail: David\_Staggs@us.dell.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**Immunity Test Methods:**

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

**Acoustical Testing Services**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

|        |          |
|--------|----------|
| 08/P40 | ISO 9296 |
| 08/P41 | ECMA 74  |
| 08/P42 | ECMA 109 |
| 08/P48 | ISO 7779 |

**NVLAP LAB CODE 200053-0****A.O. Smith (Lexington) Engineering Laboratory**

669 Natchez Trace Drive  
Lexington, TN 38351-4198  
Contact: Mr. Hugh Fesmire  
Phone: 901-967-4713  
Fax: 901-968-4164  
E-Mail: HFesmire@aosmith.com



**Efficiency of Electric Motors**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

24/M01      IEEE 112, Method B

**NVLAP LAB CODE 200056-0**

**EMSL Analytical, Inc.**

440 Lawrence Bell Drive, Suite #2

Williamsville, NY 14221

Contact: Mr. Kenneth J. Najuch

Phone: 716-631-5887

Fax: 716-631-7693

E-Mail: knajuch@emsl.com

URL: http://www.emsl.com/

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200058-0**

**Compaq Computer Corp. Emissions Control Lab**

M/C 060607

P.O. Box 692000

Houston, TX 77070-2000

Contact: Mr. Steve Ortmann

Phone: 281-514-4897

Fax: 281-514-8029

E-Mail: Steve.Ortmann@Compaq.Com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Safety Test Methods:**

12/T41 ACA TS-001

12/T50 AS/NZS 3260

**NVLAP LAB CODE 200059-0**

**Northwest EMC, Inc.**

22975 NW Evergreen Parkway, Suite 400

Hillsboro, OR 9712497132

Contact: Mr. Dean Ghizzone

Phone: 503-844-4066

Fax: 503-844-3826

E-Mail: dghizzone@nwemc.com

URL: http://www.nwemc.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200061-0**

**Rhein Tech Laboratories, Inc.**

360 Herndon Parkway, Suite #1400

Herndon, VA 20170-4824

Contact: Mr. Bruno Clavier

Phone: 703-689-0368

Fax: 703-689-2056

E-Mail: bclavier@rheintech.com

URL: http://www.rheintech.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

### NVLAP LAB CODE 200062-0

#### Professional Testing (EMI), Inc.

1601 FM 1460, Suite B  
Round Rock, TX 78664  
Contact: Mr. Jeffrey A. Lenk  
Phone: 512-244-3371  
Fax: 512-244-1846  
E-Mail: jlenk@ptitest.com  
URL: <http://www.ptitest.com>

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

##### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

##### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

##### Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |

|         |                                            |
|---------|--------------------------------------------|
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
|---------|--------------------------------------------|

### NVLAP LAB CODE 200063-0

#### Compatible Electronics, Inc.

2337 Troutdale Drive  
Agoura, CA 91301  
Contact: Mr. Jeff Klinger  
Phone: 818-597-0600  
Fax: 818-597-1187  
E-Mail: jklinger@celectronics.com  
URL: <http://celectronics.com>

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

##### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

##### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

##### Safety Test Methods:

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

##### Telecommunications Test Methods:

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |

NVLAP LAB CODE 200065-0

**Compliance Eng. Svces, Inc., Compliance  
Certification Services**

1366 Bordeaux Drive  
Sunnyvale, CA 94089-1005  
Contact: Mr. Scott Wang  
Phone: 408-752-8166 x116  
Fax: 408-752-8168

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

NVLAP LAB CODE 200066-0

**Washington Laboratories, Ltd.**

7560 Lindbergh Drive  
Gaithersburg, MD 20879  
Contact: Mr. Michael F. Violette  
Phone: 301-417-0220  
Fax: 301-417-9069  
E-Mail: mikev@wll.com  
URL: <http://www.wll.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz

to 30 MHz

12/F01b Radiated Emissions

NVLAP LAB CODE 200067-0

**JMR Environmental Services Inc.**

3491 Kurtz Street  
San Diego, CA 92110  
Contact: Mr. Craig Sobotka  
Phone: 619-222-0544  
Fax: 619-224-7260

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200068-0

**EMC Compliance Mgmt Group, dba Turntech  
Scientific & Instr., Inc.**

670 National Avenue  
Mountain View, CA 94043-2244  
Contact: Mr. Paul F. Chen  
Phone: 650-988-0900  
Fax: 650-988-6647  
E-Mail: pfchen@emclab2000.com  
URL: <http://www.emclab2000.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 200069-0****Elliott Laboratories, Inc.**

684 West Maude Avenue  
Sunnyvale, CA 94086-3518  
Contact: Mr. Thomas H. Parker  
Phone: 408-245-7800 x236  
Fax: 408-245-3499  
E-Mail: tparker@elliottlabs.com  
URL: <http://www.elliottlabs.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code      Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**Safety Test Methods:**

- 12/T41 ACA TS-001
- 12/T50 AS/NZS 3260

**NVLAP LAB CODE 200071-0****Apple Computer, Inc., EMC Compliance Laboratory**

1 Infinite Loop, Mailstop 26-A  
Cupertino, CA 95014-2084  
Contact: Mr. Robert Steinfeld  
Phone: 408-974-2618  
Fax: 408-862-5061  
E-Mail: steinfeld@apple.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code      Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of

measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200076-0****Instrument Specialties Co., Inc.**

P.O. Box 650, Shielding Way  
Delaware Water Gap, PA 18327-0136  
Contact: Mr. James B. Thomson  
Phone: 570-424-8510  
Fax: 570-421-4227  
E-Mail: jim\_thomson@instr.com  
URL: <http://www.instrumentspecialties.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code      Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548



**NVLAP LAB CODE 200077-0**
**Taiwan Tokin EMC Eng. Corp.**

No. 53-11, Tin-Fu, Tsun, Lin-Kou Hsiang  
 Taipei 24443  
 TAIWAN  
 Contact: Mr. Jackie Deng  
 Phone: 886-2-26092133  
 Fax: 886-2-26099303  
 E-Mail: tteme@tpts1.seed.net.tw  
 URL: <http://www.audix.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200078-0**
**Compaq Computer Corp. EMC Test Facility**

301 Rockrimmon Blvd. South  
 Colorado Springs, CO 80919-2398  
 Contact: Mr. Dennis Laurence  
 Phone: 719-548-2080  
 Fax: 719-548-2070  
 E-Mail: [dennis.laurence@compaq.com](mailto:dennis.laurence@compaq.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology                                                      |

**Equipment**

- |         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |
| 12/T51  | AS/NZS 3548                                         |

**NVLAP LAB CODE 200079-0**
**Sporton International, Inc.**

6F, No. 106, Sec. 1, Hsin Tai Wu Road  
 Hsi Chih  
 Taipei Hsien  
 TAIWAN  
 Contact: Mr. W. L. Huang  
 Phone: 886-2-2696-2468  
 Fax: 886-2-2696-2255  
 E-Mail: [kathylin@sporton.com.tw](mailto:kathylin@sporton.com.tw)  
 URL: <http://www.sporton.com.tw>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- |          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200080-0**
**Continental Envirotech, Inc.**

646 West Broadway Road, Suite 401  
 Mesa, AZ 85210-1212  
 Contact: Mr. Stephen P. Kovac  
 Phone: 480-844-1710  
 Fax: 480-844-1752

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200081-0**
**Advanced Energy, Industrial Energy Laboratory**

909 Capability Drive, #2100  
 Raleigh, NC 27606-3870  
 Contact: Mr. Roy B. Miller, P.E.  
 Phone: 919-857-9036  
 Fax: 919-832-2696  
 E-Mail: [rmiller@advancedenergy.org](mailto:rmiller@advancedenergy.org)  
 URL: <http://www.advancedenergy.org>

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

### Efficiency of Electric Motors

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

24/M01 IEEE 112, Method B

NVLAP LAB CODE 200082-0

### PDE Laboratories

950 Calle Negocio

San Clemente, CA 92673-6201

Contact: Mr. Dave Farrant

Phone: 949-361-9189

Fax: 949-361-9597

E-Mail: testsvcs@pdelabs.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

NVLAP LAB CODE 200083-0

### Testwell Laboratories, Inc./Testwell Industries, Inc.

47 Hudson Street

Ossining, NY 10562

Contact: Mr. V. Reddy Kancharla

Phone: 914-762-9000

Fax: 914-762-9638

URL: <http://www.testwelllabs.com>

### Construction Materials Testing

Accreditation Valid Through: June 30, 2001

NVLAP

Code Designation

#### Admixtures

02/A35 ASTM C233

### Aggregates

02/A03 ASTM C29

02/A04 ASTM C40

02/A06 ASTM C88

02/A07 ASTM C117

02/A08 ASTM C123

02/A09 ASTM C127

02/A10 ASTM C128

02/A11 ASTM C131

02/A12 ASTM C136

02/A13 ASTM C142

02/A15 ASTM D75

02/A44 ASTM C566

02/A46 ASTM C535

### Cement

02/A17 ASTM C109

02/A18 ASTM C114

02/A21 ASTM C157

02/A22 ASTM C183

02/A26 ASTM C191

02/A31 ASTM C305

### Concrete

02/A01 ASTM C39

02/A02 ASTM C617

02/A40 ASTM C78

02/A41 ASTM C192

02/A43 ASTM C1064

02/A45 ASTM C42

02/A47 ASTM C457

02/A48 ASTM C856

02/G01 ASTM C31/C172/C143/C138/C231

### Road and Paving Materials

02/M08 ASTM D979

02/M11 ASTM D1188

02/M12 ASTM D1559

02/M19 ASTM D2172

02/M24 ASTM D2041

02/M25 ASTM D2726

### Soil and Rock

02/L02 ASTM D422

02/L04 ASTM D698

02/L05 ASTM D854

02/L06 ASTM D1140

02/L07 ASTM D1556

02/L08 ASTM D1557

02/L13 ASTM D2216

02/L16 ASTM D2487

02/L17 ASTM D2488

02/L20 ASTM D4318

02/L23 ASTM D2922

02/L24 ASTM D2974

02/L25 ASTM D3017

### Standard Practices

02/A38 ASTM E329

02/A39 ASTM C1077

### Steel Materials

02/S01 ASTM A370 (Sec. 5-13)/E8

02/S05 ASTM A370 (Sec. 18)/E18

02/S07 ASTM E709

02/S08 ASTM E165

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200084-0****Windermere Info. Tech. Sys.****Military/Commercial Compliance Lab.**

401 Defense Highway

Annapolis, MD 21401

Contact: Mr. William Banchemo

Phone: 410-266-1737

Fax: 410-266-1751/1725

E-Mail: [bbanchemo@witsusa.com](mailto:bbanchemo@witsusa.com)URL: <http://www.witsusa.com/services/test/com.html>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

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**NVLAP LAB CODE 200085-0****Global EMC Standard Tech. Corp.**

No. 3, Pau-Tou-Tsuo Valley

Chia-Pau Tsuen, Lin Kou Hsiang

Taipei County

TAIWAN

Contact: Mr. Raymond Chang

Phone: 886-2-26035321

Fax: 886-2-26035325

E-Mail: [GESTEK@MS5.HINET.NET](mailto:GESTEK@MS5.HINET.NET)**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of                                                                                                                                  |

Measurement of Radio Interference

Characteristics of Information Technology

Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

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**NVLAP LAB CODE 200087-0****Rogers Labs, Inc.**

4405 W. 259th Terrace

Louisburg, KS 66053

Contact: Mr. Scot D. Rogers

Phone: 913-837-3214

Fax: 913-837-3214

E-Mail: [rogers@micoks.net](mailto:rogers@micoks.net)**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

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**NVLAP LAB CODE 200088-0****Toshiba/Houston Test Laboratory**

13131 W. Little York Road

Houston, TX 77041-5807

Contact: Mr. Willard Gray

Phone: 713-466-0277

Fax: 713-466-8773

**Efficiency of Electric Motors**

Accreditation Valid Through: December 31, 2001

*NVLAP**Code      Designation*

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

24/M01 IEEE 112, Method B

## NVLAP LAB CODE 200090-0

### ProScience Analytical Services, Inc.

22 Cummings Park  
Woburn, MA 01801-2122  
Contact: Mr. Adrian Stanca  
Phone: 781-935-3212  
Fax: 781-932-4857  
E-Mail: PASI96@aol.com  
URL: <http://www.proscience.net>

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: December 31, 2001

### Airborne Asbestos Analysis (TEM)

Accreditation Valid Through: December 31, 2001

## NVLAP LAB CODE 200091-0

### IBM Rochester EMC Lab

3605 North Highway 52, Department 515  
Rochester, MN 55901-7829  
Contact: Mr. John S. Maas  
Phone: 507-253-2426  
Fax: 507-253-1317  
E-Mail: [johnmaas@us.ibm.com](mailto:johnmaas@us.ibm.com)

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

## NVLAP LAB CODE 200092-0

### EMCE Engineering, Inc.

44366 South Grimmer Boulevard  
Fremont, CA 94538-6385  
Contact: Mr. Stephen A. Sawyer  
Phone: 510-490-4307  
Fax: 510-490-3441  
E-Mail: [emceengrg@aol.com](mailto:emceengrg@aol.com)  
URL: <http://www.emcel.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

#### Immunity Test Methods:

- 12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
- 12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
- 12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
- 12/I04 IEC 61000-4-5 (1995): Surge Immunity Test
- 12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
- 12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test

#### Telecommunications Test Methods:

- 12/CS03 CS-03
- 12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
- 12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.;



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|         |                                                            |
|---------|------------------------------------------------------------|
|         | 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                 |

**NVLAP LAB CODE 200093-0****UltraTech Engineering Labs Inc.**

3000 Bristol Circle  
Oakville, Ontario L6H 6G4  
CANADA  
Contact: Mr. Victor Kee  
Phone: 905-829-1570  
Fax: 905-829-8050  
E-Mail: [vhk.ultratech@sympatico.ca](mailto:vhk.ultratech@sympatico.ca)  
URL: <http://www.ultratech-labs.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200094-0****Flextronics EMC Laboratories East Coast Operations**

762 Park Avenue  
Youngsville, NC 27596  
Contact: Mr. Michael Cantwell, P.E.  
Phone: 919-554-0901  
Fax: 919-556-2043

URL: <http://www.flextronics.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|          |                                                                           |
|----------|---------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance |
|----------|---------------------------------------------------------------------------|

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | characteristics of information technology equipment                                                                                                                    |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**Immunity Test Methods:**

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

**NVLAP LAB CODE 200096-0****Key Tronic Corp.**

4424 N. Sullivan Road  
P.O. Box 14687  
Spokane, WA 99214-0687  
Contact: Mr. James L. Adams  
Phone: 509-927-5541  
Fax: 509-927-5258  
E-Mail: [jadams1@keytronic.com](mailto:jadams1@keytronic.com)

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

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|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200097-0****PEP Testing Laboratory**

12-3 FL. No. 27-1, Lane 169, Kang Ning St  
Hsi-Chi  
Taipei Hsien  
TAIWAN  
Contact: Mr. Peter Kao  
Phone: 886-2-2692-2097  
Fax: 886-2-2695-6236  
E-Mail: peplab@ms32.hiner.net

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200098-0****Nortel Networks BVW Lab**

250 Sidney Street  
Belleville, Ontario K8P 3Z3  
CANADA  
Contact: Mrs. Seham Fawzy  
Phone: 613-967-5545  
Fax: 613-967-5417  
E-Mail: sfawzy@nortelnetworks.com

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**NVLAP**

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200099-0****Spectrum Research & Testing Laboratory, Inc.**

No. 101-10, Ling 8, Shan-Tong Li  
Chung-Li, Taoyuan  
TAIWAN  
Contact: Mr. Cheng-Yang Ho  
Phone: 011-886-3-4987684  
Fax: 011-886-3-4986528  
E-Mail: srtlab@ms17.hinet.net  
URL: <http://www.srtlab.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200101-0****Advanced Compliance Laboratory**

6 Randolph Way  
Hillsborough, NJ 08876  
Contact: Mr. Wei Li  
Phone: 732-560-9010  
Fax: 732-560-9173  
E-Mail: weili2@juno.com  
URL: <http://www.ac-lab.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
|           | Amendment 2:1996.                                                                                                           |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

**NVLAP LAB CODE 200102-0****Advance Data Technology Corporation**

No. 47, 14 Ling, Chia Pau Tsuen,  
Lin Kou Hsiang  
Taipei Hsien  
TAIWAN  
Contact: Mr. Harris W. Lai  
Phone: 886-2-2652180  
Fax: 886-2-26052943  
E-Mail: harris@mail.adt.com.tw  
URL: <http://www.adt.com.tw>

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**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200104-0****Asbestos TEM Laboratories, Inc.**

952 Greg Street  
Sparks, NV 89431  
Contact: Mr. R. Mark Bailey  
Phone: 510-528-0108  
Fax: 510-528-0109  
E-Mail: MBaileyASB@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200107-0****Toshiba Corp., Ome Operations**

2-9 Suehiro-cho  
Ome Tokyo 198-8710  
JAPAN  
Contact: Mr. Hiroshi Kiguchi  
Phone: 81-428-33-1170  
Fax: 81-428-30-7911  
E-Mail: hiroshi.kiguchi@toshiba.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
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**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200109-0****A-Pex International Co., Ltd. Yokowa Laboratory**

108 Yokowa-cho, Ise-shi  
Mie-ken 516-1106  
JAPAN  
Contact: Mr. Kazunori Nishimura  
Phone: 81-596-39-1485  
Fax: 81-596-39-0232  
E-Mail: nisimura@a-pex.co.jp  
URL: <http://www.a-pex.co.jp>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
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**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
|----------|-------------------------------------------------------------------------------------------------------------------------------|



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200111-0****TUV Rheinland of North America, Inc.**

12 Commerce Road  
Newtown, CT 06470-1607  
Contact: Mr. Timothy M. Dwyer  
Phone: 203-426-0888 x104  
Fax: 203-270-8883  
E-Mail: [tdwyer@us.tuv.com](mailto:tdwyer@us.tuv.com)  
URL: <http://www.us.tuv.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| Code | Designation |
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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**Immunity Test Methods:**

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

**Safety Test Methods:**

|        |             |
|--------|-------------|
| 12/T41 | ACA TS-001  |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200112-0****IBM Austin EMC**

11400 Burnet Road, M.S. 4469  
Austin, TX 78758-3493  
Contact: Mr. Jerry W. Scibielski  
Phone: 512-838-5816  
Fax: 512-838-7101  
E-Mail: [scib@us.ibm.com](mailto:scib@us.ibm.com)

**Electromagnetic Compatibility & Telecommunications**

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200114-0****Cisco Systems, Inc.**

170 West Tasman Drive  
San Jose, CA 95134-1706  
Contact: Mr. Mark King  
Phone: 408-527-5014  
Fax: 408-526-4184  
E-Mail: [markking@cisco.com](mailto:markking@cisco.com)  
URL: <http://www.cisco.com>

**Electromagnetic Compatibility & Telecommunication**

Accreditation Valid Through: March 31, 2001

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**Emissions Test Methods:**

|           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance                                                     |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
|           | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.                                |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

**NVLAP LAB CODE 200116-0****Nemko EESI, Inc.**

11696 Sorrento Valley Road, Suite F  
San Diego, CA 92121  
Contact: Mr. John Lavery  
Phone: 858-259-4946  
Fax: 858-259-7170  
E-Mail: j\_lavery@eesi.com  
URL: <http://www.eesi.com>

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|------|-------------|
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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200117-0****Universal Compliance Laboratories**

775 B Mabury Road  
San Jose, CA 95133  
Contact: Mr. Bob Cole  
Phone: 408-453-8744  
Fax: 408-453-8747  
E-Mail: [bob@universalcompliance.com](mailto:bob@universalcompliance.com)  
URL: <http://www.universalcompliance.com>

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**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200118-0****Electronic Research & Service Organization/ITRI**

1500 ERSO/ITRI, Bldg. 17, 195-4, Sec. 4  
Chung Hsing Road  
Chutung Hsinchu 310  
TAIWAN  
Contact: Mr. Paul Y. Liao  
Phone: 886-3-5915994  
Fax: 886-3-5825720  
E-Mail: [pyl@itri.org.tw](mailto:pyl@itri.org.tw)

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|------|-------------|

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

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## NVLAP LAB CODE 200119-0

### Garwood Laboratories, Inc.

565 Porter Way  
Placentia, CA 92870-6454  
Contact: Ms. Lisa Rodefald  
Phone: 714-572-2027  
Fax: 714-572-2025  
E-Mail: lisar@garwoodtestlabs.com  
URL: <http://www.garwoodtestlabs.com>

### Electromagnetic Compatibility & Telecommunications

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#### NVLAP

Code Designation

#### Emissions Test Methods:

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

## NVLAP LAB CODE 200120-0

### Chemitox EMC Research, Inc.

14979, Egusa, Sudama-cho, Kitakoma-gun  
Yamanashi-ken 408-0103  
JAPAN  
Contact: Mr. Kohichi Nakayama  
Phone: 81-551-42-4411  
Fax: 81-551-20-6002  
E-Mail: KNAKAYAMA7@aol.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- |           |                                                                                                                                                      |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                        |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and |

Amendment 2:1996.

- |           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

## NVLAP LAB CODE 200121-0

### Cabletron Systems, Inc.

35 Industrial Way  
P.O. Box 5005  
Rochester, NH 03867-5005  
Contact: Mr. John Ballew  
Phone: 603-337-5222  
Fax: 603-337-5163  
E-Mail: [jballew@ctron.com](mailto:jballew@ctron.com)

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

## NVLAP LAB CODE 200124-0

### White Environmental Consultants Inc.

731 I Street, Suite 201  
Anchorage, AK 99501  
Contact: Mr. David O. Milton  
Phone: 907-258-8661  
Fax: 907-258-8662  
E-Mail: [dmilton@wec-laboratories.com](mailto:dmilton@wec-laboratories.com)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200125-0**

**Paradyne Corporation**

8545 126th Avenue N.  
P.O. Box 2826  
Largo, FL 33773-2826  
Contact: Mr. Tom Wissman  
Phone: 727-530-2775  
Fax: 727-532-5552  
E-Mail: twissman@eng.paradyne.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- |          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200129-0**

**AHD**

92723 M-152  
Dowagiac, MI 49047  
Contact: Mr. Edmund (Ted) Chaffee  
Phone: 616-424-7014  
Fax: 616-424-7014  
E-Mail: ahd@localink.net  
URL: <http://www.ahde.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- |          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200131-0**

**Environmental Testing and Monitoring Services, Inc.**

2425 Boward Parkway, Suite 107  
Virginia Beach, VA 23454  
Contact: Mr. Scott J. Eggleston  
Phone: 757-498-7873  
Fax: 757-498-7896

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200132-0**

**USG Research - Construction Systems Laboratory**

700 N. Highway 45  
Libertyville, IL 60048-1296  
Contact: Mr. Richard T. Kaczowski  
Phone: 847-970-5255  
Fax: 847-362-4871  
E-Mail: rkaczowski@usgres.com

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

- |        |                 |
|--------|-----------------|
| 08/P03 | ASTM C423       |
| 08/P06 | ASTM E90        |
| 08/P33 | ASTM E1111      |
| 08/P34 | ASTM E1414      |
| 08/P44 | ISO 354         |
| 08/P45 | ISO 140, Part 3 |
| 08/P50 | ISO 140, Part 9 |

**NVLAP LAB CODE 200133-0**

**Electronics Testing Center, Taiwan**

No.8, Lane 29, Wen-Ming Rd  
Lo-Shan Tsun, Kui-shan Hsiang  
Taoyuan Hsien 333  
TAIWAN  
Contact: Mr. Win-Po Tsai  
Phone: 886-03-3276174  
Fax: 886-03-3276188  
E-Mail: winpo@etc.org.tw

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- |           |                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology           |

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|           |                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------|
|           | equipment, Amendment 1:1995, and<br>Amendment 2:1996.                                                                                |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of<br>Measurement of Radio Interference<br>Characteristics of Information Technology<br>Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital<br>Devices                                                                                     |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz                                                                               |
| 12/F01b   | Radiated Emissions                                                                                                                   |
| 12/T51    | AS/NZS 3548                                                                                                                          |

### NVLAP LAB CODE 200134-0

#### Marathon Electric - Wausau Engineering Lab.

100 East Randolph Street  
P.O. Box 8003  
Wausau, WI 54402-8003  
Contact: Mr. Gene Sickler  
Phone: 715-675-3311 x4155  
Fax: 715-675-8032

#### Efficiency of Electric Motors

Accreditation Valid Through: December 31, 2001

NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

|        |                    |
|--------|--------------------|
| 24/M01 | IEEE 112, Method B |
|--------|--------------------|

### NVLAP LAB CODE 200137-0

#### Philips Electronics Industries (TAIWAN) Ltd.

5, Tze Chiang 1 Road, Chungli Ind. Park  
P.O. Box 123, Chungli  
Chungli, Taoyuan  
TAIWAN  
Contact: Mr. Ronnie Yang  
Phone: 886-2-454-9862  
Fax: 886-3-454-9887  
E-Mail: ronnie.yang@philips.com

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Emissions Test Methods:

|          |                                                                                                                                        |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital<br>Devices                                                                                       |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz                                                                                 |
| 12/F01b  | Radiated Emissions                                                                                                                     |
| 12/T51   | AS/NZS 3548                                                                                                                            |

### NVLAP LAB CODE 200138-0

#### Hewlett Packard, Product Test Lab, San Diego

16399 W. Bernardo Drive  
San Diego, CA 92127-1899  
Contact: Mr. John Hall  
Phone: 858-655-8236  
Fax: 858-655-5951  
E-Mail: john\_hall@HP.com  
URL: http://john\_hall@hp.com

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Emissions Test Methods:

|           |                                                                                                                                                                                    |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment                                             |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment, Amendment 1:1995, and<br>Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of<br>Measurement of Radio Interference<br>Characteristics of Information Technology<br>Equipment                                               |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital<br>Devices                                                                                                                                   |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz                                                                                                                             |
| 12/F01b   | Radiated Emissions                                                                                                                                                                 |
| 12/T51    | AS/NZS 3548                                                                                                                                                                        |

### NVLAP LAB CODE 200139-0

#### PB Fasteners

1700 W. 132nd Street  
P.O. Box 1157  
Gardena, CA 90249-0157  
Contact: Mr. Merle Oglesby  
Phone: 310-323-6222  
Fax: 310-329-4685

#### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Chemical Analysis

*Combustion analysis for carbon, sulfur, oxygen,  
nitrogen, and hydrogen*

|         |          |
|---------|----------|
| FB/1167 | SP 34-11 |
|---------|----------|

#### Dimensional Inspection



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued*****Dimensions of fasteners - hexagon and double hexagon******(12 point) and spline sockets***

FA/539 SAE AS 870  
FA/540 MIL-STD-33787

***External thread parameters - system 21***

FA/379 ANSI/ASME B1.3M  
FA/380 FED-STD-H28/20  
FA/528 MIL-S-7742  
FA/533 SAE AS 8879  
FA/940 ANSI/ASME B1.2

***External thread parameters - system 22***

FA/381 ANSI/ASME B1.3M  
FA/382 FED-STD-H28/20  
FA/383 MIL-S-7742  
FA/534 SAE AS 8879  
FA/941 ANSI/ASME B1.2

***External thread parameters - system 23***

FA/385 ANSI/ASME B1.3M  
FA/386 FED-STD-H28/20  
FA/388 MIL-S-8879  
FA/535 SAE AS 8879  
FB/1169 ANSI/ASME B1.2

***Internal thread parameters - system 21***

FA/391 ANSI/ASME B1.3M  
FA/392 FED-STD-H28/20  
FA/529 MIL-S-7742  
FA/536 SAE AS 8879  
FA/942 ANSI/ASME B1.2

***Internal thread parameters - system 22***

FA/393 ANSI/ASME B1.3M  
FA/394 FED-STD-H28/20  
FA/395 MIL-S-7742  
FA/537 SAE AS 8879  
FA/943 ANSI/ASME B1.2

***Internal thread parameters - system 23***

FA/397 ANSI/ASME B1.3M  
FA/398 FED-STD-H28/20  
FA/399 MIL-S-7742  
FA/538 SAE AS 8879  
FB/1170 ANSI/ASME B1.2

***Surface texture***

FA/439 ANSI/ASME B46.1

***Mechanical and Physical Testing and Inspection******Adhesion of metallic coatings on fasteners***

FA/532 BMS 10-85M Sec. 8.2  
FB/1168 DPS 9.28

***Axial tensile strength of full-size threaded fasteners***

FA/271 MIL-STD-1312-8

***Double shear of externally threaded fasteners***

FA/257 MIL-STD-1312-13

***Fatigue of full-size threaded fasteners***

FA/183 MIL-STD-1312-11

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/176 MIL-STD-1312-5

***Magnetic permeability***

FA/215 MIL-I-17214

***Measurement of fastener coating thickness - eddy-current method***

FA/150 FED TM STD NO. 151 Method 520.1  
FA/152 MIL-STD-1312-12

***Microhardness of fasteners***

FA/189 ASTM E384  
FA/193 MIL-STD-1312-6

***Permanent set test of self-locking nuts***

FA/109 MIL-N-25027  
FB/1160 MIL-N-85729  
FB/1161 MIL-N-85730

***Recess strength test in both the installation and removal directions***

FA/476 MIL-STD-1312-25

***Reusability test of self-locking internally threaded fasteners***

FA/124 MIL-N-25027  
FB/1162 MIL-N-85729  
FB/1163 MIL-N-85730

***Rockwell hardness of fasteners***

FA/201 MIL-STD-1312-6

***Rockwell superficial hardness of fasteners***

FA/209 MIL-STD-1312-6

***Salt spray testing of fasteners***

FA/166 ASTM B117  
FA/168 MIL-STD-1312-1

***Single shear of externally threaded fasteners***

FA/256 MIL-STD-1312-20

***Stress rupture of fasteners***

FA/262 MIL-STD-1312-10

***Tension testing of machined specimens from externally threaded fasteners***

FA/475 ASTM E8

***Test for embrittlement of metallic coated externally threaded fasteners***

FA/525 MIL-STD-1312-5  
FB/1166 QQ-P-416

***Wedge tensile strength of full-size threaded fasteners***

FB/1069 D2-2860

***Wrench torque test of externally wrenching nuts of spline and hexagon and double hexagon (1***

FA/141 MIL-N-25027  
FB/1164 MIL-N-85729  
FB/1165 MIL-N-85730

***Yield strength of full-size externally threaded fasteners***

FA/303 MIL-STD-1312-8

***Metallography******Decarburization and case depth measurement in fasteners***

FA/521 ASTM E384

***Determination of grain size of fasteners***

FA/331 ASTM E112

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407

**Nondestructive Inspection**

*Liquid penetrant inspection of fasteners*

FA/527 ASTM E1417

*Magnetic particle inspection of fasteners*

FA/485 ASTM E1444

**NVLAP LAB CODE 200140-0**

**Inventec Corp. (Taoyuan) EMC Labs**

255, Jen-Ho Road Sec 2, Tachi

Taoyuan

TAIWAN

Contact: Mr. Steve Wang

Phone: 886-3-390-0000

Fax: 886-3-3908052

E-Mail: wang.steve@inventec.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200141-0**

**MAC Fasteners, Inc.**

1110 Enterprise

Ottawa, KS 66067

Contact: Mr. Donald C. Krenkel

Phone: 785-242-8812

Fax: 785-242-4616

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Dimensional Inspection**

*External thread parameters - system 21*

FA/380 FED-STD-H28/20

*External thread parameters - system 22*

FA/382 FED-STD-H28/20

**Mechanical and Physical Testing and Inspection**

*Adhesion of metallic coatings on fasteners*

FA/541 QQ-P-416 Sec. 4.6.2

*Axial tensile strength of full-size threaded fasteners*

FA/799 NASM 1312-8

*Double shear of externally threaded fasteners*

FA/880 NASM 1312-13

*Intergranular corrosion susceptibility in austenitic stainless steel fasteners - nitric aci*

FA/173 ASTM A262 Sec. 15-21, Practice C

*Measurement of fastener coating thickness - dimensional change method*

FA/874 NASM 1312-12

*Measurement of fastener coating thickness - microscopical method*

FA/873 NASM 1312-12

*Microhardness of fasteners*

FA/877 NASM 1312-6

*Recess strength test in both the installation and removal directions*

FA/886 NASM 1312-25

*Rockwell hardness of fasteners*

FA/878 NASM 1312-6

*Rockwell superficial hardness of fasteners*

FB/1004 NASM 1312-6

**Metallography**

*Decarburization and case depth measurement in fasteners*

FA/521 ASTM E384

*Determination of grain size of fasteners*

FA/331 ASTM E112

*Macroscopic examination of fasteners by etching*

FA/511 ASTM E340

*Microscopic examination of fasteners by etching*

FA/512 ASTM E407

**Nondestructive Inspection**

*Liquid penetrant inspection of fasteners*

FA/527 ASTM E1417

*Magnetic particle inspection of fasteners*

FA/485 ASTM E1444

## NVLAP LAB CODE 200142-0

**Lockheed Martin Control Systems EMI**
**Laboratory**

600 Main Street

Johnson City, NY 13790-1888

Contact: Mr. Paul Heiland

Phone: 607-770-3771

Fax: 607-770-3922

E-Mail: paul.h.heiland.jr@lmco.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**MIL-STD-462 : Conducted Emissions:**

12/A01 MIL-STD-462 Method CE01

12/A04 MIL-STD-462 Method CE02

12/A06 MIL-STD-462 Method CE03

12/A08 MIL-STD-462 Method CE04

12/A12 MIL-STD-462 Method CE07

12/A13 MIL-STD-462 Version D Method CE101

12/A14 MIL-STD-462 Version D Method CE102

**MIL-STD-462 : Conducted Susceptibility:**

12/B01 MIL-STD-462 Method CS01

12/B02 MIL-STD-462 Method CS02

12/B05 MIL-STD-462 Method CS06

12/B08 MIL-STD-462 Method CS10

12/B09 MIL-STD-462 Method CS11

12/B10 MIL-STD-462 Method CS12

12/B11 MIL-STD-462 Method CS13

12/B12 MIL-STD-462 Version D Method CS101

12/B17 MIL-STD-462 Version D Method CS114

12/B18 MIL-STD-462 Version D Method CS115

12/B19 MIL-STD-462 Version D Method CS116

**MIL-STD-462 : Radiated Emissions:**

12/D01 MIL-STD-462 Method RE01

12/D02 MIL-STD-462 Method RE02

12/D04 MIL-STD-462 Version D Method RE101

12/D05 MIL-STD-462 Version D Method RE102

**MIL-STD-462 : Radiated Susceptibility:**

12/E01 MIL-STD-462 Method RS01

12/E02 MIL-STD-462 Method RS02

12/E04 MIL-STD-462 Method RS03 employing  
RADHAZ procedures for high level testing  
(Consult laboratory for field strengths  
available)

12/E07 MIL-STD-462 Method RS06

12/E08 MIL-STD-462 Version D Method RS101

12/E09 MIL-STD-462 Version D Method RS103

## NVLAP LAB CODE 200143-0

**Ivaco Rolling Mills, Chemistry Laboratory**

Highway 17, P.O. Box 322

L'Orignal Ontario K0B 1K0

CANADA

Contact: Mr. William V. Berry

Phone: 613-675-4671 x237

Fax: 613-675-6863

E-Mail: wberry@ivacorm.com

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**Chemical Analysis**
*Combustion analysis for carbon, sulfur, oxygen,  
nitrogen, and hydrogen*

FA/455 ASTM E1019

*Optical emission spectrochemical analysis*

FA/457 ASTM E415

## NVLAP LAB CODE 200144-0

**Dexter Fastener Technologies, Inc.**

2110 Bishop Circle E.

Dexter, MI 48130

Contact: Mr. Mike Frazier

Phone: 734-426-5200

Fax: 734-426-5870

E-Mail: mfrazier@dextech.textron.com

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code Designation

**Chemical Analysis**
*Optical emission spectrochemical analysis*

FA/457 ASTM E415

**Dimensional Inspection**
*Dimensions of ISO grade A and B fasteners*

FA/589 JIS B1071

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

*External thread parameters - ISO*

FA/390 ISO 1502

*External thread parameters - system 21*

FA/379 ANSI/ASME B1.3M

*External thread parameters - system 22*

FA/381 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection**
*Axial tensile strength of full-size threaded fasteners*

FA/270 ISO 898-1 Sec. 8.2

*Fatigue of full-size threaded fasteners*

FA/182 ISO 3800-1

## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

### Head soundness testing

FA/614 ISO 898-1 Sec. 8.7

FA/615 JIS B1051 Sec. 4.2.6

### Measurement of fastener coating thickness - magnetic methods

FA/153 ASTM B499

### Measurement of fastener coating thickness - microscopical method

FA/160 ASTM B487

### Microhardness of fasteners

FA/191 ISO 6507-2

### Proof load of full-size externally threaded fasteners

FA/228 ISO 898-1 Sec. 8.4

### Rockwell hardness of fasteners

FA/200 ISO 6508

### Rockwell superficial hardness of fasteners

FA/205 ASTM E18

### Salt spray testing of fasteners

FA/166 ASTM B117

### Tension testing of machined specimens from externally threaded fasteners

FA/282 ISO 898-1

### Torque-tension of full-size threaded fasteners

FA/576 JIS B1084

### Total extension at fracture of externally threaded fasteners

FA/285 ASTM F606 Sec. 3.7

### Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)

FA/571 JIS Z2244

### Wedge tensile strength of full-size threaded fasteners

FA/294 ISO 898-1 Sec. 8.5

### Yield strength of full-size externally threaded fasteners

FA/298 ASTM F606 Sec. 3.2.4

### Metallography

### Decarburization and case depth measurement in fasteners

FA/323 ASTM E1077

### Determination of grain size of fasteners

FA/331 ASTM E112

### Macroscopic examination of fasteners by etching

FA/511 ASTM E340

### Microscopic examination of fasteners by etching

FA/512 ASTM E407

### Surface discontinuities of externally threaded fasteners

FA/359 ISO 6157-1

## NVLAP LAB CODE 200145-0

### Neutron Engineering Inc.

132-1, Lane 329, Sec. 2 Palain Rd Shijir

P.O. Box 187 Neihs

Taipei

TAIWAN

Contact: Mr. George Yao

Phone: 886-2-26465426

Fax: 886-2-26466815

E-Mail: g.yao@neutron.com.tw

URL: <http://www.neutron.com.tw>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

## NVLAP LAB CODE 200147-0

### Electro Magnetic Test, Inc.

1547 Plymouth Street

Mountain View, CA 94043

Contact: Mr. Jay Gandhi

Phone: 650-965-4000

Fax: 650-965-3000

E-Mail: Jgcmr@aol.com

URL: <http://www.emtlab.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|                                         |                                                                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | to 30 MHz                                                                                                                                                                                                                                  |
| 12/F01b                                 | Radiated Emissions                                                                                                                                                                                                                         |
| 12/T51                                  | AS/NZS 3548                                                                                                                                                                                                                                |
| <b>Telecommunications Test Methods:</b> |                                                                                                                                                                                                                                            |
| 12/CS03                                 | CS-03                                                                                                                                                                                                                                      |
| 12/T01                                  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a                                 | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b                                 | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c                                 | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |

**NVLAP LAB CODE 200148-0****Republic Technologies International, Franklin Chemical Laboratory**

Franklin Chemical Laboratory  
1001 Main Street, Gate #3  
Johnstown, PA 15909  
Contact: Mr. Alan K. O'Donnell  
Phone: 814-533-7333  
Fax: 814-533-7319  
E-Mail: alanod@prodigy.net

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code      Designation

**Chemical Analysis**

*Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*

FA/455      ASTM E1019

*Optical emission spectrochemical analysis*

FA/457      ASTM E415

*Solution chemical analysis*

FA/531      ASTM E663

**NVLAP LAB CODE 200151-0****Cosmos Corporation**

319 Akeno, Obata-cho  
Watarai-gun Mie 519-0501  
JAPAN  
Contact: Mr. Kay Hamaguchi  
Phone: 81-596-37-0190  
Fax: 81-596-37-3609  
E-Mail: cosmos@mint.or.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code      Designation

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200152-0****InFocus Systems, Inc.**

27700B SE Parkway Avenue  
Wilsonville, OR 97070-9215  
Contact: Mr. Don Rhodes  
Phone: 503-685-8588  
Fax: 503-685-8887  
E-Mail: don.rhodes@infocus.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code      Designation

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200153-0****MacLean Fasteners - QC Laboratory**

1000 Allanson Road  
Mundelein, IL 60060  
Contact: Ms. Charlotte Kotowski  
Phone: 847-566-0010 x3521  
Fax: 847-949-0285  
E-Mail: CLK@fastener.maclea-fogg.com

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code      Designation

**Dimensional Inspection**

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## Dimensions of ISO grade A and B fasteners

FA/408 ISO 4759-1

## Dimensions of ISO grade C fasteners

FA/410 ISO 4759-1

## Dimensions of fasteners - gaging for slotted nuts

FA/417 ANSI/ASME B18.2.2

FA/418 ANSI/ASME B18.2.4.3M

## Dimensions of fasteners - hexagon and double hexagon

(12 point) and spline sockets

FA/843 ASME/ANSI B18.2.2

FA/945 ANSI B18.2.4.1M

## Internal thread parameters - ISO

FA/402 ISO 1502

FA/948 ANSI/ASME B1.16M

## Internal thread parameters - system 21

FA/942 ANSI/ASME B1.2

FA/946 ANSI/ASME B1.16M

## Internal thread parameters - system 22

FA/943 ANSI/ASME B1.2

FA/947 ANSI/ASME B1.16M

## Mechanical and Physical Testing and Inspection

### Cone proof load of internally threaded fasteners (nuts)

FA/221 ASTM F606M Sec. 4.3

FA/951 SAE J995

### Hardness preparation

FA/464 ASTM F606M

### Measurement of fastener coating thickness - magnetic methods

FA/155 ASTM E376

### Prevailing torque

FA/217 IFI-100/107

FA/218 ISO 2320

FA/836 Ford WE 950

FA/839 Ford ES-21000-S100

FA/954 GM 9092P

FA/956 Chrysler PF-6180

FA/957 Chrysler PF-4666

FA/959 Ford ESS-M1A171-B

FA/960 Ford WZ 100

### Proof load of full-size externally threaded fasteners

FA/229 SAE J429 Sec. 5.3

FA/230 SAE J1216 Sec. 3.3

FA/467 ASTM F606M Sec. 3.2.1-3.2.3

### Proof load of internally threaded fasteners (nuts)

FA/237 ASTM F606M Sec. 4.2

FA/239 ISO 898-2 Sec. 8.1

FA/241 SAE J995 Sec. 5.1

FA/242 SAE J1216 Sec 4.2

FB/1192 ISO 2320

FB/1193 Chrysler PF-4666

FB/1194 Ford ES-21000-S100

FB/1195 Ford ESS-M1A171-B

FB/1205 GM 510M

FB/1206 DaimlerChrysler MS-6179

### Rockwell hardness of fasteners

FA/197 ASTM E18

FA/200 ISO 6508

FA/202 SAE J417

## Rockwell superficial hardness of fasteners

FA/205 ASTM E18

FA/208 ISO 1024

FA/210 SAE J417

## Torque-tension of full-size threaded fasteners

FA/306 IFI-101

FA/308 SAE J174

FA/944 ISO 2320

## Metallography

### Decarburization and case depth measurement in fasteners

FA/323 ASTM E1077

FA/329 SAE J419

FA/330 SAE J423

### Microscopic examination of fasteners by etching

FA/512 ASTM E407

FA/552 ASTM E3

### Surface discontinuities of internally threaded fasteners

FA/364 ASTM F812M

FA/703 SAE J122

## NVLAP LAB CODE 200157-0

### Seiko Epson Corporation

80 Harashinden Hirooka

Shiojiri-City Nagano 399-0785

JAPAN

Contact: Mr. Atsushi Shinozaki

Phone: 81 263-52-5094

Fax: 81 263-54-5806

E-Mail: shinozaki.atsushi@exc.epson.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 200158-0****San Shing Hardware Works Co., Ltd. Test Laboratory**

Test Laboratory  
355-6,1F,Chung Shan Rd Section 3,kui-Jen  
Tainan  
TAIWAN  
Contact: Mr. Tony Shieh  
Phone: 886-6-2306611 x311  
Fax: 886-6-2306000  
E-Mail: smc@sanshing.com.tw

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code      Designation

**Chemical Analysis****Optical emission spectrochemical analysis**

FA/457      ASTM E415

**Dimensional Inspection****Dimensions of fasteners - flange screw heads and flange nuts**

FA/566      IFI D21 p. D21

**Dimensions of fasteners - gaging for slotted nuts**

FA/417      ANSI/ASME B18.2.2

**External thread parameters - system 21**

FA/379      ANSI/ASME B1.3M

FA/940      ANSI/ASME B1.2

**External thread parameters - system 22**

FA/381      ANSI/ASME B1.3M

FA/941      ANSI/ASME B1.2

**Internal thread parameters - ISO**

FA/953      ANSI/ASME B18.2.2

**Internal thread parameters - system 21**

FA/391      ANSI/ASME B1.3M

FA/942      ANSI/ASME B1.2

**Internal thread parameters - system 22**

FA/393      ANSI/ASME B1.3M

FA/943      ANSI/ASME B1.2

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/266      ASTM F606 Sec. 3.4.1-3.4.3

FA/267      ASTM F606M Sec. 3.4.1-3.4.3

FA/270      ISO 898-1 Sec. 8.2

FA/273      SAE J429

**Clamp load test**

FA/558      ISO 2320

FA/559      DIN 267, Part 15

FA/560      IFI-100/107

**Cone proof load of internally threaded fasteners (nuts)**

FA/220      ASTM F606 Sec. 4.3

FA/221      ASTM F606M Sec. 4.3

**Embrittlement test of washers**

FA/315      SAE J238

**Measurement of fastener coating thickness - X-ray methods**

FA/556      ASTM B568

**Measurement of fastener coating thickness - eddy-current method**

FA/149      ASTM E376

**Measurement of fastener coating thickness - weight of coating**

FA/164      ASTM A90

**Microhardness of fasteners**

FA/189      ASTM E384

**Prevailing torque**

FA/217      IFI-100/107

FA/218      ISO 2320

FA/557      DIN 267, Part 15

**Proof load of full-size externally threaded fasteners**

FA/226      ASTM F606 Sec. 3.2.1-3.2.3

FA/228      ISO 898-1 Sec. 8.4

FA/229      SAE J429

FA/467      ASTM F606M Sec. 3.2.1-3.2.3

**Proof load of internally threaded fasteners (nuts)**

FA/236      ASTM F606 Sec. 4.2

FA/237      ASTM F606M Sec. 4.2

FA/239      ISO 898-2 Sec. 8.1

FA/241      SAE J995 Sec. 5.1

**Rockwell hardness of fasteners**

FA/197      ASTM E18

**Rockwell superficial hardness of fasteners**

FA/205      ASTM E18

**Salt spray testing of fasteners**

FA/166      ASTM B117

**Torque-tension of full-size threaded fasteners**

FA/306      IFI-101

**Total extension at fracture of externally threaded fasteners**

FA/285      ASTM F606 Sec. 3.7

FA/286      ASTM F606M Sec. 3.7

**Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)**

FA/492      ASTM E92

**Wedge tensile strength of full-size threaded fasteners**

FA/290      ASTM F606 Sec. 3.5

FA/291      ASTM F606M Sec. 3.5

FA/294      ISO 898-1 Sec. 8.5

FA/468      SAE J429

**Metallography****Decarburization and case depth measurement in fasteners**

FA/323      ASTM E1077

FA/561      ASTM E3

FA/562      ASTM G79

**Surface discontinuities of externally threaded fasteners**

FA/357      ASTM F788/788M

**Surface discontinuities of internally threaded fasteners**

FA/865      ASTM F812/F812M

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## NVLAP LAB CODE 200162-0

### United States Technologies, Inc.

3505 Francis Circle  
Alpharetta, GA 30004  
Contact: Mr. Tim Johnson  
Phone: 770-740-0717  
Fax: 770-740-1508  
E-Mail: [tjohnson@USTech-lab.com](mailto:tjohnson@USTech-lab.com)  
URL: <http://www.ustech-lab.com>

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

#### Telecommunications Test Methods:

- 12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
- 12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection
- 12/T01b 68.316 Hearing Aid Compatibility: technical standards
- 12/T01c 68.302 Environmental simulation (Par. a,b)

## NVLAP LAB CODE 200163-0

### Ricoh Company, Ltd. Ohmori EMC Center

3-6, Naka-magome 1-Chome Ohta-ku  
Tokyo 143-8555  
JAPAN  
Contact: Mr. Masashi Odawara  
Phone: 81-3-3776-6281  
Fax: 81-3-3777-8317  
E-Mail: [masashi.odawara@nts.ricoh.co.jp](mailto:masashi.odawara@nts.ricoh.co.jp)

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

## NVLAP LAB CODE 200166-0

### O & K Company Limited, Osaka Test Center

8-81, Nakajima 2-Chome, Nishiyodogawa-Ku  
Osaka-Shi 555-0041  
JAPAN  
Contact: Mr. Norio Shiga  
Phone: 06-6471-0110  
Fax: 06-6472-0554  
E-Mail: [osaka@o-and-k.co.jp](mailto:osaka@o-and-k.co.jp)  
URL: <http://www.o-and-k.co.jp>

### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

#### Chemical Analysis

#### Optical emission spectrochemical analysis

FA/457 ASTM E415



## NVLAP LAB CODE 200167-0

**Bay Area Compliance Laboratory, Corp.**

230 Commercial Street, Suite 2

Sunnyvale, CA 94086

Contact: Mr. John Y. Chan

Phone: 408-732-9162

Fax: 408-732-9164

E-Mail: Johnc@baclcorp.com

URL: http://www.baclcorp.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Safety Test Methods:**

12/T41 ACA TS-001

12/T50 AS/NZS 3260

**Telecommunications Test Methods:**

12/CS03 CS-03

12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital

12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection

12/T01b 68.316 Hearing Aid Compatibility: technical standards

12/T01c 68.302 Environmental simulation (Par. a,b)

12/T42 ACA TS-002

12/T44 ACA TS-004

12/T45 ACA TS-006

## NVLAP LAB CODE 200169-0

**Kobelco Research Institute, Inc. Stock Company**

2 Nadahama-Higashimachi, Nada-ku

Kobe 657-0863

JAPAN

Contact: Mr. Morifumi Nakamura

Phone: 81-78-882-8058

Fax: 81-78-882-8211

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

NVLAP

Code Designation

**Chemical Analysis**
**Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

FA/586 JIS G1211

FA/587 JIS G1215

**Optical emission spectrochemical analysis**

FA/588 JIS G1253

**Solution chemical analysis**

FA/585 JIS G1258

## NVLAP LAB CODE 200171-0

**Leland-Powell Fasteners, Inc. Fastener Testing Laboratory**

Highway 45 South

P.O. Box 260

Martin, TN 38237

Contact: Mr. Jason Danner

Phone: 901-587-3106

Fax: 901-587-9613

E-Mail: jason@lpf.net

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

**Dimensional Inspection**
**Dimensions of fasteners - straightness**

FA/754 IFI 138

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

FA/404 ANSI/ASME B18.18.2M

**Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap**

FA/405 ANSI/ASME B18.18.3M

**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection**
**Axial tensile strength of full-size threaded fasteners**

FA/273 SAE J429

FA/752 SAE J82

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Drive test**

FA/248 SAE J81

FA/750 SAE J933

**Ductility test of thread rolling and self-drilling tappings screws**

FA/250 SAE J81

**Hydrogen embrittlement (stress durability) of externally threaded fasteners**

FA/709 SAE J81 Sec. 3.9

**Measurement of fastener coating thickness - eddy-current method**

FA/149 ASTM E376

**Proof load of full-size externally threaded fasteners**

FA/229 SAE J429 Sec. 5.3

**Proof torque test**

FB/1180 SAE J429

**Rockwell hardness of fasteners**

FA/202 SAE J417

**Rockwell superficial hardness of fasteners**

FA/210 SAE J417

**Torque-tension of full-size threaded fasteners**

FA/308 SAE J174

FB/1181 SAE J1701

**Torsional strength test of thread rolling and self-drilling tappings screws**

FA/254 SAE J81

FA/751 SAE J933

**Wedge tensile strength of full-size threaded fasteners**

FA/468 SAE J429 Sec. 5.5

FA/753 SAE J82

**NVLAP LAB CODE 200172-0****International Technology Company (ITC)**

9959 Calaveras Road

P.O. Box 543

Sunol, CA 94586-0543

Contact: Mr. Michael Gbadebo

Phone: 925-862-2944

Fax: 925-862-9013

E-Mail: itcenc@aol.com

URL: <http://www.itcenc.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology

**Equipment**

12/F01 FCC Method - 47 CFR Part 15 - Digital

**Devices**

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Telecommunications Test Methods:**

12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital

12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection

12/T01b 68.316 Hearing Aid Compatibility: technical standards

12/T01c 68.302 Environmental simulation (Par. a,b)

**NVLAP LAB CODE 200174-0****Training Research Co., Ltd.**

2, Lane 194, Huan-Ho Street Hsichih

Taipei Hsien 221

TAIWAN

Contact: Mr. Frank Tsai

Phone: 886-2-2693-5155

Fax: 886-2-2693-4440

E-Mail: [report@trclab.com.tw](mailto:report@trclab.com.tw)**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****NVLAP LAB CODE 200175-0****Ohtama Co., Ltd. Yamanashi EMC Test Site**

1661 Oshuku Asigawa Higashi-Yatsushiro  
Yamanashi  
JAPAN  
Contact: Mr. Etsuji Nogami  
Phone: 81-552-98-2141  
Fax: 81-552-98-2125

**Electromagnetic Compatibility & Telecommunications**

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**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200177-0****Korea Testing & Research Inst. for Chemical Industry-Inchon Off.**

GAJOA 3 DONG 539-8  
Inchon 404-253  
KOREA  
Contact: Mr. Park-Kil Kim  
Phone: 82-32-577-6801  
Fax: 82-32-575-5613  
E-Mail: kpk@KOTRIC.or.kr

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Chemical Analysis****Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

FA/455 ASTM E1019

**Optical emission spectrochemical analysis**

FA/457 ASTM E415

**Solution chemical analysis**

FA/448 ASTM E350

**Dimensional Inspection****Dimensions of fasteners - straightness**

FA/423 ANSI/ASME B18.2.1

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

FA/486 MIL-STD-120 (W/ Notice dtd 9 SEP 63)

**Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap**

FA/493 MIL-STD-120 (W/ Notice dtd 9SEP 63)

**External thread parameters - system 21**

FA/379 ANSI/ASME B1.3M

**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M

**Internal thread parameters - system 21**

FA/391 ANSI/ASME B1.3M

**Internal thread parameters - system 22**

FA/393 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/267 ASTM F606M Sec. 3.4.1-3.4.3

**Brinell hardness of fasteners**

FA/186 ASTM E10

**Charpy impact (u-notch) testing**

FA/517 ASTM E23

**Charpy impact (v-notch) testing**

FA/212 ASTM E23

**Cone proof load of internally threaded fasteners (nuts)**

FA/220 ASTM F606 Sec. 4.3

FA/221 ASTM F606M Sec. 4.3

**Measurement of fastener coating thickness - X-ray methods**

FA/760 ASTM A754/A754M

**Measurement of fastener coating thickness - magnetic methods**

FA/153 ASTM B499

**Measurement of fastener coating thickness - weight of coating**

FA/164 ASTM A90

**Microhardness of fasteners**

FA/189 ASTM E384

**Proof load of full-size externally threaded fasteners**

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/467 ASTM F606M Sec. 3.2.1-3.2.3

**Proof load of internally threaded fasteners (nuts)**

FA/236 ASTM F606 Sec. 4.2

FA/237 ASTM F606M Sec. 4.2

**Rockwell hardness of fasteners**

FA/197 ASTM E18

**Salt spray testing of fasteners**

FA/166 ASTM B117

**Tension testing of machined specimens from externally threaded fasteners**

FA/279 ASTM F606 Sec. 3.6

FA/280 ASTM F606M Sec. 3.6

**Wedge tensile strength of full-size threaded fasteners**

FA/290 ASTM F606 Sec. 3.5

FA/291 ASTM F606M Sec. 3.5

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

FA/300 ASTM F606M Sec. 3.2.4

**Metallography**



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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***Decarburization and case depth measurement in fasteners***

FA/323 ASTM E1077

***Determination of grain size of fasteners***

FA/638 ASTM E112

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M

***Surface discontinuities of internally threaded fasteners***

FA/865 ASTM F812/F812M

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**NVLAP LAB CODE 200178-0**

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**Durkee Testing Laboratories, Inc.**

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Paramount, CA 90723-1401

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Fax: 562-531-7137

E-Mail: durkee@IBM.net

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**Chemical Analysis*****Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***

FA/455 ASTM E1019

FA/472 ASTM E1447

FA/513 ASTM E1409

FA/514 ASTM E351 Sec. 37

FA/515 ASTM E352 Sec. 36

FA/516 ASTM E353 Sec. 37

***Energy dispersive X-ray analysis***

FB/1153 ASTM E1508 (excluding Section 9)

***Optical emission spectrochemical analysis***

FA/457 ASTM E415

FA/458 ASTM E607

FA/459 ASTM E1086

***Spot test analysis***

FA/501 ASTM STP550

**Mechanical and Physical Testing and Inspection*****Adhesion of metallic coatings on fasteners***

FA/541 QQ-P-416 Sec. 4.6.2

FB/1134 QQ-C-320

***Axial tensile strength of full-size threaded fasteners***

FA/271 MIL-STD-1312-8

***Bend test of full size eyebolts***

FA/503 ASTM A370

FB/1133 ASTM E290

***Breaking strength of fullsize eyebolts***

FA/508 MIL-STD-1312-8

***Brinell hardness of fasteners***

FA/186 ASTM E10

***CASS test (copper-accelerated acetic acid-salt spray test) of fasteners***

FA/496 ASTM B368

***Charpy impact (u-notch) testing***

FA/517 ASTM E23

***Charpy impact (v-notch) testing***

FA/211 ASTM A370 Sec. 19-28

FA/212 ASTM E23

***Copper sulfate test - test for free iron on the surface of corrosion resistant fasteners***

FA/499 ASTM A380

***Double shear of externally threaded fasteners***

FA/257 MIL-STD-1312-13

***Elevated temperature testing capability***

FA/505 MIL-STD-1312-18

***Fatigue of full-size threaded fasteners***

FA/183 MIL-STD-1312-11

***Humidity testing of fasteners***

FA/473 MIL-STD-1312-3

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/176 MIL-STD-1312-5

***Hydrogen embrittlement (stress durability) of internally threaded fasteners***

FA/178 MIL-STD-1312-14

***Intergranular corrosion susceptibility in austenitic stainless steel fasteners - nitric acid***

FA/173 ASTM A262 Sec. 15-21, Practice C

FA/504 ASTM G28

***Intergranular corrosion susceptibility of austenitic stainless steel fasteners - oxalic acid***

FA/174 ASTM A262 Sec. 3-7, Practice A

***Measurement of fastener coating thickness - dimensional change method***

FA/495 MIL-STD-1312-12

***Measurement of fastener coating thickness - magnetic methods***

FA/159 MIL-STD-1312-12

***Measurement of fastener coating thickness - microscopical method***

FA/163 MIL-STD-1312-12

***Measurement of fastener coating thickness - weight of coating***

FA/165 MIL-STD-1312-12

***Microhardness of fasteners***

FA/193 MIL-STD-1312-6

***Proof load of full-size externally threaded fasteners***

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

***Proof load of full-size eyebolts***

FA/232 ASTM F541

***Proof load of internally threaded fasteners (nuts)***

FA/236 ASTM F606 Sec. 4.2

***Push out test of floating plate nuts, gang channel nuts, and anchor nuts***

FA/116 MIL-N-25027



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued*****Recess strength test in both the installation and removal directions***

FA/476 MIL-STD-1312-25

***Rockwell hardness of fasteners***

FA/201 MIL-STD-1312-6

***Rockwell superficial hardness of fasteners***

FA/209 MIL-STD-1312-6

***Salt spray testing of fasteners***

FA/166 ASTM B117

FA/168 MIL-STD-1312-1

***Single shear of externally threaded fasteners***

FA/256 MIL-STD-1312-20

***Stress corrosion of fasteners***

FA/172 MIL-STD-1312-9

***Stress rupture of fasteners***

FA/262 MIL-STD-1312-10

***Tension testing of machined specimens from externally threaded fasteners***

FA/278 ASTM A370

FA/475 ASTM E8

FA/526 MIL-STD-1312-8

***Test for embrittlement of metallic coated externally threaded fasteners***

FA/525 MIL-STD-1312-5

***Torque-out test***

FA/133 MIL-N-25027

FA/502 MIL-N-45913

FA/523 MIL-STD-1312-31

***Water immersion method - test for anodic surface contaminants on corrosion resistant fasteners***

FA/498 ASTM G31

***Wedge tensile strength of full-size threaded fasteners***

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

***Yield strength of full-size externally threaded fasteners***

FA/303 MIL-STD-1312-8

***Metallography******Decarburization and case depth measurement in fasteners***

FA/483 ASTM A574 Sec. 12

FA/520 ASTM F835

***Determination of grain size of fasteners***

FA/331 ASTM E112

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M

***Surface discontinuities of internally threaded fasteners***

FA/865 ASTM F812/F812M

**NVLAP LAB CODE 200179-0****Fastener Innovation Technology, Inc.**

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Gardena, CA 90248-1811

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Phone: 310-538-1111

Fax: 310-324-7602

E-Mail: JWM@fitfastener.com

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Dimensional Inspection*****Dimensions of fasteners - flange screw heads and flange nuts***

FA/712 IFI 111

FB/1139 IFI 115

***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***

FA/411 ANSI/ASME B18.3

FB/1140 ANSI B18.2.1

***Dimensions of fasteners - straightness***

FA/423 ANSI/ASME B18.2.1

***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***

FA/791 NAS 527

FA/854 ANSI/ASME B18.6.4

FB/1137 NAS 9800

***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***

FB/1062 BPS-F-67

***External thread parameters - ISO***

FA/594 FED-STD-H28/21

***External thread parameters - system 21***

FA/380 FED-STD-H28/20

FA/628 MIL-S-8879

***External thread parameters - system 22***

FA/382 FED-STD-H28/20

FA/384 MIL-S-8879

***External thread parameters - system 23***

FA/386 FED-STD-H28/20

FA/388 MIL-S-8879

***Surface texture***

FA/439 ANSI/ASME B46.1

***Mechanical and Physical Testing and Inspection******Axial tensile strength of full-size threaded fasteners***

FA/271 MIL-STD-1312-8

FA/530 ASTM E8

***Copper sulfate test - test for free iron on the surface of corrosion resistant fasteners***

FA/499 ASTM A380

FB/1138 SAE-AMS-STD-753

***Double shear of externally threaded fasteners***

FA/257 MIL-STD-1312-13

*Elevated temperature testing capability*

FA/505 MIL-STD-1312-18

*Fatigue of full-size threaded fasteners*

FA/183 MIL-STD-1312-11

*Humidity testing of fasteners*

FA/169 MIL-STD-753 Test Method 101

*Hydrogen embrittlement (stress durability) of externally threaded fasteners*

FA/176 MIL-STD-1312-5

*Magnetic permeability*

FA/214 ASTM A342 Test Method 3

*Measurement of fastener coating thickness - dimensional change method*

FA/495 MIL-STD-1312-12

*Measurement of fastener coating thickness - microscopical method*

FA/160 ASTM B487

FA/163 MIL-STD-1312-12

*Microhardness of fasteners*

FA/189 ASTM E384

FA/193 MIL-STD-1312-6

*Proof load of full-size externally threaded fasteners*

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

*Push out test of floating plate nuts, gang channel nuts, and anchor nuts*

FA/116 MIL-N-25027

*Recess strength test in both the installation and removal directions*

FA/476 MIL-STD-1312-25

*Reusability test of self-locking internally threaded fasteners*

FA/124 MIL-N-25027

*Rockwell hardness of fasteners*

FA/197 ASTM E18

FA/201 MIL-STD-1312-6

*Rockwell superficial hardness of fasteners*

FA/209 MIL-STD-1312-6

*Salt spray testing of fasteners*

FA/166 ASTM B117

FA/168 MIL-STD-1312-1

*Single shear of externally threaded fasteners*

FA/256 MIL-STD-1312-20

*Stress rupture of fasteners*

FA/262 MIL-STD-1312-10

*Tension testing of machined specimens from externally threaded fasteners*

FA/475 ASTM E8

FA/526 MIL-STD-1312-8

*Torque-out test*

FA/133 MIL-N-25027

*Total extension at fracture of externally threaded fasteners*

FA/592 ASTM E8

*Wedge tensile strength of full-size threaded fasteners*

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

*Wrench torque test of externally wrenching nuts of spline and hexagon and double hexagon (1*

FA/141 MIL-N-25027

*Yield strength of full-size externally threaded fasteners*

FA/593 ASTM E8

*Metallography*

*Decarburization and case depth measurement in fasteners*

FA/323 ASTM E1077

FB/1047 BPS-F-67

FB/1107 BPS-F-69

*Determination of grain size of fasteners*

FA/331 ASTM E112

*Macroscopic examination of fasteners by etching*

FA/511 ASTM E340

FB/1108 BPS-F-67

FB/1109 BPS-F-69

*Microscopic examination of fasteners by etching*

FA/512 ASTM E407

FB/1118 BPS-F-67

FB/1121 BPS-F-69

*Surface discontinuities of externally threaded fasteners*

FA/357 ASTM F788/788M

*Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*

FA/371 MIL-STD-6866

FA/527 ASTM E1417

*Magnetic particle inspection of fasteners*

FA/485 ASTM E1444

NVLAP LAB CODE 200180-0

**Fuji Component Parts USA, Inc.**

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Fax: 317-347-4123

E-Mail: fcpfuji@ix.netcom.com

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

NVLAP

Code Designation

**Chemical Analysis**

*Optical emission spectrochemical analysis*

FA/457 ASTM E415

**Dimensional Inspection**

*External thread parameters - system 21*

FA/379 ANSI/ASME B1.3M

*Internal thread parameters - system 21*

FA/391 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection**

*Axial tensile strength of full-size threaded fasteners*

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Measurement of fastener coating thickness - coulometric method**

FA/567 ASTM B504

**Microhardness of fasteners**

FA/657 ASTM E92

**Proof load of full-size externally threaded fasteners**

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

**Proof load of internally threaded fasteners (nuts)**

FA/236 ASTM F606 Sec. 4.2

**Rockwell hardness of fasteners**

FA/197 ASTM E18

**Salt spray testing of fasteners**

FA/166 ASTM B117

**Wedge tensile strength of full-size threaded fasteners**

FA/290 ASTM F606 Sec. 3.5

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

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**NVLAP LAB CODE 200183-0****California Screw Products**

14957 Gwenchris Court

Paramount, CA 90723-3423

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Fax: 562-633-2082

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Dimensional Inspection****Dimensions of fasteners - bearing surface squareness**

FB/1197 NAS 4002

FB/1201 NAS 4003

**Dimensions of fasteners - flange screw heads and flange nuts**

FB/1198 NAS 4002

FB/1202 NAS 4003

**Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets**

FA/972 NAS 4002

FB/1200 NAS 4003

**Dimensions of fasteners - straightness**

FA/423 ANSI/ASME B18.2.1

FB/1196 NASM 6812

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

FB/1199 NAS 4002

FB/1203 NAS 4003

**External thread parameters - SAE fastener with MJ metric screw threads**

FA/922 ANSI/ASME B1.3M

**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M

**External thread parameters - system 23**

FA/385 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/799 NASM 1312-8

**Double shear of externally threaded fasteners**

FA/880 NASM 1312-13

**Hydrogen embrittlement (stress durability) of externally threaded fasteners**

FA/875 NASM 1312-5

**Magnetic permeability**

FA/214 ASTM A342 Test Method 3

**Measurement of fastener coating thickness - dimensional change method**

FA/874 NASM 1312-12

**Measurement of fastener coating thickness - eddy-current method**

FA/872 NASM 1312-12

**Measurement of fastener coating thickness - microscopical method**

FA/873 NASM 1312-12

**Microhardness of fasteners**

FA/877 NASM 1312-6

**Recess strength test in both the installation and removal directions**

FA/886 NASM 1312-25

**Rockwell hardness of fasteners**

FA/878 NASM 1312-6

**Single shear of externally threaded fasteners**

FA/879 NASM 1312-20

**Stress rupture of fasteners**

FA/881 NASM 1312-10

**Metallography****Decarburization and case depth measurement in fasteners**

FA/328 SAE J121

FB/1204 CSP WI-0010

**Determination of grain size of fasteners**

FA/331 ASTM E112

**Macroscopic examination of fasteners by etching**

FA/511 ASTM E340

**Microscopic examination of fasteners by etching**

FA/512 ASTM E407

**Surface discontinuities of externally threaded fasteners**

FA/357 ASTM F788/788M

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**NVLAP LAB CODE 200186-0****Hitachi Information Technology Co., Ltd.**

456 Sakai, Nakai-machi, Ashigarakami-gun

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JAPAN

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200188-0****EMSL Analytical, Inc.**

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Fax: 317-570-5894

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200189-0****Japan Quality Assurance Organization Safety Testing Center**

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URL: <http://www/jqa.or.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200190-0****Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch**

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Nishikasugai-gun

Aichi 481-0005

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URL: <http://www.jqa.or.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200191-0****Japan Quality Assurance Organization Kita-Kansai Testing Center**

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**Electromagnetic Compatibility & Telecommunication**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code      Designation*



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200192-0****Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch**

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**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200198-0****IBM Yamato EMC Engineering**

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**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200200-0****IBM RTP PSG EMC Test Labs**

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Research Triangle Park, NC 27709-2195  
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Fax: 919-254-7778  
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**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology

|         |                                                     |
|---------|-----------------------------------------------------|
|         | Equipment                                           |
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |
| 12/T51  | AS/NZS 3548                                         |

**NVLAP LAB CODE 200201-0**

**Intertek Testing Services**

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Menlo Park, CA 94025  
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Fax: 650-463-2910  
E-Mail: ckli@itsqs.com  
URL: <http://www.etlsemko.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**Telecommunications Test Methods:**

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                 |

**NVLAP LAB CODE 200202-0**

**NOVA Machine Products**

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URL: <http://www.lab@nova-nsa.com>

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Chemical Analysis**

**Optical emission spectrochemical analysis**

|        |            |
|--------|------------|
| FA/457 | ASTM E415  |
| FA/459 | ASTM E1086 |

**Spot test analysis**

|        |                        |
|--------|------------------------|
| FA/748 | Alloy Detector Mark II |
|--------|------------------------|

**Dimensional Inspection**

**Dimensions of ISO grade A and B fasteners**

|        |          |
|--------|----------|
| FA/738 | ISO 4014 |
| FA/739 | ISO 4017 |
| FA/740 | ISO 4032 |

**Dimensions of ISO grade C fasteners**

|        |          |
|--------|----------|
| FA/741 | ISO 4016 |
| FA/742 | ISO 4018 |
| FA/743 | ISO 4034 |

**Dimensions of fasteners - bearing surface squareness**

|        |                   |
|--------|-------------------|
| FA/745 | ANSI B18.2.1      |
| FA/746 | ASME/ANSI B18.2.2 |
| FA/747 | ASME/ANSI B18.3   |

**Dimensions of fasteners - flange screw heads and flange nuts**

|        |              |
|--------|--------------|
| FA/744 | ANSI B18.2.1 |
|--------|--------------|

**Dimensions of fasteners - gaging for slotted nuts**

|        |                   |
|--------|-------------------|
| FA/417 | ANSI/ASME B18.2.2 |
|--------|-------------------|

**Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets**

|        |                 |
|--------|-----------------|
| FA/411 | ANSI/ASME B18.3 |
|--------|-----------------|

**Dimensions of fasteners - straightness**

|        |                   |
|--------|-------------------|
| FA/423 | ANSI/ASME B18.2.1 |
|--------|-------------------|

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

|        |                     |
|--------|---------------------|
| FA/403 | ANSI/ASME B18.18.1M |
| FA/404 | ANSI/ASME B18.18.2M |

**Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap**

|        |                     |
|--------|---------------------|
| FA/405 | ANSI/ASME B18.18.3M |
| FA/406 | ANSI/ASME B18.18.4M |

**External thread parameters - ISO**

|        |           |
|--------|-----------|
| FA/728 | ISO 68    |
| FA/729 | ISO 261   |
| FA/730 | ISO 262   |
| FA/731 | ISO 965-1 |
| FA/732 | ISO 965-2 |

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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***External thread parameters - system 21***

FA/379 ANSI/ASME B1.3M

***External thread parameters - system 22***

FA/381 ANSI/ASME B1.3M

***External thread parameters - system 23***

FA/385 ANSI/ASME B1.3M

***Internal thread parameters - ISO***

FA/733 ISO 68

FA/734 ISO 261

FA/735 ISO 262

FA/736 ISO 965-1

FA/737 ISO 965-2

***Internal thread parameters - system 21***

FA/391 ANSI/ASME B1.3M

***Internal thread parameters - system 22***

FA/393 ANSI/ASME B1.3M

***Internal thread parameters - system 23***

FA/397 ANSI/ASME B1.3M

***Surface texture***

FA/439 ANSI/ASME B46.1

***Mechanical and Physical Testing and Inspection******Axial tensile strength of full-size threaded fasteners***

FA/265 ASTM A370 Sec. A3.2.1.4

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/273 SAE J429

FA/274 SAE J1216

FA/687 ISO 6892

***Compression load of compressible-washer-type direct tension indicators***

FA/312 ASTM F959

***Cone proof load of internally threaded fasteners (nuts)***

FA/220 ASTM F606 Sec. 4.3

***Embrittlement test of washers***

FA/313 ASME B18.21.1

***Hardness preparation***

FA/482 ASTM F606

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/176 MIL-STD-1312-5

***Hydrogen embrittlement (stress durability) of internally threaded fasteners***

FA/178 MIL-STD-1312-14

***Proof load of full-size externally threaded fasteners***

FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/229 SAE J429 Sec. 5.3

FA/230 SAE J1216 Sec. 3.3

***Proof load of internally threaded fasteners (nuts)***

FA/235 ASTM A370 Sec. A3.5.1

FA/236 ASTM F606 Sec. 4.2

FA/241 SAE J995 Sec. 5.1

***Recovery test of washers***

FA/726 ASME/ANSI B18.21.1

***Rockwell hardness of fasteners***

FA/196 ASTM A370 Sec. 18

FA/197 ASTM E18

FA/200 ISO 6508

FA/202 SAE J417

***Rockwell superficial hardness of fasteners***

FA/205 ASTM E18

FA/206 ASTM A370 Sec. 18

FA/210 SAE J417

***Temper test of lock washers***

FA/319 ASME B18.21.1

***Tension testing of machined specimens from externally threaded fasteners***

FA/278 ASTM A370

FA/279 ASTM F606 Sec. 3.6

FA/283 SAE J429

FA/475 ASTM E8

FA/580 ISO 6892

***Test for embrittlement of metallic coated externally threaded fasteners***

FA/179 ASTM F606 Sec. 7

FA/724 ASTM A143

***Torque-tension of full-size threaded fasteners***

FA/307 MIL-STD-1312-15

***Total extension at fracture of externally threaded fasteners***

FA/285 ASTM F606 Sec. 3.7

FA/725 ISO 6892

***Twist test of lock washers***

FA/321 ASME B18.21.1

***Wedge tensile strength of full-size threaded fasteners***

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

FA/468 SAE J429 Sec. 5.5

FA/469 SAE J1216 Sec. 3.6

FA/688 ISO 6892

***Metallography******Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M

FA/359 ISO 6157-1

FA/360 ISO 6157-3

FA/361 SAE J123

***Surface discontinuities of internally threaded fasteners***

FA/363 ASTM F812

FA/365 SAE J122

FA/727 ISO 6157-2

***Nondestructive Inspection******Liquid penetrant inspection of fasteners***

FA/367 ASTM E165

FA/370 MIL-STD-271

FA/371 MIL-STD-6866

FA/372 SAE J426

FA/527 ASTM E1417

***Magnetic particle inspection of fasteners***

FA/374 ASTM E709

FA/376 MIL-STD-271

FA/377 MIL-STD-1949

FA/378 SAE J420

FA/485 ASTM E1444

FB/1208 ASTM A275/A275M



NVLAP LAB CODE 200203-0

**Fuji Buhin Kogyo Kabushiki Kaisha**

47-1 Fujikura-Cho  
Ohta Gunma 373-8501  
JAPAN  
Contact: Mr. Shinji Kanai  
Phone: 276-31-2311  
Fax: 276-31-9621

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**Dimensional Inspection**

**Internal thread parameters - system 21**

FA/621 JIS B0251  
FA/622 JIS B0252  
FA/623 JIS B1071

**Mechanical and Physical Testing and Inspection**

**Axial tensile strength of full-size threaded fasteners**

FA/574 JIS B1051 Sec. 4.2.2

**Measurement of fastener coating thickness - coulometric method**

FA/597 JIS H8501

**Microhardness of fasteners**

FA/620 JIS Z2244

**Prevailing torque**

FA/600 JIS B1056

**Proof load of internally threaded fasteners (nuts)**

FA/601 JIS B1052

**Rockwell hardness of fasteners**

FA/572 JIS Z2245

**Salt spray testing of fasteners**

FA/569 JIS Z2371

**Wedge tensile strength of full-size threaded fasteners**

FA/575 JIS B1051 Sec. 4.2.3

NVLAP LAB CODE 200204-0

**EMSL Analytical, Inc.**

19595 NE 10th Ave., Bay C  
N. Miami Beach, FL 33179  
Contact: Ms. Kimberly A. Wallace  
Phone: 305-650-0577  
Fax: 305-650-0578

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200207-0

**Kansai Electronic Industry Development Center, Ikoma Testing Lab.**

12128 Takayama-cho  
Ikoma Nara 630-0101  
JAPAN  
Contact: Mr. Tadayoshi Sakabe  
Phone: 0743-78-0283  
Fax: 0743-79-1014  
E-Mail: [sakabe@kec.or.jp](mailto:sakabe@kec.or.jp)  
URL: <http://www.kec.or.jp/>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

NVLAP

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

NVLAP LAB CODE 200208-0

**Ingersoll Fasteners**

390 Thomas Street  
Ingersoll Ontario N5C 3K3  
CANADA  
Contact: Mr. Alan Palmer  
Phone: 519-485-4610  
Fax: 519-485-2435  
E-Mail: [apalmer@ivaco.com](mailto:apalmer@ivaco.com)

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

NVLAP

Code Designation

**Dimensional Inspection**

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

FA/404 ANSI/ASME B18.18.2M

**External thread parameters - system 21**

FA/379 ANSI/ASME B1.3M



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M

**Internal thread parameters - system 21**

FA/391 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/273 SAE J429

FA/578 SAE J1216 Sec. 3.5

**Cone proof load of internally threaded fasteners (nuts)**

FA/220 ASTM F606 Sec. 4.3

**Measurement of fastener coating thickness - magnetic methods**

FA/153 ASTM B499

**Microhardness of fasteners**

FA/189 ASTM E384

**Proof load of full-size externally threaded fasteners**

FA/229 SAE J429 Sec. 5.3

FA/577 SAE J1216 Sec. 3.3

**Proof load of internally threaded fasteners (nuts)**

FA/241 SAE J995 Sec. 5.1

**Rockwell hardness of fasteners**

FA/197 ASTM E18

**Rockwell superficial hardness of fasteners**

FA/205 ASTM E18

**Salt spray testing of fasteners**

FA/166 ASTM B117

**Tension testing of machined specimens from externally threaded fasteners**

FA/278 ASTM A370

**Wedge tensile strength of full-size threaded fasteners**

FA/468 SAE J429 Sec. 5.5

FA/579 SAE J1216 Sec. 3.6

**Metallography****Decarburization and case depth measurement in fasteners**

FA/328 SAE J121

**Macroscopic examination of fasteners by etching**

FA/337 SAE J1061

**Microscopic examination of fasteners by etching**

FA/344 SAE J121

**Surface discontinuities of externally threaded fasteners**

FA/362 SAE J1061

**Surface discontinuities of internally threaded fasteners**

FA/363 ASTM F812

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**NVLAP LAB CODE 200212-0****Sundram Fasteners Limited (Inhouse test laboratory)**

Padi

Chennai (Madras), Taonil, Nadu 600 050

INDIA

Contact: Mr. Sampathkumar Moorthy

Phone: 91-44-852-1870

Fax: 91-44-853-5435

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

**NVLAP***Code      Designation***Dimensional Inspection****Dimensions of ISO grade A and B fasteners**

FA/408 ISO 4759-1

**Dimensions of ISO grade C fasteners**

FA/410 ISO 4759-1

**Dimensions of fasteners - flange screw heads and flange nuts**

FA/669 ISO 4161

FA/670 ISO 4162

**Dimensions of fasteners - gaging for slotted nuts**

FA/980 ISO 4759-2

**Dimensions of fasteners - straightness**

FA/668 ISO 4759-1

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

FA/665 ISO 4759-1

**External thread parameters - ISO**

FA/390 ISO 1502

**External thread parameters - SAE fastener with MJ metric screw threads**

FA/389 SAE MA1566

FA/661 ISO 4759-1

FA/662 ISO 1502

**External thread parameters - system 21**

FA/659 ISO 4759-1

FA/660 ISO 1502

**Internal thread parameters - ISO**

FA/402 ISO 1502

FA/664 ISO 4759-1

**Internal thread parameters - SAE fastener with MJ metric screw threads**

FA/979 ISO 4759-1

**Surface texture**

FB/1207 IS 3073

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/270 ISO 898-1 Sec. 8.2

FA/273 SAE J429

FA/274 SAE J1216

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Brinell hardness of fasteners**

FA/466 ISO 6506

**Cone proof load of internally threaded fasteners (nuts)**

FA/220 ASTM F606 Sec. 4.3

FA/221 ASTM F606M Sec. 4.3

FA/223 SAE J122 Sec. 4.3

**Measurement of fastener coating thickness - X-ray****methods**

FA/556 ASTM B568

**Microhardness of fasteners**

FA/657 ASTM E92

**Prevailing torque**

FA/217 IFI-100/107

FA/218 ISO 2320

**Proof load of full-size externally threaded fasteners**

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/228 ISO 898-1 Sec. 8.4

FA/229 SAE J429 Sec. 5.3

FA/230 SAE J1216 Sec. 3.3

FA/467 ASTM F606M Sec. 3.2.1-3.2.3

**Proof load of internally threaded fasteners (nuts)**

FA/236 ASTM F606 Sec. 4.2

FA/237 ASTM F606M Sec. 4.2

FA/239 ISO 898-2 Sec. 8.1

FA/240 ISO 898-6 Sec. 8.1

FA/241 SAE J995 Sec. 5.1

**Rockwell hardness of fasteners**

FA/197 ASTM E18

FA/200 ISO 6508

**Salt spray testing of fasteners**

FA/166 ASTM B117

**Tension testing of machined specimens from externally threaded fasteners**

FA/279 ASTM F606 Sec. 3.6

FA/280 ASTM F606M Sec. 3.6

FA/282 ISO 898-1

FA/283 SAE J429

**Torque-tension of full-size threaded fasteners**

FA/306 IFI-101

FA/308 SAE J174

FA/944 ISO 2320

**Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)**

FA/658 ISO 6507-1

**Wedge tensile strength of full-size threaded fasteners**

FA/290 ASTM F606 Sec. 3.5

FA/291 ASTM F606M Sec. 3.5

FA/294 ISO 898-1 Sec. 8.5

FA/468 SAE J429 Sec. 5.5

FA/469 SAE J1216 Sec. 3.6

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

FA/300 ASTM F606M Sec. 3.2.4

**Metallography****Decarburization and case depth measurement in fasteners**

FA/323 ASTM E1077

FA/328 SAE J121

FA/329 SAE J419

FA/330 SAE J423

**Determination of grain size of fasteners**

FA/331 ASTM E112

FA/333 SAE J418

**Macroscopic examination of fasteners by etching**

FA/334 ISO 6157-1

FA/335 ISO 6157-3

FA/336 SAE J123

**Surface discontinuities of externally threaded fasteners**

FA/357 ASTM F788/788M

FA/361 SAE J123

**Surface discontinuities of internally threaded fasteners**

FA/365 SAE J122

FA/865 ASTM F812/F812M

**Nondestructive Inspection****Magnetic particle inspection of fasteners**

FA/374 ASTM E709

FA/378 SAE J420

**NVLAP LAB CODE 200214-0****Underwriters Laboratories Inc.**

2600 N.W. Lake Road

Camas, WA 98607-8542

Contact: Mr. Rick A. Titus

Phone: 847-272-8800

Fax: 847-509-6321

E-Mail: Rick.A.Titus@us.ul.com

URL: <http://www.ul.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 200215-0****Sumitomo Metals (Kokura), Ltd. Quality System Section**

Quality System Section  
1, Konomi-machi, Kokurakita-ku  
Kitakyushu 803-0803  
JAPAN  
Contact: Mr. Masamichi Suzuki  
Phone: 81-93-581-3289  
Fax: 81-93-561-8099

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

**NVLAP**

*Code      Designation*

**Chemical Analysis****Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

FA/586    JIS G1211  
FA/587    JIS G1215  
FB/1189   JIS G1228

**Optical emission spectrochemical analysis**

FA/588    JIS G1253

**Solution chemical analysis**

FA/585    JIS G1258  
FA/680    JIS G1227  
FB/1182   JIS G1212  
FB/1183   JIS G1213  
FB/1184   JIS G1214  
FB/1185   JIS G1216  
FB/1186   JIS G1217  
FB/1187   JIS G1218  
FB/1188   JIS G1219  
FB/1191   JIS G1257

**X-ray fluorescence (XRF) spectrochemical analysis**

FB/1190   JIS G1256

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**NVLAP LAB CODE 200216-0****Battelle - Pacific Northwest National Laboratory**

Battelle Boulevard (Mail Stop K3-55)  
P.O. Box 999  
Richland, WA 99352-4553  
Contact: Mr. Jack J. Fix  
Phone: 509-375-2512  
Fax: 509-373-0167  
E-Mail: jack.fix@pnl.gov  
URL: [http://www.pnl.gov/health/health\\_prot/](http://www.pnl.gov/health/health_prot/)

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Harshaw automatic reader model 8800 and manual reader model 6600.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance

with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Harshaw Card 7776 (15, 15, 6, 15) in a Type 8825 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VC, VI, VII, VIII.

Harshaw Combo 7777 (15, 15, 6, 15) in a type 8825 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VC, VI, VII, VIII, and 7666 (15, 15, 15, 15) in a type 8816 holder for ANSI-N13.11 category VIII.

Harshaw extremity TLD XD-740 (TLD-700) in a finger ring holder for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIA, IVA, VC.

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**NVLAP LAB CODE 200217-0****Tokin EMC Engineering Co., Ltd. Kawasaki Facility**

398, Shiboguchi Takatsu-ku  
Kawasaki-city, Kanagawa 213  
JAPAN  
Contact: Mr. Hiro Shida  
Phone: 81-298-37-2400  
Fax: 81-298-37-2401  
E-Mail: shida@tec.tokin.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

12/CIS22    IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/F01      FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a    Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b    Radiated Emissions  
12/T51      AS/NZS 3548

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**NVLAP LAB CODE 200218-0****Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory**

49, Aza-Miyanowaki, Sakai  
Sanda-city, Hyogo 669-14  
JAPAN  
Contact: Mr. Motoji Nakai  
Phone: 81-795-69-1290  
Fax: 81-795-69-0079  
E-Mail: nakai@tec.tokin.co.jp



**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200219-0**

**Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory**

1684, Nishinoda, Nyugawakami  
Daian-cho, Inabe-gun, Mie 511-0261  
JAPAN

Contact: Mr. Motoji Nakai  
Phone: 81-795-69-1290  
Fax: 81-795-69-0079  
E-Mail: nakai@tee.tokin.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200220-0**

**SK Tech Co., LTD.**

820-2, Wolmoon-Ri, WaBu-up  
Namyangju-si, Kyunggi-Do 472-900  
KOREA

Contact: Mr. Jae-Yeong Hyun  
Phone: 82 31 576 2204  
Fax: 82 31 576 2205  
E-Mail: ktemc@unitel.co.kr  
URL: <http://www.skeme.co.kr>

**Electromagnetic Compatibility & Telecommunications**

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*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200221-0**

**Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory**

28-1, Aza-Kitahara  
Ohaza- Hanashimashinden  
Tsukuba-city, Ibaraki 305  
JAPAN

Contact: Mr. Hiro Shida  
Phone: 81-298-37-2400  
Fax: 81-298-37-2401  
E-Mail: shida@tee.tokin.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200222-0**

**NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab.**

Highway 547, 355-2, Code 48L500B  
Lakehurst, NJ 08733-5100  
Contact: Mr. Lee Taylor  
Phone: 732-323-7782  
Fax: 732-323-1844  
E-Mail: Taylorlm@lakehurst.navy.mil  
URL: <http://www.lakehurst.navy.mil>



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Electromagnetic Compatibility & Telecommunications**

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| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**MIL-STD-462 : Conducted Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |

**MIL-STD-462 : Conducted Susceptibility:**

|        |                         |
|--------|-------------------------|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |

**MIL-STD-462 : Radiated Emissions:**

|        |                         |
|--------|-------------------------|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |

**MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                                |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                                |
| 12/E04 | MIL-STD-462 Method RS03 employing<br>RADHAZ procedures for high level testing<br>(Consult laboratory for field strengths<br>available) |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                                |

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**NVLAP LAB CODE 200224-0****Northwestern Steel and Wire Company**

121 Wallace Street  
P.O. Box 618  
Sterling, IL 61081  
Contact: Mr. Raymond Wisneski  
Phone: 815-625-2500  
Fax: 815-625-6445  
E-Mail: [rwisneski@nswsw.com](mailto:rwisneski@nswsw.com)

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Chemical Analysis****Optical emission spectrochemical analysis**

|        |           |
|--------|-----------|
| FA/457 | ASTM E415 |
|--------|-----------|

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**NVLAP LAB CODE 200229-0****Minebea Co., Ltd. Fujisawa Manufacturing Unit**

1-1-1 Katase  
Fujisawa, Kanagawa 251-8531  
JAPAN  
Contact: Mr. Yukio Shimada  
Phone: 0466-23-2137  
Fax: 0466-23-2173

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Chemical Analysis****Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

|        |            |
|--------|------------|
| FA/472 | ASTM E1447 |
|--------|------------|

**Dimensional Inspection****Dimensions of fasteners - bearing surface squareness**

|        |           |
|--------|-----------|
| FA/649 | JIS B1071 |
|--------|-----------|

**Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets**

|        |            |
|--------|------------|
| FA/539 | SAE AS 870 |
|--------|------------|

|        |            |
|--------|------------|
| FA/790 | SBAC RS680 |
|--------|------------|

**Dimensions of fasteners - straightness**

|        |           |
|--------|-----------|
| FA/648 | JIS B1071 |
|--------|-----------|

**Dimensions of general purpose fasteners and high-volume machine assembly fasteners**

|        |           |
|--------|-----------|
| FA/607 | JIS B1071 |
|--------|-----------|

|        |         |
|--------|---------|
| FA/791 | NAS 527 |
|--------|---------|

**External thread parameters - system 21**

|        |                 |
|--------|-----------------|
| FA/379 | ANSI/ASME B1.3M |
|--------|-----------------|

|        |                |
|--------|----------------|
| FA/380 | FED-STD-H28/20 |
|--------|----------------|

**External thread parameters - system 22**

|        |                 |
|--------|-----------------|
| FA/381 | ANSI/ASME B1.3M |
|--------|-----------------|

|        |                |
|--------|----------------|
| FA/382 | FED-STD-H28/20 |
|--------|----------------|

**External thread parameters - system 23**

|        |                 |
|--------|-----------------|
| FA/385 | ANSI/ASME B1.3M |
|--------|-----------------|

|        |                |
|--------|----------------|
| FA/386 | FED-STD-H28/20 |
|--------|----------------|

**Surface texture**

|        |                 |
|--------|-----------------|
| FA/439 | ANSI/ASME B46.1 |
|--------|-----------------|

|        |           |
|--------|-----------|
| FA/650 | JIS B1071 |
|--------|-----------|

|        |                 |
|--------|-----------------|
| FA/771 | BS 1134, Part 1 |
|--------|-----------------|

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

|        |                            |
|--------|----------------------------|
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
|--------|----------------------------|

|        |                      |
|--------|----------------------|
| FA/574 | JIS B1051 Sec. 4.2.2 |
|--------|----------------------|

|        |             |
|--------|-------------|
| FA/799 | NASM 1312-8 |
|--------|-------------|

**Double shear of externally threaded fasteners**

|        |              |
|--------|--------------|
| FA/880 | NASM 1312-13 |
|--------|--------------|

**Elevated temperature testing capability**

|         |              |
|---------|--------------|
| FB/1158 | NASM 1312-18 |
|---------|--------------|

**Fatigue of full-size threaded fasteners**

|        |              |
|--------|--------------|
| FA/876 | NASM 1312-11 |
|--------|--------------|

**Hardness preparation**

|        |           |
|--------|-----------|
| FA/482 | ASTM F606 |
|--------|-----------|

**Head soundness testing**

|        |                      |
|--------|----------------------|
| FA/615 | JIS B1051 Sec. 4.2.6 |
|--------|----------------------|

**Humidity testing of fasteners**

|         |             |
|---------|-------------|
| FB/1159 | AMS-QQ-P-35 |
|---------|-------------|

**Measurement of fastener coating thickness - dimensional change method**

|        |              |
|--------|--------------|
| FA/874 | NASM 1312-12 |
|--------|--------------|

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Measurement of fastener coating thickness - eddy-current method**

FA/618 JIS H8501

**Measurement of fastener coating thickness - microscopical method**

FA/640 JIS H8501

FA/873 NASM 1312-12

**Measurement of fastener coating thickness - weight of coating**

FA/619 JIS H8501

**Microhardness of fasteners**

FA/620 JIS Z2244

FA/642 JIS B1051 Sec. 4.2.5

FA/877 NASM 1312-6

**Proof load of full-size externally threaded fasteners**

FA/573 JIS B1051 Sec. 4.2.4

**Recess strength test in both the installation and removal directions**

FA/886 NASM 1312-25

**Rockwell hardness of fasteners**

FA/197 ASTM E18

FA/572 JIS Z2245

FA/707 JIS B1051 Sec. 4.2.5

FA/765 BS EN 10109-1

FA/878 NASM 1312-6

**Rockwell superficial hardness of fasteners**

FA/205 ASTM E18

FA/766 BS EN 10109-1

FB/1004 NASM 1312-6

**Salt spray testing of fasteners**

FA/166 ASTM B117

FA/569 JIS Z2371

FB/1032 NASM 1312-1

**Stress rupture of fasteners**

FA/260 ASTM E139

FA/767 BS 4A 4, Part 1, Sec 3

**Tension testing of machined specimens from externally threaded fasteners**

FA/581 JIS B1051 Sec. 4.2.1

FA/582 JIS Z2241

FA/768 BS 4A 4, Part 1, Sec 1

**Wedge tensile strength of full-size threaded fasteners**

FA/290 ASTM F606 Sec. 3.5

FA/575 JIS B1051 Sec. 4.2.3

**Metallography****Decarburization and case depth measurement in fasteners**

FA/645 JIS B1051

FB/1157 NASM 1312-6

**Determination of grain size of fasteners**

FA/331 ASTM E112

**Macroscopic examination of fasteners by etching**

FA/511 ASTM E340

FA/769 AMS 7477

FA/780 SBAC TS21

FA/782 SBAC TS22

FA/783 SBAC TS23

FA/786 SBAC TS24

FA/787 SBAC TS25

**Microscopic examination of fasteners by etching**

FA/512 ASTM E407

FA/770 AMS 7477

FA/781 SBAC TS21

FA/784 SBAC TS22

FA/785 SBAC TS23

FA/788 SBAC TS24

FA/789 SBAC TS25

**Surface discontinuities of externally threaded fasteners**

FA/603 JIS B1043

FA/646 JIS B1041

**Nondestructive Inspection****Liquid penetrant inspection of fasteners**

FA/371 MIL-STD-6866

FA/527 ASTM E1417

**Magnetic particle inspection of fasteners**

FA/377 MIL-STD-1949

FA/485 ASTM E1444

**NVLAP LAB CODE 200230-0****Wolverine Plating Corp.**

29456 Groesbeck Highway

Roseville, MI 48066-1943

Contact: Mr. Kenneth Wrobel

Phone: 810-771-5000

Fax: 810-771-5830

E-Mail: wolvpltg@aol.com

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Mechanical and Physical Testing and Inspection****Adhesion of metallic coatings on fasteners**

FA/143 ASTM B571

**Measurement of fastener coating thickness - X-ray methods**

FA/556 ASTM B568

**Salt spray testing of fasteners**

FA/166 ASTM B117

**NVLAP LAB CODE 200231-0****U.S. EPA**

P.O. Box 98517

Las Vegas, NV 89193-8517

Contact: Mr. Loyd D. Carroll

Phone: 702-798-2313

Fax: 702-798-2489

E-Mail: carroll.loyd@epa.gov

**Ionizing Radiation Dosimetry**

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing the Panasonic automatic reader model UD710A.

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993.

Panasonic TLD model UD802AT in a UD874 holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII.

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**NVLAP LAB CODE 200232-0**

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**LA Testing**

159 Pasadena Avenue  
S. Pasadena, CA 91030  
Contact: Mr. Derrick Tanner  
Phone: 323-254-9960  
Fax: 323-254-9982

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200234-0**

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**International Standards Laboratory**

21, Alley 37, Lane 122, Sec. 2  
Hsiwan Road  
Hsichih Chen, Taipei 221  
TAIWAN  
Contact: Mr. L. Y. Soong  
Phone: 886-2-2646-2550  
Fax: 886-2-2646-4641  
E-Mail: lysoong@acer.com.tw

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

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**NVLAP LAB CODE 200237-0**

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**Compliance Test Laboratories, Inc.**

137 Airport Road  
P.O. Box 120  
Liberty, SC 29657  
Contact: Mr. Pryor McGinnis  
Phone: 864-843-1604  
Fax: 864-843-1812  
E-Mail: ctl@prodigy.net  
URL: http://CTL-LAB.COM

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548  
**Safety Test Methods:**  
12/T50 AS/NZS 3260

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**NVLAP LAB CODE 200240-0**

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**CAM Environmental Services**

312 South Richey Street  
Pasadena, TX 77506-1059  
Contact: Mr. Andrew Steranko  
Phone: 713-475-9003  
Fax: 713-472-2117  
E-Mail: asteranko@rocketmail.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200245-0

**National Technical Systems**

1701 East Plano Parkway, Suite 150  
Plano, TX 75074-8127  
Contact: Mr. Jim Press  
Phone: 972-509-2566  
Fax: 972-509-0073  
E-Mail: jimp@ntscorp.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

NVLAP LAB CODE 200246-0

**Underwriters Laboratories, Inc.**

12 Laboratory Drive  
Research Triangle Park, NC 27709  
Contact: Mr. Rick A. Titus  
Phone: 847-272-8800 x43281  
Fax: 847-509-6321  
E-Mail: Rick.A.Titus@us.ul.com  
URL: <http://www.ul.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Safety Test Methods:**

12/T41 ACA TS-001

12/T50 AS/NZS 3260

NVLAP LAB CODE 200248-0

**Orfield Laboratories, Inc.**

2709 E. 25th Street  
Minneapolis, MN 55406  
Contact: Mr. Steven J. Orfield  
Phone: 612-721-2455  
Fax: 612-721-2457  
E-Mail: [steve.orfieldlabs.com](mailto:steve.orfieldlabs.com)  
URL: <http://www.orfield.labs.com>

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

- 08/P03 ASTM C423
- 08/P06 ASTM E90
- 08/P10 ANSI S12.31
- 08/P13 ANSI S12.32
- 08/P30 ASTM E1408
- 08/P31 ASTM E336
- 08/P32 ASTM E1007
- 08/P37 ASTM E966

NVLAP LAB CODE 200249-0

**Quest MicroAnalytics**

2530 Electronic Lane, Suite 712  
Dallas, TX 75220-1229  
Contact: Ms. Jennifer Jaber  
Phone: 214-351-4441  
Fax: 214-351-4487  
E-Mail: [questmic@flash.net](mailto:questmic@flash.net)

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200250-0

**ATC Associates Inc.**

8989 Herrmann Drive, Suite 300  
Columbia, MD 21045-4710  
Contact: Ms. Dawn E. Suszynski  
Phone: 410-381-0232  
Fax: 410-381-8908  
E-Mail: [Suszynski9@atc-enviro.com](mailto:Suszynski9@atc-enviro.com)



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200251-0****Storagtek Open Area Test Site**

One Storagtek Drive

Louisville, CO 80028-9172

Contact: Mr. Robert B. Reinert

Phone: 303-673-6256

Fax: 303-661-6717

E-Mail: [reinerb@louisville.stortek.com](mailto:reinerb@louisville.stortek.com)**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

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**NVLAP LAB CODE 200252-0****Underwriters Laboratories**

1655 Scott Blvd.

Santa Clara, CA 95050

Contact: Mr. Rick A. Titus

Phone: 847-272-8800 x43281

Fax: 847-509-6321

E-Mail: [Rick.A.Titus@us.ul.com](mailto:Rick.A.Titus@us.ul.com)URL: <http://www.ul.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance

characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Immunity Test Methods:**

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test

12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test

12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test

12/I04 IEC 61000-4-5 (1995): Surge Immunity Test

12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields

12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test

12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

**Safety Test Methods:**

12/T41 ACA TS-001

12/T50 AS/NZS 3260

**Telecommunications Test Methods:**

12/CS03 CS-03

12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital

12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection

12/T01b 68.316 Hearing Aid Compatibility: technical standards

12/T01c 68.302 Environmental simulation (Par. a,b)

12/T42 ACA TS-002

12/T44 ACA TS-004

12/T45 ACA TS-006

12/T49 ACA TS-016

NVLAP LAB CODE 200253-0

**CBS Fasteners, Inc.**

1345 N. Brasher Street  
Anaheim, CA 92807  
Contact: Mr. Bill Sisler  
Phone: 714-779-6368  
Fax: 714-779-0934  
E-Mail: bill@cbsfasteners.com

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

Code Designation

**Dimensional Inspection**

*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*

FA/411 ANSI/ASME B18.3

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

*Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/404 ANSI/ASME B18.18.2M

*External thread parameters - system 22*

FA/382 FED-STD-H28/20

*Surface texture*

FA/439 ANSI/ASME B46.1

**Mechanical and Physical Testing and Inspection**

*Axial tensile strength of full-size threaded fasteners*

FA/271 MIL-STD-1312-8

*Double shear of externally threaded fasteners*

FA/257 MIL-STD-1312-13

*Hydrogen embrittlement (stress durability) of externally threaded fasteners*

FA/176 MIL-STD-1312-5

*Magnetic permeability*

FA/214 ASTM A342 Test Method 3

*Measurement of fastener coating thickness - dimensional change method*

FA/495 MIL-STD-1312-12

*Measurement of fastener coating thickness - microscopical method*

FA/163 MIL-STD-1312-12

*Microhardness of fasteners*

FA/193 MIL-STD-1312-6

*Recess strength test in both the installation and removal directions*

FA/476 MIL-STD-1312-25

*Rockwell hardness of fasteners*

FA/201 MIL-STD-1312-6

*Rockwell superficial hardness of fasteners*

FA/209 MIL-STD-1312-6

*Single shear of externally threaded fasteners*

FA/256 MIL-STD-1312-20

*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*

FA/671 MIL-STD-1312-6

*Wedge tensile strength of full-size threaded fasteners*

FA/295 MIL-STD-1312-8

**Metallography**

*Decarburization and case depth measurement in fasteners*

FA/330 SAE J423

FA/483 ASTM A574 Sec. 12

*Determination of grain size of fasteners*

FA/638 ASTM E112

*Macroscopic examination of fasteners by etching*

FA/511 ASTM E340

FA/651 ASTM F788/788M

*Microscopic examination of fasteners by etching*

FA/341 ASTM E1077

FA/345 ASTM F788/788M

FA/351 ASTM E112

FA/512 ASTM E407

FA/552 ASTM E3

FA/679 ASTM A574

*Surface discontinuities of externally threaded fasteners*

FA/357 ASTM F788/788M

NVLAP LAB CODE 200254-0

**Vermont Fasteners Manufacturing**

50 Jonergin Drive  
P.O. Box 50  
Swanton, VT 05488-0050  
Contact: Mr. Pierre Gagne  
Phone: 802-868-3663  
Fax: 802-868-2089

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

Code Designation

**Dimensional Inspection**

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

*Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/403 ANSI/ASME B18.18.1M

FA/404 ANSI/ASME B18.18.2M

FA/494 ANSI B18.2.1

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/405 ANSI/ASME B18.18.3M

FA/963 ANSI B18.2.1

*External thread parameters - system 21*

FA/379 ANSI/ASME B1.3M

*External thread parameters - system 22*

FA/381 ANSI/ASME B1.3M

*Internal thread parameters - system 21*

FA/391 ANSI/ASME B1.3M

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**Internal thread parameters - system 22**

FA/393 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/265 ASTM A370 Sec. A3.2.1.4

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/267 ASTM F606M Sec. 3.4.1-3.4.3

FA/273 SAE J429

**Brinell hardness of fasteners**

FA/185 ASTM A370 Sec. 16

FA/186 ASTM E10

**Cone proof load of internally threaded fasteners (nuts)**

FA/219 ASTM F812/F812M

FA/220 ASTM F606 Sec. 4.3

FA/655 ASTM A194/A194M

**Hardness preparation**

FA/482 ASTM F606

**Measurement of fastener coating thickness - eddy-current method**

FA/149 ASTM E376

**Measurement of fastener coating thickness - magnetic methods**

FA/155 ASTM E376

**Microhardness of fasteners**

FA/654 SAE J121

**Proof load of full-size externally threaded fasteners**

FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/467 ASTM F606M Sec. 3.2.1-3.2.3

**Proof load of internally threaded fasteners (nuts)**

FA/235 ASTM A370 Sec. A3.5.1

FA/236 ASTM F606 Sec. 4.2

FA/237 ASTM F606M Sec. 4.2

**Rockwell hardness of fasteners**

FA/196 ASTM A370 Sec. 18

FA/197 ASTM E18

**Rockwell superficial hardness of fasteners**

FA/205 ASTM E18

FA/206 ASTM A370 Sec. 18

**Rotational capacity of full-size fasteners**

FA/243 ASTM A325

FA/245 ASTM A563

FA/965 AASHTO M164

**Wedge tensile strength of full-size threaded fasteners**

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

FA/291 ASTM F606M Sec. 3.5

FA/468 SAE J429 Sec. 5.5

**Metallography****Decarburization and case depth measurement in fasteners**

FA/328 SAE J121

FA/964 ASTM A490

**Macroscopic examination of fasteners by etching**

FA/336 SAE J123

FA/337 SAE J1061

FA/651 ASTM F788/788M

**Microscopic examination of fasteners by etching**

FA/344 SAE J121

**Surface discontinuities of externally threaded fasteners**

FA/357 ASTM F788/788M

FA/361 SAE J123

FA/362 SAE J1061

FA/652 ASTM A490

**Surface discontinuities of internally threaded fasteners**

FA/363 ASTM F812

FA/365 SAE J122

**Nondestructive Inspection****Magnetic particle inspection of fasteners**

FA/374 ASTM E709

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**NVLAP LAB CODE 200255-0****Rockford Bolt & Steel Co.**

126 Mill Street

Rockford, IL 61101

Contact: Mr. John Petty

Phone: 815-968-0514

Fax: 815-968-3111

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Dimensional Inspection****Dimensions of fasteners - straightness**

FA/423 ANSI/ASME B18.2.1

**External thread parameters - system 21**

FA/379 ANSI/ASME B1.3M

**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

**Hardness preparation**

FA/482 ASTM F606

**Rockwell hardness of fasteners**

FA/202 SAE J417

**Tension testing of machined specimens from externally threaded fasteners**

FA/278 ASTM A370

FA/279 ASTM F606 Sec. 3.6

**Wedge tensile strength of full-size threaded fasteners**

FA/290 ASTM F606 Sec. 3.5

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

FA/299 ASTM A370 Sec. A3.2.1.3(a)



NVLAP LAB CODE 200256-0

**Sundram Fasteners Limited Chemical Testing Laboratory**

Bonthapally Village, Medak District  
Andhra Pradesh 502 313  
INDIA  
Contact: Mr. Sampathkumar Moorthy  
Phone: 91-44-8521870  
Fax: 91-44-853-5435

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Chemical Analysis**

*Optical emission spectrochemical analysis*

FA/457 ASTM E415

NVLAP LAB CODE 200258-0

**W.R. Grace & Co.**

62 Whittemore Avenue  
Cambridge, MA 02140  
Contact: Mr. Stephen C. Garrity  
Phone: 617-498-4394  
Fax: 617-498-4360  
E-Mail: stephen.c.garrity@grace.com

**Construction Materials Testing**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Aggregates**

02/A03 ASTM C29  
02/A04 ASTM C40  
02/A07 ASTM C117  
02/A09 ASTM C127  
02/A10 ASTM C128  
02/A12 ASTM C136  
02/A15 ASTM D75  
02/A44 ASTM C566

**Cement**

02/A17 ASTM C109  
02/A21 ASTM C157  
02/A23 ASTM C185  
02/A26 ASTM C191  
02/A27 ASTM C204  
02/A30 ASTM C266  
02/A31 ASTM C305  
02/A32 ASTM C430  
02/A33 ASTM C451

**Concrete**

02/A01 ASTM C39  
02/A02 ASTM C617  
02/A40 ASTM C78  
02/A41 ASTM C192  
02/A43 ASTM C1064  
02/A45 ASTM C42

02/A47 ASTM C457  
02/G01 ASTM C31/C172/C143/C138/C231  
02/G02 ASTM C173  
**Standard Practices**  
02/A39 ASTM C1077

NVLAP LAB CODE 200259-0

**PFU TECHNOCONSUL EMC Center**

98-2 Nu, Unoke, Unoke-Machi, Kahoku-Gun  
Ishikawa-Ken 929-1192  
JAPAN  
Contact: Mr. Youichi Masui  
Phone: 81-76-283-8600  
Fax: 81-76-283-8601  
E-Mail: masui@pfu.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

NVLAP LAB CODE 200260-0

**Analab, LLC**

P.O. Box 34  
Spring Hill Road  
Sterling, PA 18463  
Contact: Mr. Paul Janecki  
Phone: 570-689-3919  
Fax: 570-689-3830  
E-Mail: info@analab1.com  
URL: http://www.analab1.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference



## INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|                               |                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
|                               | Characteristics of Information Technology Equipment                                                        |
| 12/F01                        | FCC Method - 47 CFR Part 15 - Digital Devices                                                              |
| 12/F01a                       | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                        |
| 12/F01b                       | Radiated Emissions                                                                                         |
| 12/T51                        | AS/NZS 3548                                                                                                |
| <b>Immunity Test Methods:</b> |                                                                                                            |
| 12/I01                        | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test                         |
| 12/I02                        | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03                        | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test                                        |
| 12/I04                        | IEC 61000-4-5 (1995): Surge Immunity Test                                                                  |
| 12/I05                        | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields                   |
| 12/I06                        | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test                                         |
| 12/I07                        | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests             |

### NVLAP LAB CODE 200261-0

#### Prottsa, S.A. de C.V.

Oriente 233 No. 91 Agricola Oriental  
C.P. 08500  
Mexico City  
MEXICO  
Contact: Mr. Gilberto Laguna  
Phone: 5-558-85-77  
Fax: 5-558-25-23  
E-Mail: prottsa@dfi.telmex.net.mx

#### Fasteners & Metals

Accreditation Valid Through: September 30, 2001

#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Dimensional Inspection

#### Dimensions of general purpose fasteners and high-volume machine assembly fasteners

|        |                     |
|--------|---------------------|
| FA/403 | ANSI/ASME B18.18.1M |
| FA/981 | ANSI/ASME B1.3M     |

#### Mechanical and Physical Testing and Inspection

#### Axial tensile strength of full-size threaded fasteners

|        |                            |
|--------|----------------------------|
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
|--------|----------------------------|

#### Bend test of full size eyebolts

|        |                             |
|--------|-----------------------------|
| FA/982 | AAR 4-2-15 Section 8 (1969) |
|--------|-----------------------------|

#### Cone proof load of internally threaded fasteners (nuts)

|        |                    |
|--------|--------------------|
| FA/220 | ASTM F606 Sec. 4.3 |
|--------|--------------------|

#### Hardness preparation

|        |           |
|--------|-----------|
| FA/482 | ASTM F606 |
|--------|-----------|

#### Measurement of fastener coating thickness - magnetic methods

|        |           |
|--------|-----------|
| FA/153 | ASTM B499 |
|--------|-----------|

#### Proof load of full-size externally threaded fasteners

|        |                            |
|--------|----------------------------|
| FA/226 | ASTM F606 Sec. 3.2.1-3.2.3 |
|--------|----------------------------|

|        |                             |
|--------|-----------------------------|
| FA/983 | AAR 4-2-15 Section 9 (1969) |
|--------|-----------------------------|

#### Proof load of internally threaded fasteners (nuts)

|        |                       |
|--------|-----------------------|
| FA/235 | ASTM A370 Sec. A3.5.1 |
|--------|-----------------------|

|        |                    |
|--------|--------------------|
| FA/236 | ASTM F606 Sec. 4.2 |
|--------|--------------------|

#### Rockwell hardness of fasteners

|        |                   |
|--------|-------------------|
| FA/196 | ASTM A370 Sec. 18 |
|--------|-------------------|

#### Tension testing of machined specimens from externally threaded fasteners

|        |                    |
|--------|--------------------|
| FA/279 | ASTM F606 Sec. 3.6 |
|--------|--------------------|

#### Torque-tension of full-size threaded fasteners

|        |                               |
|--------|-------------------------------|
| FA/984 | AAR 4-2-15 Section 13b (1969) |
|--------|-------------------------------|

|        |                         |
|--------|-------------------------|
| FA/985 | ASTM A183 Section 8.2.2 |
|--------|-------------------------|

|        |                           |
|--------|---------------------------|
| FA/986 | Prottsa W.I. 1.030 rev. b |
|--------|---------------------------|

#### Wedge tensile strength of full-size threaded fasteners

|        |                    |
|--------|--------------------|
| FA/290 | ASTM F606 Sec. 3.5 |
|--------|--------------------|

#### Yield strength of full-size externally threaded fasteners

|        |                      |
|--------|----------------------|
| FA/298 | ASTM F606 Sec. 3.2.4 |
|--------|----------------------|

### NVLAP LAB CODE 200263-0

#### Murata Mfg. Co., Ltd. Yokohama Technical Center EMM Office

Yokohama Technical Center  
1-18 Hakusan 1-Chome, Midori-ku Yokohama  
Kanagawa 226-006  
JAPAN  
Contact: Mr. Yuzo Katayama  
Phone: 045-939-7100  
Fax: 045-939-7156  
E-Mail: katayama@murata.co.jp

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Emissions Test Methods:

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
|----------|-------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|        |                                               |
|--------|-----------------------------------------------|
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
|--------|-----------------------------------------------|

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
|---------|-----------------------------------------------------|

|         |                    |
|---------|--------------------|
| 12/F01b | Radiated Emissions |
|---------|--------------------|

|        |             |
|--------|-------------|
| 12/T51 | AS/NZS 3548 |
|--------|-------------|

# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

## NVLAP LAB CODE 200265-0

### R & D Services, Inc.

2594 West Broad Street  
P.O. Box 2400  
Cookeville, TN 38502-2400  
Contact: Mr. Ronald S. Graves  
Phone: 931-372-8871  
Fax: 931-525-3896  
E-Mail: [rdserv@usit.net](mailto:rdserv@usit.net)  
URL: <http://rdservices.com>

### Thermal Insulation Materials

Accreditation Valid Through: September 30, 2001

#### NVLAP

Code Designation

#### Corrosiveness

01/C01 ASTM C739 (Sec. 9)  
01/C02 16 CFR-Part 1209.5

#### Flammability

01/F07 16 CFR-Part 1209.6  
01/F08 16 CFR-Part 1209.7  
01/F09 ASTM C739 (Sec. 10) by ASTM E970  
01/F10 ASTM C739 (Sec. 14)

#### Mass, Density, and Dimensional Stability

01/D02 ASTM C167  
01/D24 ASTM C739 (Sec. 12)  
01/D26 16 CFR-Part 1209.4  
01/D27 ASTM C739 (Sec. 8)

#### Related Material Properties

01/V05 ASTM C739 (Sec. 11)  
01/V06 ASTM C739 (Sec. 15)

#### Thermal Resistance

01/T06 ASTM C518  
01/T10 ASTM C687

## NVLAP LAB CODE 200271-0

### Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation

11 Thomas Road South  
Hawthorne, NJ 07507-0651  
Contact: Mr. Chet Radwan  
Phone: 973-427-8555  
Fax: 973-427-4723

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Dimensional Inspection

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/805 MIL-DTL-18240  
FA/806 MIL-F-18240

#### Mechanical and Physical Testing and Inspection

#### Prevailing torque

FA/217 IFI-100/107  
FA/794 MIL-DTL-18240

FA/795 IFI 124  
FA/796 MIL-F-18240  
FA/797 IFI 125  
FA/798 IFI 524  
FA/833 IFI 525

#### *Reusability test of self-locking internally threaded fasteners*

FA/792 MIL-F-18240 (externally and internally threaded)  
FA/793 MIL-DTL-18240 (externally and internally threaded)

## NVLAP LAB CODE 200272-0

### NYLOK Fastener Corporation

313 North Euclid Way  
Anaheim, CA 92801-6738  
Contact: Mr. William Steinman  
Phone: 714-635-3993  
Fax: 714-635-9553  
E-Mail: [sales@nylokfastener.com](mailto:sales@nylokfastener.com)  
URL: <http://www.nylock.com>

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Dimensional Inspection

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/802 NYLOK TP-NW-5.0  
FA/805 MIL-DTL-18240  
FA/806 MIL-F-18240

#### *External thread parameters - system 21*

FA/379 ANSI/ASME B1.3M  
FA/380 FED-STD-H28/20

#### *External thread parameters - system 22*

FA/381 ANSI/ASME B1.3M  
FA/382 FED-STD-H28/20  
FA/383 MIL-S-7742  
FA/384 MIL-S-8879  
FA/534 SAE AS 8879  
FA/803 ASME B1.15

#### *Internal thread parameters - system 21*

FA/391 ANSI/ASME B1.3M  
FA/392 FED-STD-H28/20

#### *Internal thread parameters - system 22*

FA/393 ANSI/ASME B1.3M  
FA/394 FED-STD-H28/20  
FA/395 MIL-S-7742  
FA/396 MIL-S-8879  
FA/537 SAE AS 8879  
FA/804 ASME B1.15

#### Mechanical and Physical Testing and Inspection

#### *Axial tensile strength of full-size threaded fasteners*

FA/266 ASTM F606 Sec. 3.4.1-3.4.3  
FA/799 NASM 1312-8

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued*****Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/801 QQ-P-416  
FA/875 NASM 1312-5

***Hydrogen embrittlement (stress durability) of internally threaded fasteners***

FA/800 QQ-P-416

***Prevailing torque***

FA/217 IFI-100/107  
FA/794 MIL-DTL-18240  
FA/795 IFI 124  
FA/796 MIL-F-18240  
FA/797 IFI 125  
FA/798 IFI 524

***Reusability test of self-locking internally threaded fasteners***

FA/792 MIL-F-18240  
FA/793 MIL-DTL-18240

**NVLAP LAB CODE 200273-0****NYLOK Fastener Corporation**

Macomb Plant Testing Lab  
15260 Hallmark Drive  
Macomb, MI 48042-4007  
Contact: Mr. Clifford Terry  
Phone: 810-786-0100  
Fax: 810-786-0498

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

***NVLAP***

*Code      Designation*

***Dimensional Inspection******Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***

FA/802 NYLOK TP-NW-5.0

***Mechanical and Physical Testing and Inspection******Prevailing torque***

FA/216 ANSI B18.16.1M  
FA/217 IFI-100/107  
FA/557 DIN 267, Part 15  
FA/794 MIL-DTL-18240  
FA/795 IFI 124  
FA/796 MIL-F-18240  
FA/797 IFI 125  
FA/798 IFI 524  
FA/807 GM 6189P  
FA/808 Ford ES382101-S100  
FA/809 Ford ES-N800688-S100  
FA/810 Ford ES-384103-S-A  
FA/811 Ford WA 970  
FA/812 Ford ES-F77U-9E926-AA  
FA/813 Chrysler PF-5077  
FA/814 Chrysler PF-5144  
FA/815 Chrysler PF-5461  
FA/816 Chrysler PF-5683  
FA/817 Chrysler PF-6157

FA/818 Chrysler PF-6158  
FA/819 DIN 267, Part 27  
FA/820 Navistar 0810  
FA/821 GM TES-113  
FA/822 Bendix W1287  
FA/823 Mack Trucks 10AMSI  
FA/824 Mack Trucks 3AXS5  
FA/825 Mack Trucks 6AXS5  
FA/826 Allied Signal WI-504  
FA/827 GM 6175M/6194M  
FA/828 Ford ES-20010-S100  
FA/829 Ford ES-20007-S100  
FA/830 Ford WX 200  
FA/831 Ford WSS-M11P45-A1  
FA/832 Ford ESS-M11P24-A1  
FA/833 IFI 525  
FA/834 Rockwell International Q-29  
FA/835 Ford ES-N804199-S192  
FA/836 Ford WE 950  
FA/837 Ford ES-21002-S100  
FA/838 Ford ES-21006-S100  
FA/839 Ford ES-21000-S100  
FA/840 Chrysler MS-CD914  
FA/841 GM 6076M  
FA/842 Chrysler PS-8542  
FB/1149 DIN 267, Part 28  
FB/1150 DaimlerChrysler PF-6616  
FB/1151 Bosch UI-197  
FB/1152 Bosch WI-287

***Torque-tension of full-size threaded fasteners***

FA/306 IFI-101  
FA/307 MIL-STD-1312-15  
FA/308 SAE J174

**NVLAP LAB CODE 200274-0****Kyowa Kogyosyo Co., Ltd. Test Laboratory**

1-57, Kogyo-Danchi  
Komatsu City, Ishikawa  
JAPAN  
Contact: Mr. Mataichi Fukuda  
Phone: 81-761-21-0531  
Fax: 81-761-21-0533

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

***NVLAP***

*Code      Designation*

***Dimensional Inspection******Dimensions of ISO grade A and B fasteners***

FA/589 JIS B1071

***Dimensions of fasteners - bearing surface squareness***

FA/649 JIS B1071

***Dimensions of fasteners - straightness***

FA/648 JIS B1071

***External thread parameters - system 21***

FA/647 JIS B1071

***Surface texture***

FA/650 JIS B1071



**Mechanical and Physical Testing and Inspection**

*Axial tensile strength of full-size threaded fasteners*

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/574 JIS B1051 Sec. 4.2.2

*Charpy impact (u-notch) testing*

FA/845 JIS Z2242

*Hardness preparation*

FA/482 ASTM F606

*Measurement of fastener coating thickness - magnetic methods*

FA/596 JIS H8501

*Microhardness of fasteners*

FA/620 JIS Z2244

FA/642 JIS B1051 Sec. 4.2.5

*Proof load of full-size externally threaded fasteners*

FA/573 JIS B1051 Sec. 4.2.4

*Rockwell hardness of fasteners*

FA/197 ASTM E18

FA/572 JIS Z2245

FA/707 JIS B1051 Sec. 4.2.5

*Tension testing of machined specimens from externally threaded fasteners*

FA/581 JIS B1051 Sec. 4.2.1

FA/582 JIS Z2241

*Wedge tensile strength of full-size threaded fasteners*

FA/290 ASTM F606 Sec. 3.5

FA/575 JIS B1051 Sec. 4.2.3

**Metallography**

*Decarburization and case depth measurement in fasteners*

FA/645 JIS B1051

*Surface discontinuities of externally threaded fasteners*

FA/603 JIS B1043

NVLAP LAB CODE 200275-0

**NYLOK Fastener Corporation - Chicago Testing Laboratory**

6465 Proesel Avenue  
Lincolnwood, IL 60645

Contact: Mr. Peter Beck

Phone: 800-446-5956

Fax: 847-674-1269

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

NVLAP

Code Designation

**Dimensional Inspection**

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/850 NYLOK TP-NC-5.0

**Mechanical and Physical Testing and Inspection**

*Prevailing torque*

FA/846 NYLOK TP-NC-1.0

FA/847 NYLOK TP-NC-2.0

FA/848 NYLOK TP-NC-3.0

FA/849 NYLOK TP-NC-4.0

NVLAP LAB CODE 200278-0

**Casey Products, Inc.**

1955 University Lane

Lisle, IL 60532-4149

Contact: Mr. Michael B. Connelly, CQE

Phone: 630-960-3360

Fax: 630-960-3419

E-Mail: mbconnelly@aol.com

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

NVLAP

Code Designation

**Dimensional Inspection**

*Dimensions of ISO grade A and B fasteners*

FA/407 ISO 3269

FA/408 ISO 4759-1

*Dimensions of ISO grade C fasteners*

FA/409 ISO 3269

FA/410 ISO 4759-1

*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*

FA/411 ANSI/ASME B18.3

FA/412 ANSI/ASME B18.3.1M

FA/413 ANSI/ASME B18.3.3M

FA/414 ANSI/ASME B18.3.4M

FA/415 ANSI/ASME B18.3.5M

FA/416 ANSI/ASME B18.3.6M

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

FA/424 ANSI/ASME B18.2.3.1M

FA/425 ANSI/ASME B18.2.3.2M

FA/426 ANSI/ASME B18.2.3.3M

FA/427 ANSI/ASME B18.2.3.4M

FA/428 ANSI/ASME B18.2.3.5M

FA/429 ANSI/ASME B18.2.3.6M

FA/433 ANSI/ASME B18.5.2.2M

*Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/403 ANSI/ASME B18.18.1M

FA/404 ANSI/ASME B18.18.2M

FA/486 MIL-STD-120 (W/ Notice dtd 9 SEP 63)

FA/870 ANSI/ASME B1.16M

FA/871 ANSI/ASME B1.2

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/405 ANSI/ASME B18.18.3M

FA/406 ANSI/ASME B18.18.4M

*External thread parameters - ISO*

FA/390 ISO 1502

*External thread parameters - system 21*

FA/379 ANSI/ASME B1.3M

*External thread parameters - system 22*

FA/381 ANSI/ASME B1.3M



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Internal thread parameters - ISO**

FA/402 ISO 1502

**Internal thread parameters - system 21**

FA/391 ANSI/ASME B1.3M

**Internal thread parameters - system 22**

FA/393 ANSI/ASME B1.3M

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FA/265 ASTM A370 Sec. A3.2.1.4

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/267 ASTM F606M Sec. 3.4.1-3.4.3

FA/270 ISO 898-1 Sec. 8.2

FA/273 SAE J429

FA/274 SAE J1216

**Hardness preparation**

FA/464 ASTM F606M

FA/482 ASTM F606

**Measurement of fastener coating thickness - eddy-current method**

FA/149 ASTM E376

**Measurement of fastener coating thickness - magnetic methods**

FA/155 ASTM E376

**Microhardness of fasteners**

FA/189 ASTM E384

**Prevailing torque**

FA/217 IFI-100/107

**Proof load of full-size externally threaded fasteners**

FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/228 ISO 898-1 Sec. 8.4

FA/229 SAE J429 Sec. 5.3

FA/467 ASTM F606M Sec. 3.2.1-3.2.3

FA/577 SAE J1216 Sec. 3.3

**Proof load of internally threaded fasteners (nuts)**

FA/235 ASTM A370 Sec. A3.5.1

FA/236 ASTM F606 Sec. 4.2

FA/237 ASTM F606M Sec. 4.2

FA/239 ISO 898-2 Sec. 8.1

FA/241 SAE J995 Sec. 5.1

**Rockwell hardness of fasteners**

FA/196 ASTM A370 Sec. 18

FA/197 ASTM E18

**Rockwell superficial hardness of fasteners**

FA/205 ASTM E18

FA/206 ASTM A370 Sec. 18

**Test for embrittlement of metallic coated externally threaded fasteners**

FA/179 ASTM F606 Sec. 7

FA/180 ASTM F606M Sec. 7

**Total extension at fracture of externally threaded fasteners**

FA/285 ASTM F606 Sec. 3.7

FA/286 ASTM F606M Sec. 3.7

**Wedge tensile strength of full-size threaded fasteners**

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

FA/291 ASTM F606M Sec. 3.5

FA/294 ISO 898-1 Sec. 8.5

FA/468 SAE J429 Sec. 5.5

FA/469 SAE J1216 Sec. 3.6

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

FA/300 ASTM F606M Sec. 3.2.4

**Metallography****Decarburization and case depth measurement in fasteners**

FA/323 ASTM E1077

FA/324 ISO 898-1

FA/325 ISO 898-5

FA/328 SAE J121

FA/329 SAE J419

FA/330 SAE J423

FA/483 ASTM A574 Sec. 12

FA/519 ASTM A574M

FA/520 ASTM F835

FA/758 SAE J121M

FA/866 ASTM F835M

FA/867 ASTM F912

FA/868 ASTM F912M

**Determination of grain size of fasteners**

FA/638 ASTM E112

**Macroscopic examination of fasteners by etching**

FA/484 ASTM E381

FA/511 ASTM E340

**Microscopic examination of fasteners by etching**

FA/512 ASTM E407

**Surface discontinuities of externally threaded fasteners**

FA/357 ASTM F788/F788M

FA/359 ISO 6157-1

FA/360 ISO 6157-3

FA/361 SAE J123

FA/362 SAE J1061

FA/859 ASTM A574

FA/860 ASTM A574M

FA/861 ASTM F835

FA/862 ASTM F835M

FA/863 ASTM F912

FA/864 ASTM F912M

**Surface discontinuities of internally threaded fasteners**

FA/365 SAE J122

FA/727 ISO 6157-2

FA/865 ASTM F812/F812M

**NVLAP LAB CODE 200281-0****Fujitsu Evaluation Engineering Laboratory**

140 Miyamoto

Numazu, Shizuoka-Pref. 410-0396

JAPAN

Contact: Mr. Yoshiyuki Okita

Phone: 81-559-24-7209

Fax: 81-559-24-6183

E-Mail: okita@psl.fujitsu.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions
- 12/T51 AS/NZS 3548

**NVLAP LAB CODE 200282-0**

**Electronics Test Centre**

302 Legget Drive, Unit 100

Kanata, Ont. K2K 1Y5

CANADA

Contact: Mr. Dave Scribailo

Phone: 613-599-6800

Fax: 613-599-7614

E-Mail: daves@etc-mpbt.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**MIL-STD-462 : Conducted Emissions:**

- 12/A01 MIL-STD-462 Method CE01
- 12/A06 MIL-STD-462 Method CE03
- 12/A13 MIL-STD-462 Version D Method CE101
- 12/A14 MIL-STD-462 Version D Method CE102

**MIL-STD-462 : Conducted Susceptibility:**

- 12/B01 MIL-STD-462 Method CS01
- 12/B02 MIL-STD-462 Method CS02
- 12/B05 MIL-STD-462 Method CS06
- 12/B12 MIL-STD-462 Version D Method CS101
- 12/B17 MIL-STD-462 Version D Method CS114
- 12/B19 MIL-STD-462 Version D Method CS116

**MIL-STD-462 : Radiated Emissions:**

- 12/D04 MIL-STD-462 Version D Method RE101
- 12/D05 MIL-STD-462 Version D Method RE102

**MIL-STD-462 : Radiated Susceptibility:**

- 12/E09 MIL-STD-462 Version D Method RS103

**Safety Test Methods:**

- 12/T41 ACA TS-001
- 12/T50 AS/NZS 3260

**NVLAP LAB CODE 200287-0**

**Small IAC Test Laboratory**

107 Park St. N

Peterborough, ON K9J-7B5

CANADA

Contact: Ms. Nancy Edgar-Ward

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Fax: 705-748-7677

E-Mail: Nancy.edgar-ward@indsys.ge.com

**Efficiency of Electric Motors**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

- 24/M01 IEEE 112, Method B

**NVLAP LAB CODE 200288-0**

**Fong Prean Industrial Co., Ltd.**

No. 6 Kung-Wei St. Tzu Hsin T'Sun

Tzu Kuan Hsiang

Kaohsiung Hsien

TAIWAN

Contact: Mr. Chang San Tien

Phone: 886-7-6170526

Fax: 886-7-6103160

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

NVLAP

Code Designation

**Dimensional Inspection**

*Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/854 ANSI/ASME B18.6.4

FA/855 ISO 1479

**Mechanical and Physical Testing and Inspection**

**Drill-drive test**

FA/247 SAE J78  
FA/851 DIN 7504

**Hardness preparation**

FA/464 ASTM F606M  
FA/482 ASTM F606

**Measurement of fastener coating thickness - X-ray**

**methods**

FA/760 ASTM A754/A754M

**Microhardness of fasteners**

FA/189 ASTM E384

**Rockwell hardness of fasteners**

FA/197 ASTM E18

**Rockwell superficial hardness of fasteners**

FA/205 ASTM E18

**Salt spray testing of fasteners**

FA/166 ASTM B117

**Torsional strength test of thread rolling and self-drilling**

**tappings screws**

FA/751 SAE J933  
FA/852 ISO 2702  
FA/853 DIN 7504

**Metallography**

**Decarburization and case depth measurement in fasteners**

FA/330 SAE J423  
FA/562 ASTM G79

**Surface discontinuities of externally threaded fasteners**

FA/357 ASTM F788/F788M  
FA/361 SAE J123

**NVLAP LAB CODE 200291-0**

**NGC Testing Services, National Gypsum**

**Research Center**

1650 Military Road  
Buffalo, NY 14217-1198  
Contact: Mr. Robert J. Menchetti  
Phone: 716-873-9750  
Fax: 716-873-9753  
E-Mail: [rjmenchetti@nationalgypsum.com](mailto:rjmenchetti@nationalgypsum.com)  
URL: <http://www.national-gypsum.com/testing/index.html>

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

08/P03 ASTM C423  
08/P06 ASTM E90  
08/P07 ASTM E492  
08/P30 ASTM E1408  
08/P34 ASTM E1414  
08/P44 ISO 354  
08/P45 ISO 140, Part 3  
08/P50 ISO 140, Part 9  
08/P54 SAE J1400  
08/P58 ASTM E1222

**NVLAP LAB CODE 200292-0**

**BCAG Fastener Quality Test Lab Everett Site**

P.O. Box 370, MS 04-02  
Seattle, WA 98124-2207  
Contact: Mr. Eugene J. Brown  
Phone: 425-342-3888  
Fax: 425-266-4673  
E-Mail: [eugene.j.brown@boeing.com](mailto:eugene.j.brown@boeing.com)

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

Code Designation

**Chemical Analysis**

**Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

FA/472 ASTM E1447

**Optical emission spectrochemical analysis**

FA/456 ASTM E327  
FA/457 ASTM E415  
FA/458 ASTM E607  
FA/459 ASTM E1086  
FA/460 ASTM E1251

**Spot test analysis**

FB/1076 D1-8018-2

**Dimensional Inspection**

**Dimensions of fasteners - bearing surface squareness**

FA/911 BPS-N-70

**Dimensions of fasteners - gaging for slotted nuts**

FA/417 ANSI/ASME B18.2.2  
FA/418 ANSI/ASME B18.2.4.3M

**Dimensions of fasteners - straightness**

FA/423 ANSI/ASME B18.2.1

**Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap**

FA/405 ANSI/ASME B18.18.3M  
FA/406 ANSI/ASME B18.18.4M  
FB/1060 BPS-F-69  
FB/1061 BPS-F-76  
FB/1062 BPS-F-67  
FB/1063 D-11805  
FB/1064 BPS-N-70  
FB/1065 BPS-F-68

**External thread parameters - system 22**

FA/381 ANSI/ASME B1.3M  
FA/382 FED-STD-H28/20  
FA/383 MIL-S-7742  
FA/384 MIL-S-8879

**Internal thread parameters - system 21**

FA/391 ANSI/ASME B1.3M  
FA/392 FED-STD-H28/20  
FA/529 MIL-S-7742

**Surface texture**

FA/439 ANSI/ASME B46.1

**Mechanical and Physical Testing and Inspection**



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued*****Adhesion of metallic coatings on fasteners***

FA/532 BMS 10-85M Sec. 8.2

***Axial tensile strength of full-size threaded fasteners***

FA/271 MIL-STD-1312-8

FA/799 NASM 1312-8

FB/1067 D2-2860

***Double shear of externally threaded fasteners***

FA/257 MIL-STD-1312-13

FA/880 NASM 1312-13

FB/1066 D2-2860

FB/1070 NAS 498

***Fatigue of full-size threaded fasteners***

FA/183 MIL-STD-1312-11

FA/184 NAS 1069

FA/876 NASM 1312-11

FB/1038 D2-2860

***Hardness preparation***

FB/1071 NAS 498

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/176 MIL-STD-1312-5

FA/801 QQ-P-416

FA/875 NASM 1312-5

***Hydrogen embrittlement (stress durability) of internally threaded fasteners***

FA/178 MIL-STD-1312-14

FA/800 QQ-P-416

FB/1033 NASM 1312-14

***Intergranular corrosion susceptibility of austenitic stainless steel fasteners - oxalic acid***

FA/174 ASTM A262 Sec. 3-7, Practice A

***Measurement of fastener coating thickness - dimensional change method***

FA/495 MIL-STD-1312-12

FA/874 NASM 1312-12

***Measurement of fastener coating thickness - microscopical method***

FA/160 ASTM B487

FA/163 MIL-STD-1312-12

FA/873 NASM 1312-12

***Microhardness of fasteners***

FA/189 ASTM E384

***Prevailing torque***

FA/630 MIL-N-25027

FA/899 BPS-N-70

FA/902 NAS 3350

***Proof load of full-size externally threaded fasteners***

FA/691 MIL-STD-1312-8

FB/1037 NASM 1312-8

FB/1041 D2-2860

***Proof load of internally threaded fasteners (nuts)***

FB/1039 MIL-STD-1312-8

FB/1040 NASM 1312-8

FB/1042 D2-2860

***Push out test of floating plate nuts, gang channel nuts, and anchor nuts***

FA/116 MIL-N-25027

FA/891 BPS-N-70

***Recess strength test in both the installation and removal directions***

FA/886 NASM 1312-25

***Reusability test of self-locking internally threaded fasteners***

FA/124 MIL-N-25027

FA/125 NAS 3350

FA/774 BPS-N-70

***Rockwell hardness of fasteners***

FA/196 ASTM A370 Sec. 18

FA/197 ASTM E18

FA/201 MIL-STD-1312-6

FA/878 NASM 1312-6

FB/1072 BAC 5650

***Rockwell superficial hardness of fasteners***

FA/205 ASTM E18

FA/206 ASTM A370 Sec. 18

FA/209 MIL-STD-1312-6

FB/1035 NASM 1312-6

***Salt spray testing of fasteners***

FA/168 MIL-STD-1312-1

FB/1032 NASM 1312-1

***Tension testing of machined specimens from externally threaded fasteners***

FA/475 ASTM E8

FB/1043 ASTM B557

***Test for embrittlement of metallic coated externally threaded fasteners***

FA/525 MIL-STD-1312-5

FB/1034 NASM 1312-5

***Torque-out test***

FA/133 MIL-N-25027

FB/1031 BPS-N-70

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***

FA/671 MIL-STD-1312-6

FB/1036 NASM 1312-6

***Wedge tensile strength of full-size threaded fasteners***

FA/295 MIL-STD-1312-8

FB/1044 NASM 1312-8

FB/1069 D2-2860

***Wrench torque test of externally wrenching nuts of spline and hexagon and double hexagon (1***

FA/141 MIL-N-25027

FA/142 NAS 3350

FA/893 BPS-N-70

***Yield strength of full-size externally threaded fasteners***

FA/303 MIL-STD-1312-8

FB/1045 NASM 1312-8

FB/1068 D2-2860

***Metallography******Decarburization and case depth measurement in fasteners***

FA/323 ASTM E1077

FA/904 BPS-N-70

FB/1046 BPS-F-76

FB/1047 BPS-F-67

FB/1048 NAS 498



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

FB/1073 BPS-F-46

*Determination of grain size of fasteners*

FA/331 ASTM E112

*Macroscopic examination of fasteners by etching*

FA/511 ASTM E340

*Microscopic examination of fasteners by etching*

FA/512 ASTM E407

*Surface discontinuities of externally threaded fasteners*

FA/357 ASTM F788/788M

FA/859 ASTM A574

FB/1049 NAS 4002

FB/1050 NAS 4003

FB/1051 NAS 4004

FB/1052 BPS-F-67

FB/1053 BPS-F-69

FB/1054 BPS-F-68

FB/1055 BPS-F-76

FB/1056 NAS 498

FB/1057 FF-S-86

*Surface discontinuities of internally threaded fasteners*

FA/907 BPS-N-70

**Nondestructive Inspection***Liquid penetrant inspection of fasteners*

FA/527 ASTM E1417

FB/1059 MIL-I-25135

FB/1074 BAC 5423

*Magnetic particle inspection of fasteners*

FA/485 ASTM E1444

FB/1075 BAC 5424

**NVLAP LAB CODE 200293-0****EMSL Analytical, Inc.**

10768 Baltimore Avenue

Beltsville, MD 20705

Contact: Mr. Joseph Centifonti

Phone: 301-937-5700

Fax: 301-937-5701

E-Mail: jcentifonti@emsl.com

URL: <http://www.emsl.com>**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200294-0****Micron Environmental Labs**

292 E. Foothill Blvd., Suite B

Arcadia, CA 91006

Contact: Mr. Daniel Gamez

Phone: 626-357-8627

Fax: 626-256-9017

E-Mail: [micronlabs@integrityonline7.com](mailto:micronlabs@integrityonline7.com)**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200296-0****Okawa Laboratory**

6357-1 Oba, Omiya-cho

Naka-gun, Ibaraki-ken 319-21

JAPAN

Contact: Mr. Katsuyoshi Okawa

Phone: 81-2955-3-0111

Fax: 81-2955-3-5290

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code Designation***Dimensional Inspection***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/607 JIS B1071

**Mechanical and Physical Testing and Inspection***Axial tensile strength of full-size threaded fasteners*

FA/574 JIS B1051 Sec. 4.2.2

*Measurement of fastener coating thickness - magnetic methods*

FA/596 JIS H8501

*Proof load of full-size externally threaded fasteners*

FA/573 JIS B1051 Sec. 4.2.4

*Rockwell hardness of fasteners*

FA/572 JIS Z2245

FA/616 JIS B1051 Sec. 4.3

FA/707 JIS B1051 Sec. 4.2.5

*Salt spray testing of fasteners*

FA/569 JIS Z2371

*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*

FA/571 JIS Z2244

FA/643 JIS B1051 Sec. 4.2.5

**Metallography***Decarburization and case depth measurement in fasteners*

FA/645 JIS B1051

*Surface discontinuities of externally threaded fasteners*

FA/646 JIS B1041

**NVLAP LAB CODE 200297-0****Intertek Testing Services NA Inc.**

27611 La Paz Road, Suite C

Laguna Niguel, CA 92677

Contact: Mr. Jeffrey Davidson

Phone: 949-448-4100

Fax: 949-448-4111

E-Mail: [jeffrey@itsqs.com](mailto:jeffrey@itsqs.com)URL: <http://www.etlsemko.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

NVLAP

Code      Designation

**Emission Test Methods:**

- 12/CIS22    IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a   IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b   CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01      FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a     Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b     Radiated Emissions
- 12/T51      AS/NZS 3548

**Immunity Test Methods:**

- 12/I01      IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
- 12/I02      IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
- 12/I03      IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
- 12/I04      IEC 61000-4-5 (1995): Surge Immunity Test
- 12/I05      IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
- 12/I06      IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test
- 12/I07      IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

**MIL-STD-462 : Conducted Emissions:**

- 12/A14      MIL-STD-462 Version D Method CE102

**Safety Test Methods:**

- 12/T41      ACA TS-001
- 12/T50      AS/NZS 3260

NVLAP LAB CODE 200298-0

**SPS Technologies Aerospace Fasteners Group**

2701 S. Harbor Boulevard  
Santa Ana, CA 92702-1259  
Contact: Mr. Rob Dewitz  
Phone: 714-850-3664  
Fax: 714-850-3605  
E-Mail: rdewitz@spstech.com  
URL: http://www.spstech.com

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

NVLAP

Code      Designation

**Dimensional Inspection**

*Dimensions of fasteners - bearing surface squareness*

FA/633      MIL-N-25027

*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*

FA/411      ANSI/ASME B18.3  
FA/540      MIL-STD-33787  
FA/634      MIL-STD-21132  
FA/635      SAE AS 870

*Dimensions of fasteners - straightness*

FA/423      ANSI/ASME B18.2.1

*External thread parameters - system 21*

FA/379      ANSI/ASME B1.3M  
FA/380      FED-STD-H28/20  
FA/628      MIL-S-8879

*External thread parameters - system 22*

FA/381      ANSI/ASME B1.3M  
FA/382      FED-STD-H28/20  
FA/384      MIL-S-8879

*External thread parameters - system 23*

FA/385      ANSI/ASME B1.3M  
FA/386      FED-STD-H28/20  
FA/388      MIL-S-8879

*Internal thread parameters - system 21*

FA/391      ANSI/ASME B1.3M  
FA/392      FED-STD-H28/20  
FA/629      MIL-S-8879

*Internal thread parameters - system 22*

FA/393      ANSI/ASME B1.3M  
FA/394      FED-STD-H28/20  
FA/537      SAE AS 8879

*Surface texture*

FA/439      ANSI/ASME B46.1

**Mechanical and Physical Testing and Inspection**

*Adhesion of metallic coatings on fasteners*

FA/143      ASTM B571

*Axial tensile strength of full-size threaded fasteners*

FA/265      ASTM A370 Sec. A3.2.1.4  
FA/266      ASTM F606 Sec. 3.4.1-3.4.3  
FA/271      MIL-STD-1312-8

*Double shear of externally threaded fasteners*

FA/257      MIL-STD-1312-13

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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***Hardness preparation***

FA/482 ASTM F606

***Humidity testing of fasteners***

FA/169 MIL-STD-753 Test Method 101

FA/473 MIL-STD-1312-3

FA/923 ASTM A967

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/176 MIL-STD-1312-5

FA/924 ASTM F606

***Hydrogen embrittlement (stress durability) of internally threaded fasteners***

FA/178 MIL-STD-1312-14

***Magnetic permeability***

FA/214 ASTM A342 Test Method 3

***Measurement of fastener coating thickness - X-ray methods***

FA/556 ASTM B568

***Measurement of fastener coating thickness - magnetic methods***

FA/153 ASTM B499

FA/159 MIL-STD-1312-12

***Measurement of fastener coating thickness - microscopical method***

FA/160 ASTM B487

FA/163 MIL-STD-1312-12

***Microhardness of fasteners***

FA/189 ASTM E384

FA/193 MIL-STD-1312-6

***Permanent set test of self-locking nuts***

FA/109 MIL-N-25027

***Prevailing torque***

FA/630 MIL-N-25027

***Proof load of full-size externally threaded fasteners***

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

***Proof load of internally threaded fasteners (nuts)***

FA/236 ASTM F606 Sec. 4.2

***Push out test of floating plate nuts, gang channel nuts, and anchor nuts***

FA/926 SPS 316

***Recess strength test in both the installation and removal directions***

FA/476 MIL-STD-1312-25

***Reusability test of self-locking internally threaded fasteners***

FA/124 MIL-N-25027

FA/522 MIL-STD-1312-31

***Rockwell hardness of fasteners***

FA/197 ASTM E18

FA/201 MIL-STD-1312-6

***Rockwell superficial hardness of fasteners***

FA/205 ASTM E18

FA/209 MIL-STD-1312-6

***Room temperature of three cycles test of floating plate nuts, gang channel nuts and anchor***

FA/927 SPS 380

***Salt spray testing of fasteners***

FA/166 ASTM B117

FA/168 MIL-STD-1312-1

***Single shear of externally threaded fasteners***

FA/255 ASTM F606

FA/256 MIL-STD-1312-20

FA/925 ASTM F606M

***Stress rupture of fasteners***

FA/260 ASTM E139

FA/261 ASTM E292

FA/262 MIL-STD-1312-10

***Tension testing of machined specimens from externally threaded fasteners***

FA/278 ASTM A370

FA/279 ASTM F606 Sec. 3.6

FA/475 ASTM E8

***Test for embrittlement of metallic coated externally threaded fasteners***

FA/179 ASTM F606 Sec. 7

FA/525 MIL-STD-1312-5

***Torque-out test***

FA/133 MIL-N-25027

FA/523 MIL-STD-1312-31

***Torque-tension of full-size threaded fasteners***

FA/307 MIL-STD-1312-15

***Vibration of full-size threaded fasteners***

FA/311 MIL-STD-1312-7

FA/631 MIL-N-25027

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***

FA/492 ASTM E92

***Wedge tensile strength of full-size threaded fasteners***

FA/289 ASTM A370

FA/290 ASTM F606 Sec. 3.5

***Yield strength of full-size externally threaded fasteners***

FA/298 ASTM F606 Sec. 3.2.4

FA/299 ASTM A370 Sec. A3.2.1.3(a)

***Metallography******Decarburization and case depth measurement in fasteners***

FA/323 ASTM E1077

***Determination of grain size of fasteners***

FA/638 ASTM E112

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M

***Surface discontinuities of internally threaded fasteners***

FA/865 ASTM F812/F812M

***Nondestructive Inspection******Liquid penetrant inspection of fasteners***

FA/371 MIL-STD-6866

FA/527 ASTM E1417



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****Magnetic particle inspection of fasteners**

FA/485 ASTM E1444

**NVLAP LAB CODE 200299-0****Okai Iron Works Co., Ltd.**

3-12-41 Tsuruhara

Izumisano Osaka 598-0071

JAPAN

Contact: Mr. Yasuhiro Okai

Phone: 0724-63-6101

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E-Mail: okaikk@osk3.3web.ne.jp

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**Dimensional Inspection****Dimensions of ISO grade A and B fasteners**

FA/408 ISO 4759-1

FA/930 ISO 4759-3

**Dimensions of ISO grade C fasteners**

FA/410 ISO 4759-1

FA/931 ISO 4759-3

**Dimensions of fasteners - bearing surface squareness**

FA/936 ISO 4759-1

**Dimensions of fasteners - flange screw heads and flange nuts**

FA/933 ISO 4161

FA/934 ISO 4162

**Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets**

FA/411 ANSI/ASME B18.3

FA/932 ISO 4759-1

**Dimensions of fasteners - straightness**

FA/935 ISO 4759-1

**External thread parameters - system 21**

FA/379 ANSI/ASME B1.3M

**Internal thread parameters - system 21**

FA/391 ANSI/ASME B1.3M

**Surface texture**

FA/937 ISO 4288

**Mechanical and Physical Testing and Inspection****Adhesion of metallic coatings on fasteners**

FA/144 ISO 2819

**Axial tensile strength of full-size threaded fasteners**

FA/270 ISO 898-1 Sec. 8.2

**Measurement of fastener coating thickness - magnetic methods**

FA/153 ASTM B499

**Measurement of fastener coating thickness - microscopical method**

FA/162 ISO 1463

**Microhardness of fasteners**

FA/191 ISO 6507-2

FA/192 ISO 6507-3

**Proof load of full-size externally threaded fasteners**

FA/228 ISO 898-1 Sec. 8.4

**Proof load of internally threaded fasteners (nuts)**

FA/239 ISO 898-2 Sec. 8.1

**Rockwell hardness of fasteners**

FA/200 ISO 6508

**Tension testing of machined specimens from externally threaded fasteners**

FA/282 ISO 898-1

**Total extension at fracture of externally threaded fasteners**

FA/287 ISO 3506

**Wedge tensile strength of full-size threaded fasteners**

FA/294 ISO 898-1 Sec. 8.5

**Yield strength of full-size externally threaded fasteners**

FA/298 ASTM F606 Sec. 3.2.4

**Metallography****Decarburization and case depth measurement in fasteners**

FA/324 ISO 898-1

FA/928 ISO 2639

**Macroscopic examination of fasteners by etching**

FA/929 ISO 4969

**Surface discontinuities of externally threaded fasteners**

FA/359 ISO 6157-1

FA/360 ISO 6157-3

**Surface discontinuities of internally threaded fasteners**

FA/727 ISO 6157-2

**NVLAP LAB CODE 200300-0****Akzo Kashima Ltd., Kawasaki Technical Center**

5-23-13 Minamikase, Saiwai-ku

Kawasaki 211-0955

JAPAN

Contact: Mr. Shuichi Kobayashi

Phone: 81-479-40-1097

Fax: 81-479-46-1788

E-Mail: shuichi.kobayashi@nifty.ne.jp

URL: <http://www.akzoemc.co.jp>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**Telecommunications Test Methods:**

12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 -



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|         |                                                                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | Analog and Digital                                                                                                                                                                                                                                        |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation;<br>68.304 Leakage current limit.; 68.306<br>Hazardous voltage limit.; 68.308 Signal power<br>limit.; 68.310 Longitudinal balance limit.;<br>68.312 On-hook impedance limit.; 68.314<br>Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical<br>standards                                                                                                                                                                                                  |
| 12/T01c | 68.302 Environmental simulation (Par. a,b)                                                                                                                                                                                                                |

**NVLAP LAB CODE 200303-0****A.E.S.L. Environmental Laboratory**

800 North Mary Street  
Tempe, AZ 85281-1945  
Contact: Mr. Jerry Denton  
Phone: 480-966-3714  
Fax: 480-394-0188

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200304-0****BAE Environmental and EMC Test Centre**

Airport Works  
Rochester  
Kent ME1 2XX  
UNITED KINGDOM  
Contact: Mr. Frank Ewen  
Phone: 01-634-816794  
Fax: 01-634-816647  
E-Mail: frank.ewen@baesystems.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

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|-------------|--------------------|
|-------------|--------------------|

**MIL-STD-462 : Conducted Emissions:**

|        |                         |
|--------|-------------------------|
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A12 | MIL-STD-462 Method CE07 |

**MIL-STD-462 : Conducted Susceptibility:**

|        |                         |
|--------|-------------------------|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |

**MIL-STD-462 : Radiated Emissions:**

|        |                         |
|--------|-------------------------|
| 12/D02 | MIL-STD-462 Method RE02 |
|--------|-------------------------|

**MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| 12/E02 | MIL-STD-462 Method RS02                                                                                                                |
| 12/E03 | MIL-STD-462 Method RS03 (Consult<br>laboratory for field strengths available)                                                          |
| 12/E04 | MIL-STD-462 Method RS03 employing<br>RADHAZ procedures for high level testing<br>(Consult laboratory for field strengths<br>available) |

**NVLAP LAB CODE 200305-0****GE Owensboro Test Laboratory**

3301 Old Hartford Road  
Owensboro, KY 42303  
Contact: Mr. Robert Riley  
Phone: 270-686-1270  
Fax: 270-686-1240

**Efficiency of Electric Motors**

Accreditation Valid Through: March 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |                    |
|--------|--------------------|
| 24/M01 | IEEE 112, Method B |
|--------|--------------------|

**NVLAP LAB CODE 200306-0****Zacta Technology Corporation Yonezawa Testing Center**

4149-7 Hachimanpara 5-chome  
Yonezawa-shi Yamagata 992-1128  
JAPAN  
Contact: Mr. Shin-ichi Abe  
Phone: 81-238-28-2880  
Fax: 81-238-28-2888  
E-Mail: shinichi\_abe@zacta.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

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| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                                    |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment                                             |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of<br>measurement of radio disturbance<br>characteristics of information technology<br>equipment, Amendment 1:1995, and<br>Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital<br>Devices                                                                                                                                   |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz<br>to 30 MHz                                                                                                                             |
| 12/F01b   | Radiated Emissions                                                                                                                                                                 |
| 12/T51    | AS/NZS 3548                                                                                                                                                                        |

**Immunity Test Methods:**

|        |                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1<br>(1998): Electrostatic Discharge Immunity Test                            |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1<br>(1998): Radiated, Radio-Frequency<br>Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast<br>Transient/Burst Immunity Test                                           |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test                                                                        |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to<br>Conducted Disturbances, Induced                                             |

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|        |                                                                                                      |
|--------|------------------------------------------------------------------------------------------------------|
|        | Radio-Frequency Fields                                                                               |
| 12/106 | IEC 61000-4-8 (1993): Power Frequency<br>Magnetic Field Immunity Test                                |
| 12/107 | IEC 61000-4-11 (1994): Voltage Dips, Short<br>Interruptions and Voltage Variations Immunity<br>Tests |

**NVLAP LAB CODE 200308-0****SNB Laboratory**

49 Abbott Street  
P.O. Box 68  
Cumberland, RI 02864-0968  
Contact: Mr. James Faria  
Phone: 401-722-6700  
Fax: 401-726-4960

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code      Designation*

***Mechanical and Physical Testing and Inspection******Axial tensile strength of full-size threaded fasteners***

FA/265    ASTM A370 Sec. A3.2.1.4  
FA/266    ASTM F606 Sec. 3.4.1-3.4.3  
FA/273    SAE J429

***Cone proof load of internally threaded fasteners (nuts)***

FA/220    ASTM F606 Sec. 4.3

***Proof load of full-size externally threaded fasteners***

FA/226    ASTM F606 Sec. 3.2.1-3.2.3  
FA/229    SAE J429 Sec. 5.3

***Proof load of internally threaded fasteners (nuts)***

FA/236    ASTM F606 Sec. 4.2

***Rockwell hardness of fasteners***

FA/197    ASTM E18

***Tension testing of machined specimens from externally threaded fasteners***

FA/278    ASTM A370  
FA/279    ASTM F606 Sec. 3.6

***Wedge tensile strength of full-size threaded fasteners***

FA/289    ASTM A370  
FA/290    ASTM F606 Sec. 3.5

***Yield strength of full-size externally threaded fasteners***

FA/298    ASTM F606 Sec. 3.2.4

**NVLAP LAB CODE 200309-0****TDK Corporation's 10m Anechoic Chamber**

2-15-7 Higashi-Owada  
Ichikawa-shi, Chiba-ken 272-8558  
JAPAN  
Contact: Mr. Akira Bandoh  
Phone: 011-81-47-378-9190  
Fax: 011-81-47-378-9780  
E-Mail: aban@mb1.tdk.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

***Emissions Test Methods:***

12/CIS22    IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/F01    FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a    Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b    Radiated Emissions  
12/T51    AS/NZS 3548

**NVLAP LAB CODE 200312-0****Sony Electronics Inc. Product Quality Division****EMC Group**

16450 West Bernardo Drive, Building 8  
San Diego, CA 92127-1804  
Contact: Mr. Dave Traver  
Phone: 858-942-2601  
Fax: 858-942-9231  
E-Mail: david.traver@am.sony.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

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*Code      Designation*

***Emissions Test Methods:***

12/CIS22    IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/CIS22a    IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment, Amendment 1:1995, and  
Amendment 2:1996.  
12/F01    FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a    Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b    Radiated Emissions  
12/T51    AS/NZS 3548

***Immunity Test Methods:***

12/101    IEC 61000-4-2 (1995) and Amendment 1  
(1998): Electrostatic Discharge Immunity Test  
12/102    IEC 61000-4-3 (1995) and Amendment 1  
(1998): Radiated, Radio-Frequency  
Electromagnetic Field Immunity Test  
12/103    IEC 61000-4-4 (1995): Electrical Fast  
Transient/Burst Immunity Test  
12/104    IEC 61000-4-5 (1995): Surge Immunity Test  
12/105    IEC 61000-4-6 (1996): Immunity to  
Conducted Disturbances, Induced

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|        |                                                                                                |
|--------|------------------------------------------------------------------------------------------------|
| 12/I06 | Radio-Frequency Fields                                                                         |
|        | IEC 61000-4-8 (1993): Power Frequency                                                          |
| 12/I07 | Magnetic Field Immunity Test                                                                   |
|        | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

**NVLAP LAB CODE 200313-0****Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility**

901 Elmgrove Road  
Rochester, NY 14653-5513  
Contact: Ms. Gina T. Wyffels  
Phone: 716-726-3200  
Fax: 716-726-4297  
E-Mail: gwyffels@kodak.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200317-0****Raytheon Technical Services Co. EMI Laboratory**

6125 E. 21st Street, M/S 32  
Indianapolis, IN 46219-2058  
Contact: Mr. Keith Hines  
Phone: 317-306-7484  
Fax: 317-306-3739  
E-Mail: hinesk@indy.raytheon.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

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**MIL-STD-462 : Conducted Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |

|        |                                    |
|--------|------------------------------------|
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

**MIL-STD-462 : Conducted Susceptibility:**

|        |                                    |
|--------|------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01            |
| 12/B02 | MIL-STD-462 Method CS02            |
| 12/B05 | MIL-STD-462 Method CS06            |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |

**MIL-STD-462 : Radiated Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |

**MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 12/E02 | MIL-STD-462 Method RS02                                                    |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E08 | MIL-STD-462 Version D Method RS101                                         |
| 12/E09 | MIL-STD-462 Version D Method RS103                                         |

**NVLAP LAB CODE 200318-0****Motorola PPG Compliance Laboratory**

1500 Gateway Boulevard, M/S 75  
Boynton Beach, FL 33426  
Contact: Mr. Mac Elliott, III  
Phone: 561-739-3792  
Fax: 561-739-2341  
E-Mail: FME001@email.mot.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

|         |                                               |
|---------|-----------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01b | Radiated Emissions                            |

**NVLAP LAB CODE 200319-0****TDK Corporation's Chikumagawa Open Site**

543 Otai  
Saku-shi, Nagano-ken 385-8555  
JAPAN  
Contact: Mr. Akira Bandoh  
Phone: 011-81-47-378-9190  
Fax: 011-81-47-378-9780  
E-Mail: aban@mb1.tdk.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

*Code      Designation*

**Emissions Test Methods:**

|          |                                          |
|----------|------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of |
|----------|------------------------------------------|



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | measurement of radio disturbance characteristics of information technology equipment                                                                                   |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200320-0****Modern Plating Corporation**

P.O. Box 838, South Hancock Avenue  
Freeport, IL 61032-0838  
Contact: Mr. Daniel James Mauer  
Phone: 815-235-3111  
Fax: 815-235-4571

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Chemical Analysis***Solution chemical analysis*

FA/969      MPC AA Work Instructions

**Dimensional Inspection***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*

FA/404      ANSI/ASME B18.18.2M

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/405      ANSI/ASME B18.18.3M

FA/406      ANSI/ASME B18.18.4M

**Mechanical and Physical Testing and Inspection***Adhesion of metallic coatings on fasteners*

FA/143      ASTM B571

*Measurement of fastener coating thickness - X-ray methods*

FA/556      ASTM B568

*Measurement of fastener coating thickness - eddy-current method*

FA/148      ASTM B244

*Measurement of fastener coating thickness - magnetic methods*

FA/153      ASTM B499

*Measurement of fastener coating thickness - weight of coating*

FA/970      MPC Coating Weight Work Instructions

*Salt spray testing of fasteners*

FA/166      ASTM B117

**NVLAP LAB CODE 200321-0****Binder Metal Products, Inc.**

14909 South Broadway  
Gardena, CA 90248  
Contact: Mr. Bill Weber  
Phone: 213-321-4835  
Fax: 310-532-2936  
E-Mail: billw@bindermetal.com  
URL: http://bindermetal.com

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Dimensional Inspection***Dimensions of fasteners - flatness*

FA/975      ASME Y14.5M

FA/976      Binder QAI 0007

**Mechanical and Physical Testing and Inspection***Hardness preparation*

FA/482      ASTM F606

*Measurement of fastener coating thickness - eddy-current method*

FA/977      Binder QAI 0005

*Rockwell hardness of fasteners*

FA/197      ASTM E18

FA/978      Binder QAI 0006

**NVLAP LAB CODE 200322-0****Nowicki & Associates, Inc.**

33516 9th Avenue South Bldg. 6  
Federal Way, WA 98003-6322  
Contact: Mr. Michael Quoc Lam  
Phone: 253-927-5233  
Fax: 253-924-0323  
E-Mail: RENOWICK1@AOL.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200323-0****ALAC**

522 East 20th Street, Suite 6E  
New York, NY 10009  
Contact: Mr. Aleksandr Knobel  
Phone: 646-654-1473  
Fax: 646-654-1476

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001



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**NVLAP LAB CODE 200324-0**


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**Clark Seif Clark, Inc.**

21732 Devonshire Street, 2nd Floor  
 Chatsworth, CA 91311  
 Contact: Mr. Christian Goerrissen  
 Phone: 818-727-2553  
 Fax: 818-727-2556  
 E-Mail: cgoerrissen@csceng.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 200325-0**


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**TEC-AN, Inc.**

2517 S. Purdue Avenue  
 Oklahoma City, OK 73128-1830  
 Contact: Mr. Donald J. Nist  
 Phone: 405-681-7076  
 Fax: 405-681-7256

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200327-0**


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**Saturn Fasteners, Inc.**

425 South Varney Street  
 Burbank, CA 91502  
 Contact: Mr. Charles Boda  
 Phone: 818-846-7145  
 Fax: 818-846-7306

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

***Dimensional Inspection***

*Dimensions of fasteners - hexagon and double hexagon  
 (12 point) and spline sockets*

FA/972    NAS 4002

FA/973    NAS 624-644

*Dimensions of fasteners - straightness*

FA/974    NAS 4002

*External thread parameters - SAE fastener with MJ  
 metric screw threads*

FA/693    FED-STD-H28/20

*External thread parameters - system 21*

FA/380    FED-STD-H28/20

*External thread parameters - system 22*

FA/382    FED-STD-H28/20

*External thread parameters - system 23*

FA/386    FED-STD-H28/20

*Surface texture*

FA/439    ANSI/ASME B46.1

*Mechanical and Physical Testing and Inspection*

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*Axial tensile strength of full-size threaded fasteners*

FA/271    MIL-STD-1312-8

*Bend test of full size eyebolts*

FA/971    MIL-B-6812 Section 4.5.4

*Double shear of externally threaded fasteners*

FA/257    MIL-STD-1312-13

*Fatigue of full-size threaded fasteners*

FA/183    MIL-STD-1312-11

*Hydrogen embrittlement (stress durability) of externally  
 threaded fasteners*

FA/176    MIL-STD-1312-5

*Magnetic permeability*

FA/214    ASTM A342 Test Method 3

*Measurement of fastener coating thickness - dimensional  
 change method*

FA/495    MIL-STD-1312-12

*Measurement of fastener coating thickness - eddy-current  
 method*

FA/152    MIL-STD-1312-12

*Microhardness of fasteners*

FA/189    ASTM E384

*Recess strength test in both the installation and removal  
 directions*

FA/476    MIL-STD-1312-25

*Rockwell hardness of fasteners*

FA/201    MIL-STD-1312-6

*Rockwell superficial hardness of fasteners*

FA/209    MIL-STD-1312-6

*Tension testing of machined specimens from externally  
 threaded fasteners*

FA/475    ASTM E8

*Wedge tensile strength of full-size threaded fasteners*

FA/290    ASTM F606 Sec. 3.5

***Metallography***

*Decarburization and case depth measurement in  
 fasteners*

FA/483    ASTM A574 Sec. 12

*Determination of grain size of fasteners*

FA/331    ASTM E112

*Macroscopic examination of fasteners by etching*

FA/511    ASTM E340

*Microscopic examination of fasteners by etching*

FA/341    ASTM E1077

*Surface discontinuities of externally threaded fasteners*

FA/357    ASTM F788/788M

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NVLAP LAB CODE 200328-0

**Prospect Testing Labs, Inc.**

1245 Forest Avenue  
Des Plaines, IL 60018  
Contact: Mr. Seung W. Lyu  
Phone: 847-827-4766  
Fax: 847-299-6222

**Fasteners & Metals**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code      Designation*

**Chemical Analysis**

*Optical emission spectrochemical analysis*

FA/457    ASTM E415  
FA/459    ASTM E1086  
FA/460    ASTM E1251

**Mechanical and Physical Testing and Inspection**

*Axial tensile strength of full-size threaded fasteners*

FA/266    ASTM F606 Sec. 3.4.1-3.4.3  
FA/273    SAE J429  
FA/530    ASTM E8  
FA/799    NASM 1312-8

*Brinell hardness of fasteners*

FA/186    ASTM E10

*Hydrogen embrittlement (stress durability) of externally threaded fasteners*

FA/875    NASM 1312-5  
FA/924    ASTM F606  
FA/967    GM 6010M

*Hydrogen embrittlement (stress durability) of internally threaded fasteners*

FA/968    GM 6010M

*Intergranular corrosion susceptibility in austenitic stainless steel fasteners - nitric acid*

FA/173    ASTM A262 Sec. 15-21, Practice C

*Intergranular corrosion susceptibility of austenitic stainless steel fasteners - oxalic acid*

FA/174    ASTM A262 Sec. 3-7, Practice A

*Measurement of fastener coating thickness - microscopical method*

FA/160    ASTM B487  
FA/873    NASM 1312-12

*Measurement of fastener coating thickness - weight of coating*

FA/164    ASTM A90

*Microhardness of fasteners*

FA/189    ASTM E384

*Proof load of full-size externally threaded fasteners*

FA/226    ASTM F606 Sec. 3.2.1-3.2.3  
FA/229    SAE J429

*Proof load of internally threaded fasteners (nuts)*

FA/236    ASTM F606 Sec. 4.2  
FA/241    SAE J995 Sec. 5.1

*Rockwell hardness of fasteners*

FA/197    ASTM E18

*Rockwell superficial hardness of fasteners*

FA/205    ASTM E18

*Tension testing of machined specimens from externally threaded fasteners*

FA/475    ASTM E8

*Torque-tension of full-size threaded fasteners*

FA/882    NASM 1312-15

*Torsional strength test of thread rolling and self-drilling tapping screws*

FA/252    ASTM F738M

FA/254    SAE J81

FA/751    SAE J933

FA/966    ASTM F880M

*Wedge tensile strength of full-size threaded fasteners*

FA/290    ASTM F606 Sec. 3.5  
FA/468    SAE J429

**Metallography**

*Decarburization and case depth measurement in fasteners*

FA/323    ASTM E1077  
FA/328    SAE J121

*Determination of grain size of fasteners*

FA/331    ASTM E112

*Macroscopic examination of fasteners by etching*

FA/551    ASTM E3

*Microscopic examination of fasteners by etching*

FA/552    ASTM E3

*Surface discontinuities of externally threaded fasteners*

FA/361    SAE J123  
FA/362    SAE J1061

*Surface discontinuities of internally threaded fasteners*

FA/365    SAE J122

NVLAP LAB CODE 200331-0

**HomeTek Technology Inc.**

P.O Box: 13-131, Pan-Chiao City  
No. 85-5 Shir Men Rd., Tu Chen City  
Taipei Shien 236  
TAIWAN  
Contact: Mr. Grant Huang  
Phone: 886-2-22608375  
Fax: 886-2-22748013  
E-Mail: hometek@ms15.hinet.net

**Electromagnetic Compatibility & Telecommunication**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

12/CIS22    IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a    IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance

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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
|           | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.                                |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

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**NVLAP LAB CODE 200333-0****EMSL Analytical, Inc.**

175 Clearbrook Road  
Cross West Chester Executive Plaza  
Elmsford, NY 10523  
Contact: Mr. Robert Georgens  
Phone: 914-592-4688  
Fax: 914-592-6798  
E-Mail: [elmsfordlab@emsl.com](mailto:elmsfordlab@emsl.com)  
URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200335-0****Hygeia Laboratories, Inc.**

9955 NW 116 Way, Suite 1  
Miami, FL 33178  
Contact: Mr. Julio Lopez  
Phone: 305-882-8200  
Fax: 305-882-1200  
E-Mail: [LOPEZ31@ATC-ENVIRO.COM](mailto:LOPEZ31@ATC-ENVIRO.COM)  
URL: <http://www.atc-enviro.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

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**NVLAP LAB CODE 200336-0****Pratt & Whitney Materials Control Lab/Quality & Standards Lab**

400 Main Street, Mail Stop 114-47  
East Hartford, CT 06108  
Contact: Mr. Stanley F. Ciempa, Jr.  
Phone: 860-565-2857  
Fax: 860-565-1506  
E-Mail: [ciempasf@pweh.com](mailto:ciempasf@pweh.com)

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Chemical Analysis****Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen**

FB/1024    P&W M-165

FB/1025    P&W M-166

FB/1026    P&W M-175

**Energy dispersive X-ray analysis**

FB/1030    P&W N-51

**Optical emission spectrochemical analysis**

FB/1027    P&W M-186

FB/1028    P&W N-11

**X-ray fluorescence (XRF) spectrochemical analysis**

FB/1029    P&W N-60

**Mechanical and Physical Testing and Inspection****Axial tensile strength of full-size threaded fasteners**

FB/1018    P&W K-32

**Brinell hardness of fasteners**

FB/1009    P&W E-O Supp C

**Charpy impact (v-notch) testing**

FB/1014    P&W K-162

**Elevated temperature testing capability**

FB/1135    P&W K-33

**Fatigue of full-size threaded fasteners**

FB/1008    P&W K-317

**Flareability test of clinch and shank nuts**

FB/1006    P&W K-309

**Measurement of fastener coating thickness - microscopical method**

FB/1136    P&W E-23

**Microhardness of fasteners**

FB/1010    P&W E-O Supp C

**Proof load of full-size externally threaded fasteners**

FB/1015    P&W K-32

**Proof load of internally threaded fasteners (nuts)**

FB/1016    P&W K-32

**Rockwell hardness of fasteners**

FB/1011    P&W E-O Supp C

**Rockwell superficial hardness of fasteners**

FB/1012    P&W E-O Supp C

**Salt spray testing of fasteners**

FB/1007    P&W P-23

**Stress rupture of fasteners**

FB/1017    P&W E-1107

**Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)**

FB/1013    P&W E-O Supp C

**Metallography****Decarburization and case depth measurement in fasteners**

FB/1019    P&W E-23

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued***Determination of grain size of fasteners*

FA/331 ASTM E112

*Macroscopic examination of fasteners by etching*

FB/1020 P&amp;W K-76

*Microscopic examination of fasteners by etching*

FB/1021 P&amp;W E-23

*Surface discontinuities of externally threaded fasteners*

FB/1022 P&amp;W E-23

FB/1023 P&amp;W E-242

**NVLAP LAB CODE 200340-0****Diversified T.E.S.T. Technologies, Inc.**

556 Route 222, P.O. Box 8

Groton, NY 13073

Contact: Mr. Thomas P. Sims

Phone: 607-898-4218

Fax: 607-898-4830

E-Mail: tom@dtllab.com

URL: <http://www.dttl.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP**Code Designation**Emissions Test Methods:*

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200341-0****United Steel and Fasteners Inc.**

1500 Industrial Drive

Itasca, IL 60143

Contact: Mr. G. Perri

Phone: 630-250-0900

Fax: 630-250-0220

E-Mail: [us\\_f@msn.com](mailto:us_f@msn.com)**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code Designation**Dimensional Inspection**Dimensions of fasteners - bearing surface squareness*

FA/745 ANSI B18.2.1

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

*Dimensions of general purpose fasteners and**high-volume machine assembly fasteners*

FA/494 ANSI B18.2.1

*Mechanical and Physical Testing and Inspection**Axial tensile strength of full-size threaded fasteners*

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/273 SAE J429

*Hardness preparation*

FA/482 ASTM F606

*Proof load of full-size externally threaded fasteners*

FA/226 ASTM F606 Sec. 3.2.1-3.2.3

FA/229 SAE J429

*Rockwell hardness of fasteners*

FA/202 SAE J417

*Tension testing of machined specimens from externally threaded fasteners*

FA/279 ASTM F606 Sec. 3.6

FA/283 SAE J429

**NVLAP LAB CODE 200342-0****Genicom Corporation**

One Solutions Way

Waynesboro, VA 22980-1999

Contact: Mr. J. J. Tolbert

Phone: 540-949-1105

Fax: 540-949-1989

E-Mail: [jtolbert@genicom.com](mailto:jtolbert@genicom.com)URL: <http://www.genicom.com>**Electromagnetic Compatibility & Telecommunication**

Accreditation Valid Through: June 30, 2001

*NVLAP**Code Designation**Emissions Test Methods:*

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200345-0****Ricoh Company LTD. Ohmori Acoustics Test Site**

3-6, 1 Chome, Nakamagome, Ohta-ku

Tokyo 143-8555

JAPAN

Contact: Mr. Yuji Noritake

Phone: 03-3777-8183

Fax: 03-3777-0811

E-Mail: [yuji.noritake@nts.ricoh.co.jp](mailto:yuji.noritake@nts.ricoh.co.jp)**Acoustical Testing Services**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code Designation*

08/P24 ANSI S12.10

08/P48 ISO 7779



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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**NVLAP LAB CODE 200346-0**

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**SCILAB California, Inc.**

24416 South Main Street, Suite 308

Carson, CA 90745

Contact: Ms. Cristina Tabatt

Phone: 310-834-4868

Fax: 310-834-4772

E-Mail: ctabatt@scilabs.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 200347-0**

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**Quietek Corporation**

No. 75-2 Wang-Yeh Velley, Yung-Hsing

Chiung-Lin

Hsin-Chu Country

TAIWAN

Contact: Mr. Gene Chang

Phone: 886-3-5928858

Fax: 886-3-5928859

E-Mail: gene@quietek.com

URL: <http://www.quietek.com>**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code      Designation***Emissions Test Methods:**12/CIS22    IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbancecharacteristics of information technology  
equipment12/F01      FCC Method - 47 CFR Part 15 - Digital  
Devices12/F01a     Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz

12/F01b     Radiated Emissions

12/T51      AS/NZS 3548

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**NVLAP LAB CODE 200349-0**

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**Crisp Analytical Laboratory**

2081 Hutton Drive, Suite 301

Carrollton, TX 75006

Contact: Mr. David Bertolacci

Phone: 972-488-1414

Fax: 972-488-8006

URL: <http://www.calabs.homepage.com>**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 200350-0**

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**White Environmental Consultants, Inc.**

1130 N. Nimitz Hwy. #3220

Honolulu, HI 96817

Contact: Mr. Jim Willard

Phone: 808-536-8819

Fax: 808-536-0191

E-Mail: weclabs@gte.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 200358-0**

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**Patriot Environmental Laboratory Services, Inc.**

12832 Valley View Street, Suite 107

Garden Grove, CA 92845

Contact: Mr. James Thornbrugh, II

Phone: 714-899-8900

Fax: 714-899-7098

E-Mail: Patriotlab@earthlink.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 200361-0**

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**Architectural Testing Inc.**

130 Derry Ct.

York, PA 17402

Contact: Mr. Eric J. Miller

Phone: 717-764-7700

Fax: 717-764-4129

E-Mail: emiller@testati.com

URL: <http://www.testati.com>**Acoustical Testing Services**

Accreditation Valid Through: September 30, 2001

*NVLAP**Code      Designation*

08/P03      ASTM C423

08/P06      ASTM E90

08/P10      ANSI S12.31

08/P30      ASTM E1408

08/P31      ASTM E336

08/P37      ASTM E966

08/P43      ASTM E1425

08/P44      ISO 354

08/P45      ISO 140, Part 3

08/P46      ISO 3741

## NVLAP LAB CODE 200362-0

**TEAC Corporation EMC Center**

857 Koyata, Iruma-shi  
Saitama-ken 358-8510  
JAPAN

Contact: Mr. Hirokatsu Nagashima  
Phone: 81-42-462-7159  
Fax: 81-42-963-7153  
E-Mail: hiro@ir.teac.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |

## NVLAP LAB CODE 200363-0

**Sun Microsystems, Inc. EMC Testing**

901 San Antonio Road  
MS UMPK25-101  
Palo Alto, CA 94303-4900

Contact: Mr. Hugh Hagel  
Phone: 650-786-3215  
Fax: 650-786-4316  
E-Mail: Hugh.Hagel@sun.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

## NVLAP LAB CODE 200364-0

**Kyushu Matsushita Electric Test Lab EMC Center**

441-13 Nagahasu Tateishi-cho  
Tosu-shi Saga-ken 841-8585  
JAPAN

Contact: Mr. Hideo Hara  
Phone: 81-942-84-8472  
Fax: 81-942-84-8470  
E-Mail: PAN40452@pios.kme.mei.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

## NVLAP LAB CODE 200368-0

**Sony Minokamo EMC Site**

9-15-22, Hongo-cho Minokamo City  
Gifu-Pref. 505-8510  
JAPAN

Contact: Mr. Yoshiki Matsuguchi  
Phone: 81-574-25-8161  
Fax: 81-574-25-9143  
E-Mail: matuguti@mkm.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |

NVLAP LAB CODE 200369-0

**PWC Environmental Laboratory, Pearl Harbor**

Code 343  
400 Marshall Road  
Pearl Harbor, HI 96860  
Contact: Ms. Ginger Nakamoto  
Phone: 808-474-3704 X317  
Fax: 808-471-4534  
E-Mail: nakamotogj@pwcpearl.navy.mil

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200371-0

**Audix Technology (Shanghai) Co., Ltd.**

3-4 F., 34 Bldg. 680 Guiping Road  
Caohejing, Hi-Tech Park  
Shanghai 200233  
CHINA  
Contact: Mr. Jeremy Geng  
Phone: 86-21-649-55500  
Fax: 86-21-649-50791  
E-Mail: jgeng@ihw.com.cn

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/F01 FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b Radiated Emissions

NVLAP LAB CODE 200372-0

**AUDIX Technology (Shenzhen) Co., Ltd.**

No. 6 Ke Feng Road 52 Block Shenzhen  
Science & Industry Park, Nantou  
Shenzhen, Guangdong  
CHINA  
Contact: Mr. Smart Tsai  
Phone: 86-755-663-9496  
Fax: 86-755-663-2877  
E-Mail: smartsai@msl2.hinet.net

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance

characteristics of information technology  
equipment, Amendment 1:1995, and  
Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of  
Measurement of Radio Interference  
Characteristics of Information Technology  
Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

NVLAP LAB CODE 200373-0

**Fujitsu General EMC Laboratory**

1116, Suenaga, Takatsu-ku  
Kawasaki 213-8502  
JAPAN  
Contact: Mr. Hiroyuki Shimanoe  
Phone: 81-44-861-7897  
Fax: 81-44-861-9890  
E-Mail: shimanoe@fujitsugeneral.co.jp  
URL: <http://www.fujitsugeneral.co.jp/emc/>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of  
measurement of radio disturbance  
characteristics of information technology  
equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital  
Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz  
to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

NVLAP LAB CODE 200374-0

**EnviroHealth Technologies, Inc.**

3830 Washington Boulevard, Suite 123  
St. Louis, MO 63108-3406  
Contact: Mr. William J. Lowry  
Phone: 314-531-9868  
Fax: 314-531-9196  
E-Mail: eht@stlnet.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001



NVLAP LAB CODE 200375-0

**EMSL Analytical, Inc.**  
11931 Industriplex, Suite 100  
Baton Rouge, LA 70809  
Contact: Mr. Kenneth Klutts  
Phone: 225-755-1920  
Fax: 225-755-1989  
E-Mail: batonrouge@emsl.com  
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200376-0

**Advance Data Technology Corporation Hsin Chu EMC Laboratory**

No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung  
Tsuen, Chiung Lin Hsiang  
Hsin Chu Hsien 307  
TAIWAN  
Contact: Mr. Harris Lai  
Phone: 886-2-26032180  
Fax: 886-2-26022943  
E-Mail: harris@mail.adt.com.tw  
URL: www.adt.com.tw

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emission Test Methods:**

- |           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

NVLAP LAB CODE 200378-0

**TECO Electric & Machinery Co., Ltd.**

11 An Tung Road, Chung Li Ind. District  
Taoyuan  
TAIWAN  
Contact: Mr. Arnold Wu  
Phone: 02-256-21111  
Fax: 02-252-18341  
E-Mail: wu.arnold@teco.com.tw

**Efficiency of Electric Motors**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

24/M01 IEEE 112, Method B

NVLAP LAB CODE 200382-0

**Boeing - St. Louis Electromagnetic Compatibility Laboratory**

Mail Code S1069635  
P.O. Box 516  
St. Louis, MO 63166-0516  
Contact: Mr. Randy R. Vollmer  
Phone: 314-233-7798  
Fax: 314-233-7451  
E-Mail: randy.r.vollmer@boeing.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**MIL-STD-462 : Conducted Emissions:**

- |        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |

**MIL-STD-462 : Conducted Susceptibility:**

- |        |                                    |
|--------|------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01            |
| 12/B02 | MIL-STD-462 Method CS02            |
| 12/B05 | MIL-STD-462 Method CS06            |
| 12/B07 | MIL-STD-462 Method CS09            |
| 12/B08 | MIL-STD-462 Method CS10            |
| 12/B09 | MIL-STD-462 Method CS11            |
| 12/B10 | MIL-STD-462 Method CS12            |
| 12/B11 | MIL-STD-462 Method CS13            |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |

**MIL-STD-462 : Radiated Emissions:**

- |        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |



**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued****MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                       |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                       |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)                                                    |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06                                                                                                       |
| 12/E08 | MIL-STD-462 Version D Method RS101                                                                                            |
| 12/E09 | MIL-STD-462 Version D Method RS103                                                                                            |

**NVLAP LAB CODE 200383-0****NCR Corp. San Diego EMC Lab**

17095 Via del Campo  
San Diego, CA 92127-1711  
Contact: Mr. Paul Rostek  
Phone: 858-485-2860  
Fax: 858-485-3788  
E-Mail: paul.rostek@ncr.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200394-0****Acos Villares SA - Chemical Laboratory**

Rodovia Luiz Dumont Villares km 02  
Pindamonhangaba SP 12420-000  
BRAZIL  
Contact: Mr. Kiyoshi Miyada  
Phone: 55 12 240-8450  
Fax: 55 12 240-8378  
E-Mail: kiyoshi@villares.com.br

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Chemical Analysis**

*Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*

|        |            |
|--------|------------|
| FA/455 | ASTM E1019 |
|--------|------------|

*Optical emission spectrochemical analysis*

|        |           |
|--------|-----------|
| FA/457 | ASTM E415 |
|--------|-----------|

*X-ray fluorescence (XRF) spectrochemical analysis*

|        |            |
|--------|------------|
| FA/463 | ASTM E1085 |
|--------|------------|

**NVLAP LAB CODE 200398-0****Sony Kohda EMC Test Laboratory**

1, Aza-Suzumegairi Ohaza-Sakazaki  
Kohta-cho  
Nukata-gun Aichi 444-0194  
JAPAN  
Contact: Mr. Katsuyoshi Fukui  
Phone: 81-564-62-8948  
Fax: 81-564-62-2478  
E-Mail: kfukui@skd.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**Emissions Test Methods:**

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |

**NVLAP LAB CODE 200399-0****EMSL Analytical Inc. Bulk And Airborne****Asbestos Fiber Analysis**

706 North Aberdeen, Suite 1A  
Chicago, IL 60622  
Contact: Mr. J. Craig Nixon  
Phone: 312-733-0896  
Fax: 312-733-0590

URL: <http://www.emsl.com>

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200402-0**

**Interface Testing Laboratory**

1603 Executive Drive, P.O. Box 1503

LaGrange, GA 30240-1503

Contact: Ms. Toni Brown

Phone: 706-812-6152

Fax: 706-884-8669

E-Mail: [toni.brown@us.interfaceinc.com](mailto:toni.brown@us.interfaceinc.com)

**Carpet and Carpet Cushion**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Tests Applicable to Carpet and Carpet Cushion**

03/T04 16 CFR Part 1630 (FF-1-70)

**Tests Applicable to Carpets**

03/G04 AATCC 165

03/G09 ASTM D1335

03/G10 ASTM D3936

03/G12 ASTM E648

03/G13 ASTM E662

**NVLAP LAB CODE 200404-0**

**ORIX Rentec EMC Center; Electromagnetic Compatibility**

3130, Susugaya, Kiyokawa-Mura

Aiko-Gun, Kanagawa 243-0112

JAPAN

Contact: Mr. Kazushige Nagae

Phone: 81-462-88-2971

Fax: 81-462-88-2961

E-Mail: [k-nagae@rentec.orix.co.jp](mailto:k-nagae@rentec.orix.co.jp)

URL: <http://www.orixrentec.co.jp/emc/>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200407-0**

**Shanghai Testing & Inspection Institute for Electrical Equipment**

505 Wu Ning Road

Shanghai 200063

CHINA

Contact: Mr. Chen Weihua

Phone: 86-21-62577704

Fax: 86-21-62577704

**Efficiency of Electric Motors**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

24/M01 IEEE 112, Method B

**NVLAP LAB CODE 200409-0**

**Philips Testing Service**

One Philips Drive, P.O. Box 14810

Knoxville, TN 37914-1810

Contact: Mr. Fred A. Fisher

Phone: 865-521-4720

Fax: 865-521-4786

E-Mail: [fred.fisher@philips.com](mailto:fred.fisher@philips.com)

URL: <http://www.philipstesting.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

12/T51 AS/NZS 3548

**NVLAP LAB CODE 200411-0**

**Piolax Inc.**

14-2 Matsuyama-cho

Mooka-shi Tochigi-ken 321-4346

JAPAN

Contact: Mr. Shigenobu Ito

Phone: 81-285-82-4651

Fax: 81-285-84-2884

E-Mail: [shibata@ypat.gr.jp](mailto:shibata@ypat.gr.jp)

**Fasteners & Metals**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code Designation*

**Dimensional Inspection**

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FB/1146 JIS B7507  
FB/1147 JIS B7502  
FB/1148 JIS B7524

*Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*

FA/595 JIS H8504

*Measurement of fastener coating thickness - dimensional change method*

FB/1145 JIS H8501

*Measurement of fastener coating thickness - eddy-current method*

FA/618 JIS H8501

*Rockwell hardness of fasteners*

FA/572 JIS Z2245

*Salt spray testing of fasteners*

FA/569 JIS Z2371

*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*

FA/571 JIS Z2244

**NVLAP LAB CODE 200413-0**

**JMR Compliance Engineering**

20400 Plummer Street  
Chatsworth, CA 91311  
Contact: Mr. Leon Kogan  
Phone: 818-739-1122  
Fax: 818-993-9173  
E-Mail: leonk@jmr.com  
URL: http://www.jmr.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

*Emissions Test Methods:*

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
|----------|-------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|        |                                               |
|--------|-----------------------------------------------|
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
|--------|-----------------------------------------------|

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
|---------|-----------------------------------------------------|

|         |                    |
|---------|--------------------|
| 12/F01b | Radiated Emissions |
|---------|--------------------|

|        |             |
|--------|-------------|
| 12/T51 | AS/NZS 3548 |
|--------|-------------|

**NVLAP LAB CODE 200415-0**

**INEEL Materials Testing Lab CFA 602**

BBWI CFA602 MS 4136  
P.O. Box 1625  
Idaho Falls, ID 83415-4136  
Contact: Mr. H. Craig Bean  
Phone: 208-526-9941  
Fax: 208-526-6673  
E-Mail: xhb@incl.gov

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

*Aggregates*

|        |           |
|--------|-----------|
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A44 | ASTM C566 |

*Concrete*

|        |                              |
|--------|------------------------------|
| 02/A01 | ASTM C39                     |
| 02/A02 | ASTM C617                    |
| 02/A41 | ASTM C192                    |
| 02/A43 | ASTM C1064                   |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |

*Soil and Rock*

|        |            |
|--------|------------|
| 02/L02 | ASTM D422  |
| 02/L04 | ASTM D698  |
| 02/L05 | ASTM D854  |
| 02/L06 | ASTM D1140 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L20 | ASTM D4318 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |

*Standard Practices*

|        |           |
|--------|-----------|
| 02/A38 | ASTM E329 |
|--------|-----------|

*Steel Materials*

|        |                          |
|--------|--------------------------|
| 02/S01 | ASTM A370 (Sec. 5-13)/E8 |
|--------|--------------------------|

**NVLAP LAB CODE 200416-0**

**COACT Inc. CAFE Laboratory**

9140 Guilford Road, Suite L  
Columbia, MD 21046  
Contact: Mr. James McGeHee  
Phone: 301-498-0150  
Fax: 301-498-0855  
E-Mail: jom@coact.com  
URL: http://www.coact.com

**Common Criteria Testing**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code | Designation |
|------|-------------|
|------|-------------|

|        |                                                                                                                              |
|--------|------------------------------------------------------------------------------------------------------------------------------|
| 26/A01 | ISO/IEC FDIS 15408: Common Criteria for Info. Tech. Security Evaluation; CEM-97/017: Common Evaluation Methodology for Info. |
|--------|------------------------------------------------------------------------------------------------------------------------------|



# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

|         |                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------|
|         | Tech. Security, Part 1; CEM-99/008: Common Methodology for Info. Tech. Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation                                                                 |
| 26/A01b | ASE: Security Target evaluation                                                                    |
| 26/A01c | EAL1: Evaluation assurance level 1                                                                 |
| 26/A01d | EAL2: Evaluation assurance level 2                                                                 |
| 26/A01e | EAL3: Evaluation assurance level 3                                                                 |
| 26/A01f | EAL4: Evaluation assurance level 4                                                                 |

## Cryptographic Module Testing

Accreditation Valid Through: December 31, 2001

### NVLAP

| Code    | Designation                                                                                                                                                                                                                  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17/C01  | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3.                                                                                         |
| 17/C02  | FIPS-Approved Cryptographic Algorithms (see < <a href="http://csrc.nist.gov/cryptval">http://csrc.nist.gov/cryptval</a> >) as required in FIPS PUB 140-1.                                                                    |

### NVLAP LAB CODE 200418-0

#### IBM Endicott EMC Lab

P.O. Box 5825, Union Station  
Endicott, NY 13763-5825  
Contact: Mr. Lynn Price  
Phone: 607-741-8970  
Fax: 607-741-8988  
E-Mail: [pricela@us.ibm.com](mailto:pricela@us.ibm.com)

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### Emissions Test Methods:

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |

|         |                    |
|---------|--------------------|
| 12/F01b | Radiated Emissions |
| 12/T51  | AS/NZS 3548        |

### NVLAP LAB CODE 200422-0

#### Dayton T. Brown, Inc.

Church Street  
Bohemia, NY 11716  
Contact: Mr. Charles Gortakowski  
Phone: 631-244-6315  
Fax: 631-589-4046  
E-Mail: [c.gortakowski@daytonbrown.com](mailto:c.gortakowski@daytonbrown.com)  
URL: <http://www.daytonbrown.com>

#### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

#### MIL-STD-462 : Conducted Emissions:

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A04 | MIL-STD-462 Method CE02            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A08 | MIL-STD-462 Method CE04            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

#### MIL-STD-462 : Conducted Susceptibility:

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B06 | MIL-STD-462 Method CS07                |
| 12/B07 | MIL-STD-462 Method CS09                |
| 12/B08 | MIL-STD-462 Method CS10                |
| 12/B09 | MIL-STD-462 Method CS11                |
| 12/B10 | MIL-STD-462 Method CS12                |
| 12/B11 | MIL-STD-462 Method CS13                |
| 12/B12 | MIL-STD-462 Version D Method CS101     |
| 12/B13 | MIL-STD-462 Version D Method CS103     |
| 12/B14 | MIL-STD-462 Version D Method CS104     |
| 12/B15 | MIL-STD-462 Version D Method CS105     |
| 12/B16 | MIL-STD-462 Version D Method CS109     |
| 12/B19 | MIL-STD-462 Version D Method CS116     |

#### MIL-STD-462 : Radiated Emissions:

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D03 | MIL-STD-462 Method RE03            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

#### MIL-STD-462 : Radiated Susceptibility:

|        |                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                                                                       |
| 12/E02 | MIL-STD-462 Method RS02                                                                                                       |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)                                                    |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |



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**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

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12/E05 MIL-STD-462 Method RS05  
12/E07 MIL-STD-462 Method RS06  
12/E08 MIL-STD-462 Version D Method RS101  
12/E09 MIL-STD-462 Version D Method RS103  
12/E10 MIL-STD-462 Version D Method RS105

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**NVLAP LAB CODE 200424-0****Environmental Science Services, Inc.**

12875 East Locke Road  
Lockeford, CA 95237  
Contact: Mr. Mike Ostlund  
Phone: 209-333-6157  
Fax: 209-333-0492  
E-Mail: envss1@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

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**NVLAP LAB CODE 200425-0****BAE Systems**

95 Canal Street, P.O. Box 868  
Nashua, NH 03061-0868  
Contact: Mr. James A. Cirillo  
Phone: 603-885-2671  
Fax: 603-885-2919  
E-Mail: james.a.cirillo@lmco.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

***MIL-STD-462 : Conducted Emissions:***

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

***MIL-STD-462 : Conducted Susceptibility:***

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B07 | MIL-STD-462 Method CS09                |
| 12/B09 | MIL-STD-462 Method CS11                |
| 12/B12 | MIL-STD-462 Version D Method CS101     |
| 12/B13 | MIL-STD-462 Version D Method CS103     |
| 12/B14 | MIL-STD-462 Version D Method CS104     |
| 12/B15 | MIL-STD-462 Version D Method CS105     |
| 12/B16 | MIL-STD-462 Version D Method CS109     |
| 12/B17 | MIL-STD-462 Version D Method CS114     |
| 12/B18 | MIL-STD-462 Version D Method CS115     |
| 12/B19 | MIL-STD-462 Version D Method CS116     |

***MIL-STD-462 : Radiated Emissions:***

|        |                                    |
|--------|------------------------------------|
| 12/D01 | MIL-STD-462 Method RE01            |
| 12/D02 | MIL-STD-462 Method RE02            |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |

***MIL-STD-462 : Radiated Susceptibility:***

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 12/E01 | MIL-STD-462 Method RS01                                                    |
| 12/E02 | MIL-STD-462 Method RS02                                                    |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06                                                    |
| 12/E08 | MIL-STD-462 Version D Method RS101                                         |
| 12/E09 | MIL-STD-462 Version D Method RS103                                         |

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**NVLAP LAB CODE 200426-0****Computer Sciences Corporation**

7471 Candlewood Road  
Hanover, MD 21076  
Contact: Mr. James Fink  
Phone: 410-691-4020  
Fax: 410-691-4097  
E-Mail: kcaplan@csc.com  
URL: <http://www.csc.com>

**Common Criteria Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i>                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26/A01      | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a     | APE: Protection Profile evaluation                                                                                                                                                           |
| 26/A01b     | ASE: Security Target evaluation                                                                                                                                                              |
| 26/A01c     | EAL1: Evaluation assurance level 1                                                                                                                                                           |
| 26/A01d     | EAL2: Evaluation assurance level 2                                                                                                                                                           |
| 26/A01e     | EAL3: Evaluation assurance level 3                                                                                                                                                           |
| 26/A01f     | EAL4: Evaluation assurance level 4                                                                                                                                                           |

---

**NVLAP LAB CODE 200427-0****SAIC Common Criteria Testing Laboratory**

Ctr. for Information Security Tech. SAIC  
7125 Columbia Gateway Drive, Suite 300  
Columbia, MD 21046  
Contact: Mr. Robert L. Williamson  
Phone: 410-953-6819  
Fax: 410-953-6930  
E-Mail: [robert.l.williamson.jr@cpmx.saic.com](mailto:robert.l.williamson.jr@cpmx.saic.com)

**Common Criteria Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i>                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26/A01      | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a     | APE: Protection Profile evaluation                                                                                                                                                           |
| 26/A01b     | ASE: Security Target evaluation                                                                                                                                                              |
| 26/A01c     | EAL1: Evaluation assurance level 1                                                                                                                                                           |
| 26/A01d     | EAL2: Evaluation assurance level 2                                                                                                                                                           |

26/A01c EAL3: Evaluation assurance level 3  
26/A01f EAL4: Evaluation assurance level 4

NVLAP LAB CODE 200428-0

**TUViT, IT Security Laboratory**

8716 N. Mo-Pac Expressway, Suite 220  
Austin, TX 78759-8368  
Contact: Mr. Roland Mueller  
Phone: 512-795-0494  
Fax: 512-795-0495  
E-Mail: roland@tuvit.net  
URL: http://www.tuvit.net

**Common Criteria Testing**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i>                                                                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/A01      | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 12/A01a     | APE: Protection Profile evaluation                                                                                                                                                           |
| 12/A01b     | ASE: Security Target evaluation                                                                                                                                                              |
| 12/A01c     | EAL1: Evaluation assurance level 1                                                                                                                                                           |
| 12/A01d     | EAL2: Evaluation assurance level 2                                                                                                                                                           |
| 12/A01e     | EAL3: Evaluation assurance level 3                                                                                                                                                           |
| 12/A01f     | EAL4: Evaluation assurance level 4                                                                                                                                                           |

NVLAP LAB CODE 200430-0

**EMC Automation, a TDK Group Company**

1101 Cypress Creek Road  
Cedar Park, TX 78613  
Contact: Mr. Michael E. Hill  
Phone: 512-258-9478 x135  
Fax: 512-258-0740  
E-Mail: mikehill@emca.com  
URL: http://www.emc-automation.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

NVLAP LAB CODE 200431-0

**Raytheon Electronic Systems, California**

**Engineering EEE Laboratory**

2000 E. El Segundo Blvd.  
P.O. Box 902, Bldg. E1, M/S J131  
El Segundo, CA 90245-0902  
Contact: Mr. Gino G. Bosdachin  
Phone: 310-647-4575  
Fax: 310-647-4582  
E-Mail: gbosdachin@west.raytheon.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

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| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**MIL-STD-462 : Conducted Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/A01 | MIL-STD-462 Method CE01            |
| 12/A06 | MIL-STD-462 Method CE03            |
| 12/A10 | MIL-STD-462 Method CE06            |
| 12/A12 | MIL-STD-462 Method CE07            |
| 12/A14 | MIL-STD-462 Version D Method CE102 |

**MIL-STD-462 : Conducted Susceptibility:**

|        |                                        |
|--------|----------------------------------------|
| 12/B01 | MIL-STD-462 Method CS01                |
| 12/B02 | MIL-STD-462 Method CS02                |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06                |
| 12/B09 | MIL-STD-462 Method CS11                |
| 12/B12 | MIL-STD-462 Version D Method CS101     |
| 12/B17 | MIL-STD-462 Version D Method CS114     |
| 12/B18 | MIL-STD-462 Version D Method CS115     |
| 12/B19 | MIL-STD-462 Version D Method CS116     |

**MIL-STD-462 : Radiated Emissions:**

|        |                                    |
|--------|------------------------------------|
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

**MIL-STD-462 : Radiated Susceptibility:**

|        |                                                                            |
|--------|----------------------------------------------------------------------------|
| 12/E02 | MIL-STD-462 Method RS02                                                    |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06                                                    |
| 12/E09 | MIL-STD-462 Version D Method RS103                                         |

NVLAP LAB CODE 200432-0

**Sony Kisarazu EMC Test Laboratory**

8-4 Shiomi  
Kisarazu Chiba 292-0834  
JAPAN  
Contact: Mr. Akihiro Arihara  
Phone: 814-383-74916  
Fax: 814-383-75595  
E-Mail: akiehan@skz.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|          |                                          |
|----------|------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of |
|----------|------------------------------------------|

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | measurement of radio disturbance characteristics of information technology equipment                                                                                   |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |

NVLAP LAB CODE 200433-0

**NEC Kofu, Ltd., EMC Center**

1088-3 Ohtsu-cho, Kofu City  
Yamanashi 400-0055  
JAPAN  
Contact: Mr. Shinji Mine  
Phone: 81-55-243-4158  
Fax: 81-55-243-4229  
E-Mail: mine@comc.kofu.nec.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

NVLAP LAB CODE 200434-0

**Minolta Co., Ltd. Toyokawa EMC Lab**

2, Higashi-Akatsuchi, Yawata-Cho  
Toyokawa, Aichi  
JAPAN  
Contact: Mr. Yasuhiro Kotera  
Phone: 81-533-88-2118  
Fax: 81-533-88-5368  
E-Mail: koteraya@ngw.minolta.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

NVLAP LAB CODE 200435-0

**IBM Poughkeepsie EMC Laboratory**

M/S P355  
422 South Road  
Poughkeepsie, NY 12601-5400  
Contact: Mr. William F. McCarthy  
Phone: 914-433-1634  
Fax: 914-435-2062  
E-Mail: wfmcc@us.ibm.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |



12/F01b Radiated Emissions

**NVLAP LAB CODE 200436-0**

**Global Testing**

1433 E. Borchard Avenue  
Santa Ana, CA 92705-4414  
Contact: Kumar Chaklashiya  
Phone: 714-550-6004  
Fax: 714-550-9424  
E-Mail: kumar@global-testing.com  
URL: http://www.global-testing.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Telecommunications Test Methods:**

|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CS03 | CS-03                                                                                                                                                                                                                                      |
| 12/T01  | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital                                                                                                                                          |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards                                                                                                                                                                                      |

**NVLAP LAB CODE 200438-0**

**Benesol Corp.**

14-15, Miyashimo, 3-Chome  
Sagamihara-shi, Kanagawa  
JAPAN  
Contact: Mr. Yukio Yamamoto  
Phone: 042-772-7842  
Fax: 042-772-7843

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|         |                                                     |
|---------|-----------------------------------------------------|
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital Devices       |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions                                  |

**NVLAP LAB CODE 200439-0**

**Sony Ikegami EMC Site**

6-7-35, Kitashinagawa  
Shinagawa, Tokyo, 141-0001  
JAPAN  
Contact: Mr. Makoto Suzuki  
Phone: 81-3-5795-7152  
Fax: 81-3-5795-5849  
E-Mail: MakotoA.suzuki@jp.sony.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |

**NVLAP LAB CODE 200441-0**

**A-Pex International Co., Ltd. Yamakita Laboratory**

907 Kawanishi, Yamakita-machi,  
Ashigarakami-gun 258-0124  
JAPAN  
Contact: Mr. Tetsuya Hashimoto  
Phone: 81-596-24-6717  
Fax: 81-596-24-8020  
E-Mail: hasimt@a-pex.co.jp  
URL: http://www.a-pex.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |
| 12/T51   | AS/NZS 3548                                                                                                                   |



NVLAP LAB CODE 200442-0

**KSL**

505-1 S. Hwy. 49, #101  
Jackson, CA 95642  
Contact: Mr. Kevin Smith  
Phone: 209-286-1822  
Fax: 209-286-0706  
E-Mail: kevinksl@earthlink.net

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: September 30, 2001

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200444-0

**AMEC Earth & Environmental, Inc., PLM LAB**

3232 West Virginia  
Phoenix, AZ 85009-1502  
Contact: Mr. Paul W. Barbera  
Phone: 602-272-6848  
Fax: 602-272-7239  
E-Mail: paul.barbera@amec.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200445-0

**Met Laboratories Incorporated**

33439 Western Avenue  
Union City, CA 94587  
Contact: Mr. Robert Frier  
Phone: 510-489-6300  
Fax: 510-489-6372  
E-Mail: rfrier@metlabs.com  
URL: <http://www.metlabs.com>

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz

to 30 MHz

- 12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

**Telecommunications Test Methods:**

- 12/CS03 CS-03
- 12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
- 12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit; 68.306 Hazardous voltage limit; 68.308 Signal power limit; 68.310 Longitudinal balance limit; 68.312 On-hook impedance limit; 68.314 Billing protection
- 12/T01c 68.302 Environmental simulation (Par. a,b)

NVLAP LAB CODE 200447-0

**Samsung Electronics EMC Laboratory**

416 Maetan Dong, Paldal Gu  
Suwon, Kyungki Do  
KOREA  
Contact: Mr. Taek J. Shin  
Phone: 82-331-200-2140  
Fax: 82-331-200-2138

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

*NVLAP*

*Code Designation*

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions

NVLAP LAB CODE 200448-0

**Family Analytical Laboratory Services, Inc.**

3650 Chestnut Place  
Denver, CO 80216  
Contact: Mr. Timothy J. Bergquist  
Phone: 303-296-6022  
Fax: 303-292-1451  
E-Mail: FamilyEnviro@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200450-0**
**Strom Environmental**

7100 N. Broadway, Bldg. 6, Ste. S  
Denver, CO 80221  
Contact: Mr. Lars Malmstrom  
Phone: 303-487-4533  
Fax: 303-487-4534  
E-Mail: larso@uswest.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200451-0**
**MacLean Maynard Laboratory Services**

50855 E. Russell Schmidt Blvd.  
Chesterfield Township, MI 48051  
Contact: Mr. Dick Catherwood  
Phone: 810-949-0471  
Fax: 810-949-7940  
E-Mail: dickc@maynard.macleam-fogg.com

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Dimensional Inspection**

*Dimensions of fasteners - hexagon and double hexagon  
(12 point) and spline sockets*

FB/1140 ANSI B18.2.1

*Dimensions of general purpose fasteners and  
high-volume machine assembly fasteners*

FA/403 ANSI/ASME B18.18.1M

FA/404 ANSI/ASME B18.18.2M

FA/665 ISO 4759-1

*Dimensions of special purpose fasteners and fasteners for  
highly specialized engineered ap*

FA/405 ANSI/ASME B18.18.3M

FA/406 ANSI/ASME B18.18.4M

*External thread parameters - ISO*

FA/390 ISO 1502

*External thread parameters - system 21*

FA/940 ANSI/ASME B1.2

FB/1173 ANSI/ASME B1.1

FB/1175 ANSI/ASME B1.12

*Internal thread parameters - ISO*

FA/402 ISO 1502

*Internal thread parameters - system 21*

FA/391 ANSI/ASME B1.3M

FA/942 ANSI/ASME B1.2

FB/1172 ANSI/ASME B1.1

FB/1174 ANSI/ASME B1.12

**Mechanical and Physical Testing and Inspection**

*Axial tensile strength of full-size threaded fasteners*

FA/265 ASTM A370 Sec. A3.2.1.4

FA/266 ASTM F606 Sec. 3.4.1-3.4.3

FA/267 ASTM F606M Sec. 3.4.1-3.4.3

FA/270 ISO 898-1 Sec. 8.2

FA/271 MIL-STD-1312-8

FA/273 SAE J429

FA/530 ASTM E8

FA/578 SAE J1216 Sec. 3.5

FB/1089 SAE J995

*Prevailing torque*

FA/216 ANSI B18.16.1M

FA/217 IFI-100/107

*Rockwell hardness of fasteners*

FA/197 ASTM E18

FA/200 ISO 6508

FA/202 SAE J417

*Tension testing of machined specimens from externally  
threaded fasteners*

FA/282 ISO 898-1

FA/283 SAE J429

*Torque-tension of full-size threaded fasteners*

FA/305 ANSI B18.16.2M

FA/306 IFI-101

FA/308 SAE J174

*Wedge tensile strength of full-size threaded fasteners*

FA/290 ASTM F606 Sec. 3.5

FA/291 ASTM F606M Sec. 3.5

FA/294 ISO 898-1 Sec. 8.5

FA/295 MIL-STD-1312-8

FA/468 SAE J429

FA/469 SAE J1216 Sec. 3.6

FA/510 ASTM E8

*Yield strength of full-size externally threaded fasteners*

FA/298 ASTM F606 Sec. 3.2.4

FA/299 ASTM A370 Sec. A3.2.1.3(a)

FA/300 ASTM F606M Sec. 3.2.4

FA/885 ISO 6892

FB/1171 SAE J429

**Metallography**

*Decarburization and case depth measurement in  
fasteners*

FA/323 ASTM E1077

FA/329 SAE J419

FA/330 SAE J423

FA/561 ASTM E3

FA/562 ASTM G79

FA/758 SAE J121M

FB/1177 SAE J121M

*Macroscopic examination of fasteners by etching*

FA/511 ASTM E340

*Microscopic examination of fasteners by etching*

FA/512 ASTM E407

FB/1178 SAE J422

FB/1179 ASTM E45

*Surface discontinuities of externally threaded fasteners*

FA/357 ASTM F788/788M

FA/359 ISO 6157-1

FA/361 SAE J123

FA/362 SAE J1061

*Surface discontinuities of internally threaded fasteners*

FA/727 ISO 6157-2

FA/865 ASTM F812/F812M

FB/1176 IFI 533

**Nondestructive Inspection**

**Liquid penetrant inspection of fasteners**

FA/371 MIL-STD-6866

**NVLAP LAB CODE 200452-0**

**CA Laboratories, L.L.C.**

11800 Industriplex, Suite #5

Baton Rouge, LA 70809

Contact: Mr. Arthur Hernandez

Phone: 225-751-5632

Fax: 225-751-5634

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200453-0**

**PCI Industries Acoustical Testing Laboratories**

2824 N. Sylvania Avenue

Fort Worth, TX 76111

Contact: Mr. Mike Beaver

Phone: 817-831-7038

Fax: 817-831-3110

E-Mail: mkebeaver@aol.com

**Acoustical Testing Services**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

08/P10 ANSI S12.31

08/P36 ASTM E477

**NVLAP LAB CODE 200455-0**

**Yamaha EMC Center**

200 Minazawa

Tenryu-shi, Shizuoka-ken 431-3422

JAPAN

Contact: Mr. Yoshimi Hirose

Phone: 81-53-460-2376

Fax: 81-53-460-2379

E-Mail: hiros@caucus.yamaha.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/CIS22b CNS 13438:1997: Limits and Methods of

Measurement of Radio Interference

Characteristics of Information Technology

Equipment

12/F01 FCC Method - 47 CFR Part 15 - Digital

Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

**NVLAP LAB CODE 200456-0**

**Sony Bonson EMC Test Laboratory**

1300 Tsukakoshi, Sakado-shi

Saitama-ken 350-0209

JAPAN

Contact: Mr. Kazuaki Suda

Phone: 81-492-89-2261

Fax: 81-492-89-2275

E-Mail: suda@bonson.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

**NVLAP LAB CODE 200457-0**

**Sharp Nara EMC Center, EMI Measurement for ITE**

492 Minosho-cho

Yamatokooryama-shi Nara 639-1186

JAPAN

Contact: Mr. Katsuhiko Fukushima

Phone: 81-743-55-5082

Fax: 81-743-55-4440

E-Mail: fukushi@info.nara.sharp.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

**NVLAP**

Code Designation

**Emissions Test Methods:**

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz



# INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued

to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

## NVLAP LAB CODE 200458-0

### Interocean EMC Technology Corp.

No. 5-2, Lin 1, Tin-Fu Tsun, Lin-Kou  
Hsiang  
Taipei County 24443  
TAIWAN  
Contact: Mr. Mike Huang  
Phone: 886-2-26006861  
Fax: 886-2-26006859  
E-Mail: ietc@ms43.hinet.net

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Emissions Test Methods:

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment  
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.  
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices  
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz  
12/F01b Radiated Emissions  
12/T51 AS/NZS 3548

## NVLAP LAB CODE 200460-0

### IAPMO Testing and Services, L.L.C.

20001 E. Walnut Drive South  
Walnut, CA 91789-2825  
Contact: Mr. Ken Wijaya  
Phone: 909-595-8449 x141  
Fax: 909-595-8819  
E-Mail: kenwijaya@iapmo.org

### Commercial Products Testing

Accreditation Valid Through: March 31, 2001

#### NVLAP

Code Designation

#### Plumbing

19/F01 ASME A112.18.1M (Sec. 5.2)  
19/F02 ASME A112.18.1M (Sec. 5.14)  
19/F03 ASME A112.18.1M (Sec. 6.2)  
19/F04 ASME A112.18.1M (Sec. 6.4)

19/F05 ASME A112.18.1M (Sec. 6.5)  
19/F06 ASME A112.18.1M (Sec. 6.6)  
19/F07 ASME A112.18.1M (Sec. 6.7)  
19/F08 ASME A112.18.1M (Sec. 6.8)  
19/F09 ASME A112.18.1M (Sec. 5.13)  
19/F10 ASME A112.18.1M (Sec. 6.3)  
19/M01 ANSI/CABO A117.1 (Sec. 4.24)  
19/M02 ASME/ANSI A112.19.7M (Sec. 5, 7)  
19/M03 ASME/ANSI A112.19.8M (Sec. 4, 5)  
19/M04 ASTM F446  
19/P01 ANSI Z124.1 (Sec. 4, 5, 6)  
19/P02 ANSI Z124.2 (Sec. 4, 5, 6)  
19/P03 ANSI Z124.3 (Sec. 4, 5, 6)  
19/P04 ANSI Z124.4 (Sec. 4, 5)  
19/P05 ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1)  
19/P06 ANSI/IAPMO Z124.6 (Sec. 4, 5, 6)  
19/P07 ANSI/IAPMO Z124.8 (Sec. 4, 5)  
19/V01 ASME A112.19.2M (Sec. 7.1)  
19/V02 ASME A112.19.2M (Sec. 7.2)  
19/V03 ASME A112.19.2M (Sec. 7.3)  
19/V04 ASME A112.19.2M (Sec. 7.4)  
19/V05 ASME A112.19.2M (Sec. 7.5)  
19/V06 ASME A112.19.2M (Sec. 7.7)  
19/W01 ASME A112.19.6 (Sec. 7.1.2)  
19/W02 ASME A112.19.6 (Sec. 7.1.3)  
19/W03 ASME A112.19.6 (Sec. 7.1.4)  
19/W04 ASME A112.19.6 (Sec. 7.1.5)  
19/W05 ASME A112.19.6 (Sec. 7.1.6)  
19/W06 ASME A112.19.6 (Sec. 7.1.7)  
19/W07 ASME A112.19.6 (Sec. 7.1.8)  
19/W08 ASME A112.19.6 (Sec. 7.1.9)

## NVLAP LAB CODE 200463-0

### McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory

200 East Broadway Avenue, Building 6  
Westerville, OH 43081  
Contact: Mr. John B. Gierzak  
Phone: 614-882-5455 x123  
Fax: 614-882-2090  
E-Mail: mcgillairfloweng@compuserve.com

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

#### NVLAP

Code Designation

08/P36 ASTM E477

## NVLAP LAB CODE 200467-0

### Holmes Environmental, Inc.

1600 East Little Creek Road, Ste. 308  
Norfolk, VA 23518-4136  
Contact: Ms. Ethel H. Holmes  
Phone: 757-587-1164  
Fax: 757-587-1352



**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200472-0**

**Olympus EMC Laboratory**

2951 Ishkawa-cho Hachioji  
Tokyo 192-8507  
JAPAN  
Contact: Mr. Kiyoshi Mori  
Phone: 81-426-42-2167  
Fax: 81-426-42-2017  
E-Mail: ki\_mori@ot.olympus.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| Code      | Designation                                                                                                                   |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment   |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b   | Radiated Emissions                                                                                                            |
| 12/T51    | AS/NZS 3548                                                                                                                   |

**Emissions Test Methods:**

**NVLAP LAB CODE 200473-0**

**The Saul Corporation**

888 W. Sam Houston Parkway S., Suite 288  
P.O. Box 941727  
Houston, TX 77094-8727  
Contact: Mr. Brett S. Colbert  
Phone: 832-252-7640  
Fax: 832-252-7641  
E-Mail: hal2000@ev1.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200474-0**

**AST International Environmental Consultants Inc.**

3705 South Cordoba Street  
Spring Valley, CA 91977-1819  
Contact: Mr. Jeff Krogstad  
Phone: 619-660-2838  
Fax: 619-660-2845  
E-Mail: ASTInt@aol.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200475-0**

**Howard Leight Acoustical Testing Laboratory**

7828 Waterville Road  
San Diego, CA 92154  
Contact: Mr. Vernon D. Larson  
Phone: 619-671-1357  
Fax: 619-661-8393  
E-Mail: vlarson@howardleight.com

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| Code   | Designation                  |
|--------|------------------------------|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6                   |

**NVLAP LAB CODE 200476-0**

**Teco Industry (Malaysia) SDN. BHD.**

2600 Jalan Perusahaan Baru  
Kawasan Perindustrian Prai 13600 Prai  
Penang  
MALAYSIA  
Contact: Mr. Lim Boon Pin  
Phone: 60-04-3909908  
Fax: 60-04-3909901

**Efficiency of Electric Motors**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| Code   | Designation        |
|--------|--------------------|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200477-0**

**Advantest Analysis Labroatory Ltd. EMC Center**

336-1 Ohwa Meiwa-Machi, Ohra-gun  
Gunma 370-0718  
JAPAN  
Contact: Mr. Shinichi Kouya  
Phone: 81-276-70-3300  
Fax: 81-276-70-3420  
E-Mail: kouya@ais.advantest.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*

| Code      | Designation                                                                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of                                                                                                                                  |

**Emissions Test Methods:**

|         |                                           |
|---------|-------------------------------------------|
|         | Measurement of Radio Interference         |
|         | Characteristics of Information Technology |
|         | Equipment                                 |
| 12/F01  | FCC Method - 47 CFR Part 15 - Digital     |
|         | Devices                                   |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz |
|         | to 30 MHz                                 |
| 12/F01b | Radiated Emissions                        |
| 12/T51  | AS/NZS 3548                               |

NVLAP LAB CODE 200478-0

**Canon D5 RF Anechoic Chamber; FCC Part 15;  
CISPR 22/AS/NZS 3548**

7-5-1 Hakusan Toride  
Ibaraki 302-8501  
JAPAN

Contact: Mr. Keiji Tsukamoto  
Phone: 81-45-323-6855  
Fax: 81-45-323-6857  
E-Mail: todct@bl.mntr.or.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01   | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                 |
| 12/F01a  | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                           |
| 12/F01b  | Radiated Emissions                                                                                                            |

NVLAP LAB CODE 200479-0

**Auditory Systems Laboratory, ISE Department,  
Virginia Tech**

Virginia Tech  
250 New Engineering Building  
Blacksburg, VA 24061  
Contact: Dr. John G. Casali  
Phone: 540-231-9081  
Fax: 540-231-3322  
E-Mail: jcasali@vt.edu

**Acoustical Testing Services**

Accreditation Valid Through: June 30, 2001

*NVLAP*

*Code      Designation*

|        |                              |
|--------|------------------------------|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6                   |

NVLAP LAB CODE 200480-0

**Lighting Research Center Lighting Products**

21 Union Street  
Troy, NY 12180-3352  
Contact: Mr. Conan O'Rourke  
Phone: 518-687-7182  
Fax: 518-687-7120  
E-Mail: orourke@rpi.edu

**Energy Efficient Lighting Products**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Color Measurements**

22/C01 IES LM-58

**Electrical Measurements**

22/E01 IES LM-9

22/E02 IES LM-45

22/E04 IES LM-66

**Photometric Measurements**

22/P01a IES LM-9 (Total Flux)

22/P03a IES LM-45 (Total Flux)

22/P05a IES LM-66 (Total Flux)

NVLAP LAB CODE 200481-0

**EMSL Analytical Inc. Mobile Laboratory**

107 Haddon Avenue  
Westmont, NJ 08108-2799  
Contact: Mr. Robert DeMalo  
Phone: 856-858-4800  
Fax: 856-858-1292  
E-Mail: rdemalo@EMSL.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200482-0

**Syonan Site Testing Laboratory as Conducted &  
Radiated Emissions**

1-1 Koyato, 2-chome, Samukawa-machi  
Koza-gun  
Kanagawa 253-0103  
JAPAN  
Contact: Mr. Yasuji Yamaguchi  
Phone: 81-0467-74-1298  
Fax: 81-0467-74-9358  
E-Mail: yamaguch@toyocom.co.jp

**Electromagnetic Compatibility & Telecommunication**

Accreditation Valid Through: September 30, 2001

*NVLAP*

*Code      Designation*

**Emissions Test Methods:**

|          |                                                                           |
|----------|---------------------------------------------------------------------------|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance |
|----------|---------------------------------------------------------------------------|

**INDEX D. LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE - continued**

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
|           | characteristics of information technology equipment                                                                         |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance                                                   |
|           | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.                                |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

**NVLAP LAB CODE 200483-0****Leeson Electric - Grafton Engineering Laboratory**

2100 Washington Street  
Grafton, WI 53024-9541  
Contact: Mr. Peter F. Hennig  
Phone: 262-377-8810  
Fax: 262-387-5449  
E-Mail: hennigpf@leeson.com

**Efficiency of Electric Motors**

Accreditation Valid Through: September 30, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |                    |
|--------|--------------------|
| 24/M01 | IEEE 112, Method B |
|--------|--------------------|

**NVLAP LAB CODE 200484-0****Best Laboratory**

No. 336, Ba Lian Road, Sec. 1  
Hsi Chih City  
Taipei Hsein  
TAIWAN  
Contact: Mr. Jeff Chiu  
Phone: 886-2-2646-2855  
Fax: 886-2-2646-2870  
E-Mail: jeff@bestlab.com.tw

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                               |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                         |
| 12/F01b   | Radiated Emissions                                                                                                          |
| 12/T51    | AS/NZS 3548                                                                                                                 |

**NVLAP LAB CODE 200488-0****NEC Shizuoka, Ltd. EMC Center**

557-2 Yokooka, Kanaya-cho, Haibara-gun  
Shizuoka-ken 428-0004  
JAPAN  
Contact: Mr. Hidenori Muramatsu  
Phone: 81-547-45-3410  
Fax: 81-537-22-8263  
E-Mail: muramatsu@ced.snec.nec.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

**Emissions Test Methods:**

|           |                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12/CIS22  | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment                                          |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment                                            |
| 12/F01    | FCC Method - 47 CFR Part 15 - Digital Devices                                                                                                                          |
| 12/F01a   | Conducted Emissions, Power Lines, 450 KHz to 30 MHz                                                                                                                    |
| 12/F01b   | Radiated Emissions                                                                                                                                                     |
| 12/T51    | AS/NZS 3548                                                                                                                                                            |

**NVLAP LAB CODE 200490-0****NEC Niigata, Ltd. EMC Group**

7546 Yasuda, Kashiwazaki-City  
Niigata 945-1398  
JAPAN  
Contact: Mr. Kazuo Ogata  
Phone: 81-257-21-1112  
Fax: 81-257-21-1147  
E-Mail: ogata-K@ninee.nec.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**Emissions Test Methods:**

- 12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
- 12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
- 12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- 12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
- 12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
- 12/F01b Radiated Emissions

**NVLAP LAB CODE 200492-0**

**Atlan Laboratories**

1340 Old Chain Bridge Road, Suite 401

McLean, VA 22101

Contact: Mr. Edward D. Morris

Phone: 703-748-4551

Fax: 703-748-4552

E-Mail: emorris@atlanlabs.com

URL: <http://www.atlanlabs.com>

**Cryptographic Module Testing**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

- 17/C01 NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules."
- 17/C01a Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3.
- 17/C01b Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT
- 17/C01c Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT
- 17/C02 FIPS-Approved Cryptographic Algorithms (see <<http://csrc.nist.gov/cryptval>>) as required in FIPS PUB 140-1.

**NVLAP LAB CODE 200503-0**

**IBM Shock and Vibration Laboratory**

MS P932, Dept 575S, Bldg. 416, Rm 10-10

2455 South Road

Poughkeepsie, NY 12601

Contact: Mr. Budy Notohardjono

Phone: 845-435-1047

Fax: 845-432-9807

E-Mail: budy@us.ibm.com

**Commercial Products Testing**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

**Paper and Related Products**

- 09/H08 Method 5007.1; ASTM D5276; TAPPI T802-OM
- 09/H19 Method 5019.1; TAPPI T817-OM/A
- 09/H20 Method 5020.1; TAPPI T817-OM/B,C

**NVLAP LAB CODE 200504-0**

**Litetronics International**

4101W 123 Street

Alsip, IL 60803

Contact: Mr. Sandeep Sood

Phone: 708-389-8000

Fax: 708-371-0627

E-Mail: ssood@litetronics.com

URL: <http://www.litetronics.com>

**Energy Efficient Lighting Products**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

**Electrical Measurements**

22/E02 IES LM-45

**Photometric Measurements**

22/P02a IES LM-20 (Total Flux)

22/P03a IES LM-45 (Total Flux)

**NVLAP LAB CODE 200506-0**

**USEM de Mexico, S.A. de C.V.**

Blvd. Carlos Salinas de G. KM 9.5

Apodaca NL 66600

Mexico

Contact: Mr. Jose Raymundo Leal Lacavex

Phone: 011-528-389-1300

Fax: 011-528-389-1360

E-Mail: Raymundo.Leal@usmotors.com

**Efficiency of Electric Motors**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

24/M01 IEEE 112, Method B



---

**NVLAP LAB CODE 200511-0****Northern Industrial Hygiene, Inc.**

410A SW 153rd Street  
Burien, WA 98166  
Contact: Ms. Crystal Wright  
Phone: 206-988-1746  
Fax: 206-988-1978  
E-Mail: NIHINCLAB@AOL.COM

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001

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**NVLAP LAB CODE 200520-0****BPB America, Inc.**

10301 Ninth Street North  
St. Petersburg, FL 33716-3704  
Contact: Mr. Robert E. Metz  
Phone: 727-563-5118  
Fax: 727-563-5218  
E-Mail: rmetz@celotex.com  
URL: <http://www.celotex.com>

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

*NVLAP*

| <i>Code</i> | <i>Designation</i> |
|-------------|--------------------|
|-------------|--------------------|

|        |             |
|--------|-------------|
| 08/P03 | ASTM C423   |
| 08/P04 | ASTM C522   |
| 08/P06 | ASTM E90    |
| 08/P07 | ASTM E492   |
| 08/P34 | ASTM E1414  |
| 08/P35 | ASTM E1050  |
| 08/P49 | AMA-1-II-67 |



**INDEX**

**E**

**LISTING OF  
CALIBRATION  
LABORATORIES  
BY NVLAP  
LAB CODE**







**NVLAP**<sup>®</sup>

National Institute  
of Standards and Technology

ISO/IEC GUIDE 25:1990  
ANSI/ISO 2540-1:1994  
ISO 9002:1987



DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

National Voluntary  
Laboratory Accreditation Program

Page 1 of 5

## Scope of Accreditation

**CALIBRATION LABORATORIES**

**OAK RIDGE METROLOGY CENTER**

P.O. Box 2009  
Oak Ridge, TN 37831-7670  
W. T. (Bill) McKeethan  
Phone: 423-574-2707 Fax: 423-574-2802  
E-Mail: wmt.ornl.gov  
URL: <http://www.ornl.gov/ornet.mfgqual>

NVLAP LAB CODE 105000-0

**DIMENSIONAL**

NVLAP Code: 20/D03  
Gage Blocks, Steel Only

| Range          | Best Uncertainty ( $\pm y_{95\%}$ )                        | Remarks               |
|----------------|------------------------------------------------------------|-----------------------|
| 0.010 to 0.090 | 2.4 $\mu$ m                                                | Mechanical Comparison |
| 0.01 to 1.000  | 1.8 $\mu$ m                                                | Mechanical Comparison |
| 2.0 to 4.0     | 2 $\mu$ m + 0.8 x 10 <sup>-6</sup> ; L is length in inches | Mechanical Comparison |

NVLAP Code: 20/D05  
Length

| Range      | Best Uncertainty ( $\pm y_{95\%}$ )             | Remarks                                                    |
|------------|-------------------------------------------------|------------------------------------------------------------|
| 0 - 1.35 m | (0.3 + 0.4L) micrometers; L is length in inches | Step and End Gages using M-60 Coordinate Measuring Machine |
| 0 - 1.2 m  | (0.3 + 0.4L) micrometers; L is length in meters | Step and End Gages using M-48 Coordinate Measuring Machine |

March 31, 2001

Effective through

*David F. Alderman*

For the National Institute of Standards and Technology

NVLAP-02S (11-95)



**NVLAP**<sup>®</sup>

National Institute  
of Standards and Technology

ISO/IEC GUIDE 25:1990  
ANSI/ISO 2540-1:1994  
ISO 9002:1987



DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

National Voluntary  
Laboratory Accreditation Program

Page 2 of 5

## Scope of Accreditation

**CALIBRATION LABORATORIES**

**OAK RIDGE METROLOGY CENTER**

NVLAP LAB CODE 105000-0

NVLAP Code: 20/D18  
Gears

| Range           | Best Uncertainty ( $\pm y_{95\%}$ )                 | Remarks       |
|-----------------|-----------------------------------------------------|---------------|
| 600 mm x 800 mm | 0.6 $\mu$ m + 0.45 L $\mu$ m; L is length in meters | CMM (optical) |

NVLAP Code: 20/D18  
Gears

| Range                            | Best Uncertainty ( $\pm y_{95\%}$ ) | Remarks          |
|----------------------------------|-------------------------------------|------------------|
| to 6" Diameter                   | 0.9 $\mu$ m                         | Involute Profile |
| to 6" Diameter and Infinite Lead | 0.8 $\mu$ m                         | Tooth Alignment  |
| to 6" Diameter and 99" Lead      | 0.9 $\mu$ m                         | Tooth Alignment  |
| to 6" Diameter and 32" Lead      | 1.1 $\mu$ m                         | Tooth Alignment  |
| to 6" Diameter and 16" Lead      | 1.2 $\mu$ m                         | Tooth Alignment  |
| to 6" Diameter and 11" Lead      | 1.4 $\mu$ m                         | Tooth Alignment  |
| to 6" Diameter (pin offset)      | 0.7 $\mu$ m                         | Pin Master       |
| to 6" Diameter (pin diameter)    | 0.5 $\mu$ m                         | Pin Master       |
| to 6" Diameter (pin roundness)   | 0.3 $\mu$ m                         | Pin Master       |

March 31, 2001

Effective through

*David F. Alderman*

For the National Institute of Standards and Technology

NVLAP-02S (11-95)

|                                                                                                       |                                                        |                                                                                     |  |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|                    |                                                        |  |  |
| National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |                                                        | Page 3 of 5                                                                         |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/INCSL Z540-1-1994<br>ISO 9002:1987                                      |                                                        | NVLAP LAB CODE 105000-0                                                             |  |
| Scope of Accreditation                                                                                |                                                        |                                                                                     |  |
| CALIBRATION LABORATORIES                                                                              |                                                        |                                                                                     |  |
| OAK RIDGE METROLOGY CENTER                                                                            |                                                        |                                                                                     |  |
| TIME AND FREQUENCY                                                                                    |                                                        |                                                                                     |  |
| NVLAP Code: 20/F01<br>Frequency Dissemination                                                         |                                                        |                                                                                     |  |
| Range                                                                                                 | Best Uncertainty ( $\pm$ ) in $\text{Hz}^{\text{nom}}$ | Remarks                                                                             |  |
| 1 MHz, 5 MHz, 10 MHz                                                                                  | $1.01 \times 10^{-10}$                                 | Comparison using FMS                                                                |  |
| 1 MHz, 5 MHz, 10 MHz                                                                                  | $5.3 \times 10^{-10}$                                  | Comparison                                                                          |  |
| 1 Hz to < 1 MHz                                                                                       | $(1 \times 10^{-10} + 0.1 \text{ Hz})^{\text{nom}}$    | Direct Reading                                                                      |  |
| 1 MHz to 10 MHz                                                                                       | $1 \times 10^{-8} \text{ sec}^2$                       | Direct Reading                                                                      |  |
| > 10 MHz to 1 GHz                                                                                     | $1 \times 10^{-7} \text{ sec}^2$                       | Direct Reading                                                                      |  |
| MECHANICAL                                                                                            |                                                        |                                                                                     |  |
| NVLAP Code: 20/M08<br>Mass                                                                            |                                                        |                                                                                     |  |
| Range                                                                                                 | Best Uncertainty ( $\pm$ ) $\mu\text{g}^{\text{nom}}$  | Remarks                                                                             |  |
| 30 kg                                                                                                 | 95 mg                                                  |                                                                                     |  |
| 20 kg                                                                                                 | 41 mg                                                  |                                                                                     |  |
| 10 kg                                                                                                 | 19.4 mg                                                |                                                                                     |  |
| March 31, 2001                                                                                        |                                                        | David F. Alderman                                                                   |  |
| Effective through                                                                                     |                                                        | For the National Institute of Standards and Technology                              |  |

NVLAP-025 (11-95)

|                                                                                                       |         |                                                                                   |  |
|-------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|--|
|                      |         |  |  |
| National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |         | Page 4 of 5                                                                       |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/INCSL Z540-1-1994<br>ISO 9002:1987                                      |         | NVLAP LAB CODE 105000-0                                                           |  |
| Scope of Accreditation                                                                                |         |                                                                                   |  |
| CALIBRATION LABORATORIES                                                                              |         |                                                                                   |  |
| OAK RIDGE METROLOGY CENTER                                                                            |         |                                                                                   |  |
| 5 kg                                                                                                  | 14.5 mg |                                                                                   |  |
| 2 kg                                                                                                  | 13.0 mg |                                                                                   |  |
| 1 kg                                                                                                  | 1.31 mg |                                                                                   |  |
| 500 g                                                                                                 | 0.66 mg |                                                                                   |  |
| 200 g                                                                                                 | 0.29    |                                                                                   |  |
| 100 g                                                                                                 | 0.136   |                                                                                   |  |
| 50 g                                                                                                  | 0.072   |                                                                                   |  |
| 20 g                                                                                                  | 0.038   |                                                                                   |  |
| 10 g                                                                                                  | 0.029   |                                                                                   |  |
| 5 g                                                                                                   | 0.0083  |                                                                                   |  |
| 2 g                                                                                                   | 0.0052  |                                                                                   |  |
| 1 g                                                                                                   | 0.0052  |                                                                                   |  |
| 500 mg                                                                                                | 0.0040  |                                                                                   |  |
| 200 mg                                                                                                | 0.0037  |                                                                                   |  |
| 100 mg                                                                                                | 0.0036  |                                                                                   |  |
| 50 mg                                                                                                 | 0.0036  |                                                                                   |  |
| 20 mg                                                                                                 | 0.0036  |                                                                                   |  |
| 10 mg                                                                                                 | 0.0036  |                                                                                   |  |
| March 31, 2001                                                                                        |         | David F. Alderman                                                                 |  |
| Effective through                                                                                     |         | For the National Institute of Standards and Technology                            |  |

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NVLAP LAB CODE 105000-0

## Scope of Accreditation

**CALIBRATION LABORATORIES**

OAK RIDGE METROLOGY CENTER

5 mg 0.0036  
2 mg 0.0036  
1 mg 0.0036

**THERMODYNAMICS**

NVLAP Code: 20/T07  
Resistance Temperature Devices

March 31, 2001

Effective through

**MECHANICAL**

NVLAP Code: 20/M08  
Mass

**Range**

0.01 °C to 29.7646 °C

**Best Uncertainty ( $\pm y_{\text{meas}}$ )**

0.001 °C

**Remarks**

Comparison

1. Represents an expanded uncertainty using a coverage factor,  $k=2$

2. Realizable uncertainty depends on frequency being measured, customer requirements, and suitability of customer's equipment.

March 31, 2001

Effective through

**MECHANICAL**

NVLAP Code: 20/M08  
Mass

**Range**

30 kg  
20 kg  
10 kg  
5 kg  
3 kg  
2 kg  
1 kg  
500 g  
300 g  
200 g

**Best Uncertainty ( $\pm y_{\text{meas}}$ )**

12.1 mg  
6.4 mg  
1.6 mg  
0.84 mg  
0.55 mg  
0.38 mg  
0.057 mg  
0.037 mg  
0.029 mg  
0.027 mg

**Remarks**

Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility

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NVLAP LAB CODE 105001-0

## Scope of Accreditation

**CALIBRATION LABORATORIES**

RICE LAKE WEIGHING SYSTEMS

230 West Coleman Street  
P.O. Box 272  
Rice Lake, WI 54868  
Mr. Richard Calkins  
Phone: 715-234-9171 x243 Fax: 715-234-6967  
E-Mail: rccal@rlws.com  
URL: http://www.rlws.com

**MECHANICAL**

NVLAP Code: 20/M08  
Mass

March 31, 2001

Effective through

**MECHANICAL**

NVLAP Code: 20/M08  
Mass

**Range**

30 kg  
20 kg  
10 kg  
5 kg  
3 kg  
2 kg  
1 kg  
500 g  
300 g  
200 g

**Best Uncertainty ( $\pm y_{\text{meas}}$ )**

12.1 mg  
6.4 mg  
1.6 mg  
0.84 mg  
0.55 mg  
0.38 mg  
0.057 mg  
0.037 mg  
0.029 mg  
0.027 mg

**Remarks**

Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility  
Class 1 Facility

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## Scope of Accreditation

CALIBRATION LABORATORIES

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| RICE LAKE WEIGHING SYSTEMS |                  |
|----------------------------|------------------|
| 100 g                      | Class I Facility |
| 50 g                       | Class I Facility |
| 30 g                       | Class I Facility |
| 20 g                       | Class I Facility |
| 10 g                       | Class I Facility |
| 5 g                        | Class I Facility |
| 3 g                        | Class I Facility |
| 2 g                        | Class I Facility |
| 1 g                        | Class I Facility |
| 500 mg                     | Class I Facility |
| 300 mg                     | Class I Facility |
| 200 mg                     | Class I Facility |
| 100 mg                     | Class I Facility |
| 50 mg                      | Class I Facility |
| 30 mg                      | Class I Facility |
| 20 mg                      | Class I Facility |
| 10 mg                      | Class I Facility |
| 5 mg                       | Class I Facility |
| 0.030 mg                   | Class I Facility |
| 0.0159 mg                  | Class I Facility |
| 0.0104 mg                  | Class I Facility |
| 0.0080 mg                  | Class I Facility |
| 0.0071 mg                  | Class I Facility |
| 0.0047 mg                  | Class I Facility |
| 0.0036 mg                  | Class I Facility |
| 0.0033 mg                  | Class I Facility |
| 0.0036 mg                  | Class I Facility |
| 0.00268 mg                 | Class I Facility |
| 0.00216 mg                 | Class I Facility |
| 0.00206 mg                 | Class I Facility |
| 0.00234 mg                 | Class I Facility |
| 0.00168 mg                 | Class I Facility |
| 0.00134 mg                 | Class I Facility |
| 0.00128 mg                 | Class I Facility |
| 0.00144 mg                 | Class I Facility |
| 0.0011 mg                  | Class I Facility |

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| RICE LAKE WEIGHING SYSTEMS |                   |
|----------------------------|-------------------|
| 3 mg                       | Class I Facility  |
| 2 mg                       | Class I Facility  |
| 1 mg                       | Class I Facility  |
| 50 kg                      | Class II Facility |
| 30 kg                      | Class II Facility |
| 20 kg                      | Class II Facility |
| 10 kg                      | Class II Facility |
| 5 kg                       | Class II Facility |
| 3 kg                       | Class II Facility |
| 2 kg                       | Class II Facility |
| 1 kg                       | Class II Facility |
| 500 g                      | Class II Facility |
| 300 g                      | Class II Facility |
| 200 g                      | Class II Facility |
| 100 g                      | Class II Facility |
| 50 g                       | Class II Facility |
| 30 g                       | Class II Facility |
| 20 g                       | Class II Facility |
| 0.0009 mg                  | Class I Facility  |
| 0.00086 mg                 | Class I Facility  |
| 0.00098 mg                 | Class I Facility  |
| 99 mg                      | Class II Facility |
| 12 mg                      | Class II Facility |
| 6 mg                       | Class II Facility |
| 1.6 mg                     | Class II Facility |
| 0.84 mg                    | Class II Facility |
| 0.55 mg                    | Class II Facility |
| 0.38 mg                    | Class II Facility |
| 0.06 mg                    | Class II Facility |
| 0.04 mg                    | Class II Facility |
| 0.03 mg                    | Class II Facility |
| 0.03 mg                    | Class II Facility |
| 0.030 mg                   | Class II Facility |
| 0.016 mg                   | Class II Facility |
| 0.010 mg                   | Class II Facility |
| 0.008 mg                   | Class II Facility |

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### RICE LAKE WEIGHING SYSTEMS

| Weight  | Facility           |
|---------|--------------------|
| 10 g    | Class II Facility  |
| 5 g     | Class II Facility  |
| 3 g     | Class II Facility  |
| 2 g     | Class II Facility  |
| 1 g     | Class II Facility  |
| 500 mg  | Class II Facility  |
| 300 mg  | Class II Facility  |
| 200 mg  | Class II Facility  |
| 100 mg  | Class II Facility  |
| 50 mg   | Class II Facility  |
| 30 mg   | Class II Facility  |
| 20 mg   | Class II Facility  |
| 10 mg   | Class II Facility  |
| 5 mg    | Class II Facility  |
| 3 mg    | Class II Facility  |
| 2 mg    | Class II Facility  |
| 1 mg    | Class II Facility  |
| 1000 kg | Class III Facility |
| 29 g    |                    |

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CALIBRATION LABORATORIES

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### RICE LAKE WEIGHING SYSTEMS

| Weight   | Facility           |
|----------|--------------------|
| 500 kg   | Class III Facility |
| 200 kg   | Class III Facility |
| 100 kg   | Class III Facility |
| 50 kg    | Class III Facility |
| 30 kg    | Class III Facility |
| 20 kg    | Class III Facility |
| 10 kg    | Class III Facility |
| 5 kg     | Class III Facility |
| 3 kg     | Class III Facility |
| 2 kg     | Class III Facility |
| 1 kg     | Class III Facility |
| 500 g    | Class III Facility |
| 300 g    | Class III Facility |
| 200 g    | Class III Facility |
| 100 g    | Class III Facility |
| 50 g     | Class III Facility |
| 30 g     | Class III Facility |
| 20 g     | Class III Facility |
| 5.1 g    | Class III Facility |
| 2.7 g    | Class III Facility |
| 2.7 g    | Class III Facility |
| 210 mg   | Class III Facility |
| 12 mg    | Class III Facility |
| 11 mg    | Class III Facility |
| 1.9 mg   | Class III Facility |
| 0.99 mg  | Class III Facility |
| 0.64 mg  | Class III Facility |
| 0.47 mg  | Class III Facility |
| 0.012 mg | Class III Facility |
| 0.069 mg | Class III Facility |
| 0.052 mg | Class III Facility |
| 0.047 mg | Class III Facility |
| 0.043 mg | Class III Facility |
| 0.023 mg | Class III Facility |
| 0.015 mg | Class III Facility |
| 0.017 mg | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| Range  | Best Uncertainty ( $\pm y_{95\%}$ ) | Remarks            |
|--------|-------------------------------------|--------------------|
| 10 g   | 0.015 mg                            | Class III Facility |
| 5 g    | 0.005 mg                            | Class III Facility |
| 3 g    | 0.004 mg                            | Class III Facility |
| 2 g    | 0.004 mg                            | Class III Facility |
| 1 g    | 0.004 mg                            | Class III Facility |
| 500 mg | 0.003 mg                            | Class III Facility |
| 300 mg | 0.002 mg                            | Class III Facility |
| 200 mg | 0.003 mg                            | Class III Facility |
| 100 mg | 0.003 mg                            | Class III Facility |
| 50 mg  | 0.002 mg                            | Class III Facility |
| 30 mg  | 0.002 mg                            | Class III Facility |
| 20 mg  | 0.002 mg                            | Class III Facility |
| 10 mg  | 0.002 mg                            | Class III Facility |
| 5 mg   | 0.001 mg                            | Class III Facility |
| 3 mg   | 0.001 mg                            | Class III Facility |
| 2 mg   | 0.001 mg                            | Class III Facility |
| 1 mg   | 0.001 mg                            | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| Range   | Best Uncertainty ( $\pm y_{95\%}$ ) | Remarks            |
|---------|-------------------------------------|--------------------|
| 2500 lb | 46 g                                | Class III Facility |
| 2000 lb | 14 g                                | Class III Facility |
| 1000 lb | 4.8 g                               | Class III Facility |
| 500 lb  | 2.7 g                               | Class III Facility |
| 250 lb  | 2.7 g                               | Class III Facility |
| 200 lb  | 2.6 g                               | Class III Facility |
| 100 lb  | 210 mg                              | Class III Facility |
| 50 lb   | 15 mg                               | Class III Facility |
| 30 lb   | 13 mg                               | Class III Facility |
| 25 lb   | 17 mg                               | Class III Facility |
| 20 lb   | 2.3 mg                              | Class III Facility |
| 10 lb   | 1.10 mg                             | Class III Facility |
| 5 lb    | 0.56 mg                             | Class III Facility |
| 4 lb    | 1.20 mg                             | Class III Facility |
| 3 lb    | 0.38 mg                             | Class III Facility |

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NVLAP LAB CODE 105001-0

**CALIBRATION LABORATORIES**

**RICE LAKE WEIGHING SYSTEMS**

|          |                    |
|----------|--------------------|
| 2 lb     | Class III Facility |
| 1 lb     | Class III Facility |
| 0.5 lb   | Class III Facility |
| 0.3 lb   | Class III Facility |
| 0.2 lb   | Class III Facility |
| 0.1 lb   | Class III Facility |
| 0.05 lb  | Class III Facility |
| 0.03 lb  | Class III Facility |
| 0.02 lb  | Class III Facility |
| 0.01 lb  | Class III Facility |
| 0.005 lb | Class III Facility |
| 0.003 lb | Class III Facility |
| 0.002 lb | Class III Facility |
| 0.001 lb | Class III Facility |
| 4 oz     | Class III Facility |
| 2 oz     | Class III Facility |
| 1 oz     | Class III Facility |
| 1/2 oz   | Class III Facility |
| 0.12 mg  | Class III Facility |
| 0.062 mg | Class III Facility |
| 0.04 mg  | Class III Facility |
| 0.04 mg  | Class III Facility |
| 0.018 mg | Class III Facility |
| 0.018 mg | Class III Facility |
| 0.012 mg | Class III Facility |
| 0.010 mg | Class III Facility |
| 0.010 mg | Class III Facility |
| 0.003 mg | Class III Facility |
| 0.002 mg | Class III Facility |
| 0.001 mg | Class III Facility |
| 0.001 mg | Class III Facility |
| 0.001 mg | Class III Facility |
| 0.001 mg | Class III Facility |
| 0.036 mg | Class III Facility |
| 0.015 mg | Class III Facility |
| 0.016 mg | Class III Facility |
| 0.011 mg | Class III Facility |

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**CALIBRATION LABORATORIES**

**RICE LAKE WEIGHING SYSTEMS**

|          |                    |
|----------|--------------------|
| 1/4 oz   | Class III Facility |
| 1/8 oz   | Class III Facility |
| 1/16 oz  | Class III Facility |
| 1/32 oz  | Class III Facility |
| 0.010 mg | Class III Facility |
| 0.009 mg | Class III Facility |
| 0.009 mg | Class III Facility |
| 0.010 mg | Class III Facility |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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**CALIBRATION LABORATORIES**

SANDIA NATIONAL LABORATORIES

Primary Electrical Standards Dept. 1542  
P.O. Box 5800, Mail Stop 0665  
Albuquerque, NM 87185-0665  
Dr. Richard B. Pettit  
Phone: 505-844-6242 Fax: 505-844-4372  
E-Mail: rbpettit@sandia.gov  
URL: <http://www.sandia.gov/psl>

**DIMENSIONAL**

NVLAP Code: 20/D01  
Angular

| Range           | Best Uncertainty ( $\pm$ ) in percent <sup>1</sup> | Remarks                             |
|-----------------|----------------------------------------------------|-------------------------------------|
| Angle Blocks    | 0.60 arc second                                    | Standard Sizes, 1 arc second to 45° |
| Optical Squares | 0.46 arc second                                    |                                     |
| True Squares    | 0.28 arc second                                    |                                     |

NVLAP Code: 20/D03  
Gage Blocks

| Range            | Best Uncertainty ( $\pm$ ) in percent <sup>1,2</sup> | Remarks                                 |
|------------------|------------------------------------------------------|-----------------------------------------|
| to 100 mm (4 in) | 30 mm + 0.14 L                                       | Interferometry with Historical Analysis |
| to 100 mm (4 in) | 34 mm + 0.33 L                                       | Interferometry, single wiring           |

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**CALIBRATION LABORATORIES**

SANDIA NATIONAL LABORATORIES

< 1 mm (.04 in)

1 to 100 mm (.04 to 4 in)

125 to 500 mm (5 to 20 in)

DC/LOW FREQUENCY  
NVLAP Code: 20/E01  
Voltage Converters

**Mechanical Comparison to Masters<sup>2,3,4</sup>**

41 mm

35 mm + 0.59 L

127 mm + 0.30 L

**Best Uncertainty ( $\pm$ ) in ppm<sup>1</sup>**

| Frequency in Hertz | 50 k | 100 k | 200 k | 500 k | 1 M |
|--------------------|------|-------|-------|-------|-----|
| 1 V                | 102  | 20    | 23    | 17    | 26  |
| 2 V                | 101  | 18    | 17    | 21    | 27  |
| 3 V                | 102  | 16    | 18    | 17    | 27  |
| 4 V                | 101  | 17    | 17    | 19    | 30  |
| 6 V                | 101  | 16    | 16    | 17    | 27  |
| 10 V               | 101  | 16    | 18    | 18    | 27  |
| 12 V               | 101  | 18    | 18    | 16    | 27  |

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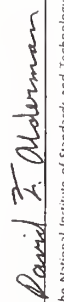
| CALIBRATION LABORATORIES |     | SANDIA NATIONAL LABORATORIES |    |    |    |    |    |    |    |  |  |
|--------------------------|-----|------------------------------|----|----|----|----|----|----|----|--|--|
| 20 V                     | 104 | 19                           | 16 | 17 | 30 | 41 | 72 | 76 | 78 |  |  |
| 30 V                     | 102 | 17                           | 16 | 16 | 27 | 42 | 71 | 76 | 77 |  |  |
| 40 V                     | 101 | 17                           | 16 | 19 | 27 | 41 | 73 | 76 | 77 |  |  |
| 60 V                     | 101 | 23                           | 16 | 17 | 27 | 42 | 71 | 71 | 74 |  |  |
| 100 V                    | 101 | 19                           | 16 | 17 | 28 | 43 | 73 | 75 | 75 |  |  |
| 120 V                    | 102 | 22                           | 21 | 22 | 31 | 52 |    |    |    |  |  |
| 200 V                    | 101 | 23                           | 22 | 24 | 32 | 51 |    |    |    |  |  |
| 300 V                    | 103 | 29                           | 25 | 25 | 34 | 56 |    |    |    |  |  |
| 400 V                    | 102 | 21                           | 22 | 22 | 32 | 59 |    |    |    |  |  |
| 600 V                    | 102 | 23                           | 22 | 21 | 33 | 57 |    |    |    |  |  |
| 1000 V                   | 104 | 31                           | 29 | 31 | 43 | 69 |    |    |    |  |  |

NVLAP Code: 20/E01  
AC Current Stimuli

| Range  | Frequency | Best Uncertainty ( $\pm$ ) in percent <sup>note 1</sup> |
|--------|-----------|---------------------------------------------------------|
| 10 mA  | 50 kHz    | 0.010                                                   |
| 25 mA  | 50 kHz    | 0.010                                                   |
| 50 mA  | 50 kHz    | 0.010                                                   |
| 100 mA | 50 kHz    | 0.014                                                   |

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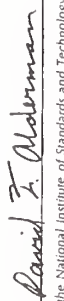
| CALIBRATION LABORATORIES |  | SANDIA NATIONAL LABORATORIES |  |  |         |       |  |  |  |  |  |
|--------------------------|--|------------------------------|--|--|---------|-------|--|--|--|--|--|
| 250 mA                   |  |                              |  |  | 50 kHz  | 0.010 |  |  |  |  |  |
| 500 mA                   |  |                              |  |  | 50 kHz  | 0.011 |  |  |  |  |  |
| 1 A                      |  |                              |  |  | 50 kHz  | 0.011 |  |  |  |  |  |
| 1 A                      |  |                              |  |  | 100 kHz | 0.014 |  |  |  |  |  |
| 2.5 A                    |  |                              |  |  | 50 kHz  | 0.011 |  |  |  |  |  |
| 5 A                      |  |                              |  |  | 50 Hz   | 0.009 |  |  |  |  |  |
| 5 A                      |  |                              |  |  | 60 Hz   | 0.009 |  |  |  |  |  |
| 5 A                      |  |                              |  |  | 50 kHz  | 0.011 |  |  |  |  |  |
| 10 A                     |  |                              |  |  | 50 kHz  | 0.017 |  |  |  |  |  |
| 20 A                     |  |                              |  |  | 50 Hz   | 0.013 |  |  |  |  |  |
| 20 A                     |  |                              |  |  | 400 Hz  | 0.013 |  |  |  |  |  |
| 20 A                     |  |                              |  |  | 1 kHz   | 0.013 |  |  |  |  |  |
| 20 A                     |  |                              |  |  | 50 kHz  | 0.017 |  |  |  |  |  |

NVLAP Code: 20/E03  
Capacitance Dividers - Pulsed High-Voltage Condition

| Range       | Best Uncertainty ( $\pm$ ) in percent <sup>note 1</sup> | Remarks               |
|-------------|---------------------------------------------------------|-----------------------|
| 1 to 350 kV | 2.0                                                     | 1 to 30 $\mu$ s Pulse |

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| NVLAP Code: 20/E05    | Best Uncertainty ( $\pm$ ) in ppm <sup>max 1</sup> | Remarks            |
|-----------------------|----------------------------------------------------|--------------------|
| DC Resistance         |                                                    |                    |
| Range in ohms         |                                                    |                    |
| 0.0001 to 0.001       | 11                                                 | Low Resistance     |
| 0.001 to 0.01         | 4                                                  | Low Resistance     |
| 0.01 to 0.1           | 2.5                                                | Low Resistance     |
| 0.1 to 1              | 2                                                  | Low Resistance     |
| 1                     | 0.057                                              | Thomas             |
| 1 to 10               | 1                                                  |                    |
| 10 to 10 <sup>4</sup> | 0.5                                                |                    |
| 10 k                  | 0.15                                               | SR104              |
| 10 <sup>5</sup>       | 2                                                  |                    |
| 10 <sup>6</sup>       | 3                                                  |                    |
| 10 <sup>7</sup>       | 5                                                  |                    |
| 10 <sup>8</sup>       | 10                                                 |                    |
| 10 <sup>8</sup>       | 240                                                | with Teraohmometer |

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| NVLAP Code: 20/E05    | Best Uncertainty ( $\pm$ ) in ppm <sup>max 1</sup> | Remarks            |
|-----------------------|----------------------------------------------------|--------------------|
| DC Resistance         |                                                    |                    |
| Range in ohms         |                                                    |                    |
| 0.0001 to 0.001       | 11                                                 | Low Resistance     |
| 0.001 to 0.01         | 4                                                  | Low Resistance     |
| 0.01 to 0.1           | 2.5                                                | Low Resistance     |
| 0.1 to 1              | 2                                                  | Low Resistance     |
| 1                     | 0.057                                              | Thomas             |
| 1 to 10               | 1                                                  |                    |
| 10 to 10 <sup>4</sup> | 0.5                                                |                    |
| 10 k                  | 0.15                                               | SR104              |
| 10 <sup>5</sup>       | 2                                                  |                    |
| 10 <sup>6</sup>       | 3                                                  |                    |
| 10 <sup>7</sup>       | 5                                                  |                    |
| 10 <sup>8</sup>       | 10                                                 |                    |
| 10 <sup>8</sup>       | 240                                                | with Teraohmometer |

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|                                                                                                                                                                                                                                                                                                                                                                       |                                                          |                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>to 10 kV</p> <p>Ratio/Bridges</p> <p>1:1 to 1:100,000</p>                                                                                                                                                                                                                                                                                                          | <p>0.2 %</p> <p><math>0.5 \times 10^7</math> (ratio)</p> | <p>10 kV system</p> <p>For ratio based on 20 step first dial (<math>k=3</math>). For bridges, uncertainty combines ratio and resistance uncertainties</p> |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>NVLAP Code:</b> 20/E08</p> <p>Inductive Dividers</p> </div> <div style="width: 30%;"> <p><b>Best Uncertainty (<math>\pm</math>) in ppm<sup>nom</sup> i</b></p> <p>55</p> </div> <div style="width: 30%;"> <p><b>Remarks</b></p> <p>@ 60,1 k and 10 kHz</p> </div> </div> |                                                          |                                                                                                                                                           |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>NVLAP Code:</b> 20/E10</p> <p>LF Capacitance</p> </div> <div style="width: 30%;"> <p><b>Best Uncertainty (<math>\pm</math>) in ppm<sup>nom</sup> i</b></p> <p>5</p> </div> <div style="width: 30%;"> <p><b>Remarks</b></p> <p>@ 1 kHz</p> </div> </div>                  |                                                          |                                                                                                                                                           |

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LF Inductance

| Range       | Best Uncertainty ( $\pm$ ) in percent <sup>95%</sup> |      |
|-------------|------------------------------------------------------|------|
|             | 1 k                                                  | 10 k |
| 10 $\mu$ H  | 0.20                                                 | 0.20 |
| 20 $\mu$ H  | 0.20                                                 | 0.20 |
| 50 $\mu$ H  | 0.20                                                 | 0.20 |
| 100 $\mu$ H | 0.10                                                 | 0.10 |
| 200 $\mu$ H | 0.10                                                 | 0.10 |
| 500 $\mu$ H | 0.02                                                 | 0.05 |
| 1 mH        | 0.02                                                 | 0.06 |
| 2 mH        | 0.03                                                 | 0.06 |
| 5 mH        | 0.03                                                 | 0.06 |
| 10 mH       | 0.02                                                 | 0.05 |
| 20 mH       | 0.02                                                 | 0.05 |
| 50 mH       | 0.02                                                 | 0.05 |
| 100 mH      | 0.02                                                 | 0.05 |

**Remarks**

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**CALIBRATION LABORATORIES**

NVLAP Code: 20/E18

Resistive Dividers - Pulsed High-Voltage Condition

| Range  | Best Uncertainty ( $\pm$ ) in percent <sup>95%</sup> |      |
|--------|------------------------------------------------------|------|
|        | 200 mH                                               | 0.02 |
| 500 mH | 0.02                                                 | 0.02 |
| 1 H    | 0.02                                                 | 0.05 |
| 2 H    | 0.02                                                 | 0.05 |
| 5 H    | 0.02                                                 | 0.10 |
| 10 H   | 0.02                                                 | 0.20 |

**Remarks**

1 to 30  $\mu$ s Pulse

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**IONIZING RADIATION**

NVLAP Code: 20/I04  
Radioactive Sources

| Range                                                      | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Remarks |
|------------------------------------------------------------|----------------------------------------------|---------|
| Alpha Emission Rate<br>1 to $2 \times 10^5$ /s into $2\pi$ | 1.6 %                                        |         |
| Beta Emission Rate<br>50 to 5000 /s into $2\pi$            | 5.0 %                                        |         |
| Alpha Energy<br>3 to 8 MeV                                 | 30 keV                                       |         |

**MECHANICAL**

NVLAP Code: 20/M06  
Force

| Range            | Best Uncertainty ( $\pm$ ) in percent <sup>year 1, 2, 6</sup> | Remarks                                            |
|------------------|---------------------------------------------------------------|----------------------------------------------------|
| 100 to 1,000     | 0.0052                                                        | Primary Standard (Deadweight)                      |
| 1,000 to 100,000 | 0.016                                                         | Secondary Standards (Proving Rings)                |
| 50 to 30,000     | 0.075                                                         | Secondary Standards (Load Cells) <sup>year 7</sup> |

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## RF MICROWAVE

NVLAP Code: 20/R05

HF Capacitance

*Best Uncertainty ( $\pm$ ) in percent<sup>rms</sup>*

| <i>Range in pF</i> | <i>Frequency in Hz</i> |             |            |
|--------------------|------------------------|-------------|------------|
|                    | <i>1 k</i>             | <i>10 k</i> | <i>1 M</i> |
| 0.01               | 0.20                   | 1.3         |            |
| 0.1                | 0.05                   | 1.3         |            |
| 1                  | 0.02                   | 0.04        |            |
| 10                 | 0.01                   | 0.02        |            |
| 100                | 0.01                   | 0.01        |            |
| 1000               | 0.01                   | 0.03        |            |
| 1                  | 0.02                   | 0.2         | 0.30       |
| 2                  | 0.02                   | 0.35        | 0.60       |
| 5                  | 0.02                   | 0.22        | 0.26       |
| 10                 | 0.10                   | 0.14        | 0.15       |
| 20                 | 0.10                   | 0.13        | 0.11       |

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| Range       | 100 k | 1 M  | 10 M |
|-------------|-------|------|------|
| 0.1 $\mu$ H | 2.19  | 4.00 |      |
| 0.2 $\mu$ H | 2.03  | 2.03 |      |
| 0.5 $\mu$ H | 0.80  | 1.20 |      |
| 1.0 $\mu$ H | 0.56  | 0.92 |      |
| 2.0 $\mu$ H | 0.31  | 0.73 |      |
| 5.0 $\mu$ H | 0.25  | 0.68 |      |
| 10 $\mu$ H  | 0.39  | 0.63 |      |
| 25 $\mu$ H  | 0.32  | 0.16 |      |
| 50 $\mu$ H  | 0.26  | 0.12 |      |
| 100 $\mu$ H | 0.24  | 0.11 |      |
| 250 $\mu$ H | 0.32  | 0.16 |      |
| 500 $\mu$ H | 0.26  | 0.09 |      |
| 1 mH        | 0.24  |      |      |

NVLAP Code: 20/R06  
HF Inductance

Best Uncertainty ( $\pm$ ) in percent<sup>nom</sup>

Frequency in Hz

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| Range       | 100 k | 1 M  | 10 M |
|-------------|-------|------|------|
| 0.1 $\mu$ H | 2.19  | 4.00 |      |
| 0.2 $\mu$ H | 2.03  | 2.03 |      |
| 0.5 $\mu$ H | 0.80  | 1.20 |      |
| 1.0 $\mu$ H | 0.56  | 0.92 |      |
| 2.0 $\mu$ H | 0.31  | 0.73 |      |
| 5.0 $\mu$ H | 0.25  | 0.68 |      |
| 10 $\mu$ H  | 0.39  | 0.63 |      |
| 25 $\mu$ H  | 0.32  | 0.16 |      |
| 50 $\mu$ H  | 0.26  | 0.12 |      |
| 100 $\mu$ H | 0.24  | 0.11 |      |
| 250 $\mu$ H | 0.32  | 0.16 |      |
| 500 $\mu$ H | 0.26  | 0.09 |      |
| 1 mH        | 0.24  |      |      |

NVLAP Code: 20/R06  
HF Inductance

Best Uncertainty ( $\pm$ ) in percent<sup>nom</sup>

Frequency in Hz

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|              |      |     |     |  |
|--------------|------|-----|-----|--|
| 2.5 mH       | 0.25 | 1.4 | 1.7 |  |
| 5 mH         | 0.24 | 0.5 | 0.9 |  |
| 10 mH        | 0.29 | 0.4 | 0.6 |  |
| 25 mH        | 0.25 | 0.2 | 0.2 |  |
| 0.25 $\mu$ H |      | 1.2 | 1.7 |  |
| 1 $\mu$ H    |      | 0.4 | 0.9 |  |
| 10 $\mu$ H   |      | 0.4 | 0.6 |  |
| 100 $\mu$ H  |      | 0.2 | 0.2 |  |

**NVLAP Code:** 20/R10  
Q Standards

**Range**

Selected values from 95 to 607

**Best Uncertainty ( $\pm$ ) in percent<sup>max</sup> 1**

1.2 to 4.5 dependent on Q value and frequency

**Remarks**

frequency range 50 kHz to 45 MHz

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**NVLAP Code: 20/R11**  
**RF-DC Voltage Converter**  
**High Frequency TVC**

Best Uncertainty ( $\pm$ ) in percent<sup>guar.</sup>

| Range | 1 M  | 10 M | 30 M | 50 M | 100 M |
|-------|------|------|------|------|-------|
| 0.5 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 1 V   | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 2 V   | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 2.5 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 3 V   | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 5 V   | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 10 V  | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 20 V  | 0.06 | 0.11 | 0.21 | 0.51 | 1.1   |
| 50 V  | 0.06 | 0.11 | 0.22 | 0.51 | 1.2   |
| 100 V | 0.06 | 0.11 | 0.27 | 0.51 | 1.5   |
| 200 V | 0.06 | 0.12 | 0.21 | 0.51 | 1.1   |

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| Range | Best Uncertainty ( $\pm$ ) in percent <sup>pos.1</sup> |       |       |       |              |
|-------|--------------------------------------------------------|-------|-------|-------|--------------|
|       | 300 M                                                  | 600 M | 700 M | 800 M | 900 M 1000 M |
| 1 V   | 1.3                                                    | 1.3   | 1.3   | 1.3   | 1.3          |
| 2.4 V | 1.3                                                    | 1.3   | 1.3   | 1.3   | 1.3          |
| 7 V   | 1.3                                                    | 1.3   | 1.3   | 1.3   | 1.3          |

Micropotentiometers

| Range  | Best Uncertainty ( $\pm$ ) in percent <sup>pos.1</sup> |       |       |       |       |
|--------|--------------------------------------------------------|-------|-------|-------|-------|
|        | 30 M                                                   | 100 M | 300 M | 600 M | 900 M |
| 0.1 mV | 2.32                                                   | 3.56  | 3.36  | 5.10  | 5.10  |
| 0.2 mV | 0.54                                                   | 1.04  | 1.02  | 1.35  | 1.42  |
| 0.4 mV | 2.34                                                   | 3.44  | 3.18  | 5.10  | 5.10  |
| 0.9 mV | 0.54                                                   | 1.04  | 1.05  | 1.35  | 1.44  |
| 1 mV   | 2.24                                                   | 3.33  | 3.21  | 5.10  | 5.10  |

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|         |      |      |      |      |      |
|---------|------|------|------|------|------|
| 1.5 mV  | 0.59 | 1.02 | 1.02 | 1.33 | 1.33 |
| 4 mV    | 0.53 | 1.07 | 1.21 | 1.38 | 1.39 |
| 5 mV    | 2.24 | 3.16 | 3.17 | 5.10 | 5.10 |
| 10 mV   | 2.27 | 3.19 | 3.16 | 5.10 | 5.10 |
| 11 mV   | 2.25 | 3.17 | 3.58 | 5.10 | 5.10 |
| 25 mV   | 0.48 | 0.97 | 0.97 | 1.28 | 1.30 |
| 28.5 mV | 2.52 | 3.49 | 3.95 | 5.10 |      |
| 102 mV  | 0.53 | 0.99 | 1.08 | 1.30 | 1.28 |
| 150 mV  | 0.43 | 0.99 | 1.06 | 1.32 | 1.28 |
| 320 mV  | 2.24 | 3.23 | 3.18 | 5.10 | 5.10 |
| 330 mV  | 0.45 | 1.01 | 0.98 | 1.38 | 1.29 |

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**NVLAP Code:** 20/R12

RF/Microwave Bolometer Units

Expanded Uncertainties<sup>a=1.23</sup> on Effective Efficiency & Calibration Factor of HP bolometric power sensors.

| <i>Connector Type</i> | <i>Quantity</i>      | <i>Quantity Range</i> | <i>Frequency (MHz)</i> |             |             |
|-----------------------|----------------------|-----------------------|------------------------|-------------|-------------|
|                       |                      |                       | 2000-5000              | 8000-12000  | 12000-18000 |
| N                     | Calibration Factor   | 0.9 to 1              | 0.004-0.006            | 0.005-0.007 | 0.006-0.008 |
|                       |                      |                       |                        |             |             |
| APC-3.5               | Calibration Factor   | 0.9 to 1              | -----                  | 0.009-0.010 | 0.010-0.011 |
|                       |                      |                       |                        |             |             |
| N                     | Effective Efficiency | 0.9 to 1              | 0.004-0.005            | 0.005-0.006 | 0.006-0.008 |
|                       |                      |                       |                        |             |             |
| APC-3.5               | Effective Efficiency | 0.9 to 1              | -----                  | 0.008-0.009 | 0.009-0.010 |
|                       |                      |                       |                        |             |             |

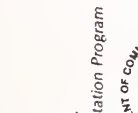
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Frequency (MHz)

| Connector Type | Quantity              | Quantity Range                                 | 50-2000     | 2000-8000   | 8000-12000  | 12000-18000 |
|----------------|-----------------------|------------------------------------------------|-------------|-------------|-------------|-------------|
| GR-900         | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.009 | 0.002-0.015 | -----       | -----       |
| N              | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.008 | 0.002-0.027 | 0.006-0.018 | 0.006-0.030 |
| APC-7          | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.006 | 0.002-0.009 | 0.003-0.018 | 0.005-0.015 |
| APC-3.5        | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.012 | 0.002-0.015 | 0.005-0.019 | 0.012-0.050 |
| GR-900         | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.120-180.0 | 0.019-180.0 | -----       | -----       |
| N              | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.300-180.0 | 0.600-180.0 | 0.800-180.0 |
| APC-7          | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.012-180.0 | 0.200-180.0 | 0.540-180.0 | 0.525-180.0 |
| APC-3.5        | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.240-180.0 | 0.540-180.0 | 0.560-180.0 |

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REF/Microwave Attenuators

Reflection Coefficient (or Scattering Parameter Sii)

A. Dual 6-Port Network Analyzer Certification Uncertainties <sup>max 2.3,4</sup>

Frequency (MHz)

| Connector Type | Quantity              | Quantity Range                                 | 50-2000     | 2000-8000   | 8000-12000  | 12000-18000 |
|----------------|-----------------------|------------------------------------------------|-------------|-------------|-------------|-------------|
| GR-900         | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.009 | 0.002-0.015 | -----       | -----       |
| N              | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.008 | 0.002-0.027 | 0.006-0.018 | 0.006-0.030 |
| APC-7          | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.006 | 0.002-0.009 | 0.003-0.018 | 0.005-0.015 |
| APC-3.5        | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.012 | 0.002-0.015 | 0.005-0.019 | 0.012-0.050 |
| GR-900         | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.120-180.0 | 0.019-180.0 | -----       | -----       |
| N              | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.300-180.0 | 0.600-180.0 | 0.800-180.0 |
| APC-7          | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.012-180.0 | 0.200-180.0 | 0.540-180.0 | 0.525-180.0 |
| APC-3.5        | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.240-180.0 | 0.540-180.0 | 0.560-180.0 |

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Frequency (MHz)

| Connector Type | Quantity              | Quantity Range                                 | 50-2000     | 2000-8000   | 8000-12000  | 12000-18000 |
|----------------|-----------------------|------------------------------------------------|-------------|-------------|-------------|-------------|
| GR-900         | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.009 | 0.002-0.015 | -----       | -----       |
| N              | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.008 | 0.002-0.027 | 0.006-0.018 | 0.006-0.030 |
| APC-7          | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.006 | 0.002-0.009 | 0.003-0.018 | 0.005-0.015 |
| APC-3.5        | S <sub>11</sub>       | 0 to 1                                         | 0.002-0.012 | 0.002-0.015 | 0.005-0.019 | 0.012-0.050 |
| GR-900         | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.120-180.0 | 0.019-180.0 | -----       | -----       |
| N              | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.300-180.0 | 0.600-180.0 | 0.800-180.0 |
| APC-7          | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.012-180.0 | 0.200-180.0 | 0.540-180.0 | 0.525-180.0 |
| APC-3.5        | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 1<br>-180 to +180 deg | 0.360-180.0 | 0.240-180.0 | 0.540-180.0 | 0.560-180.0 |

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2. Three-port devices

| Connector Type   | Quantity        | Quantity Range | 25-1000 (MHz) |
|------------------|-----------------|----------------|---------------|
| N, APC-7-APC-3.5 | S <sub>11</sub> | 0 to 0.3       | 0.011 - 0.020 |
| N, APC-7-APC-3.5 | Γ <sub>gc</sub> | 0 to 0.3       | 0.01 - 0.03   |

D. Weinschel VM-4B Certification Uncertainties <sup>note 2.1.4</sup>

| Connector Type | Quantity        | Quantity Range | Frequency (MHz)                 |             |                         |
|----------------|-----------------|----------------|---------------------------------|-------------|-------------------------|
|                |                 |                | 10-2000                         | 2000-8000   | 8000-12000 12000-18000  |
| N              | S <sub>11</sub> | 0 to 1         | 0.025-0.080                     | 0.031-0.085 | 0.040-0.090 0.046-0.112 |
| APC-7          | S <sub>11</sub> | 0 to 1         | 0.011-0.075                     | 0.015-0.080 | 0.030-0.085 0.036-0.106 |
| BNC            | S <sub>11</sub> | 0 to 1         | 0.025-0.060 <sup>note 2.5</sup> | -----       | -----                   |

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A. Dual 6-Port Network Analyzer Certification Uncertainties <sup>note 2.1.4</sup>

| Connector Type | Quantity        | Quantity Range | Frequency (MHz) |             |                         |
|----------------|-----------------|----------------|-----------------|-------------|-------------------------|
|                |                 |                | 50-2000         | 2000-8000   | 8000-12000 12000-18000  |
| GR-900         | S <sub>11</sub> | 0 to 60 dB     | 0.012-0.390     | 0.015-0.410 | -----                   |
| N              | S <sub>11</sub> | 0 to 60 dB     | 0.012-0.390     | 0.015-0.410 | 0.018-0.410 0.021-0.900 |
| APC-7          | S <sub>11</sub> | 0 to 60 dB     | 0.012-0.390     | 0.015-0.410 | 0.020-0.410 0.021-0.900 |
| APC-3.5        | S <sub>11</sub> | 0 to 60 dB     | 0.012-0.150     | 0.015-0.410 | 0.020-0.410 0.030-0.90  |

B. HP8510 Vector Network Analyzer Uncertainties

1. Expanded Uncertainties <sup>note 1.2.3</sup> on one or two-port devices

| Connector Type | Quantity        | Quantity Range | Frequency (MHz) |           |                        |
|----------------|-----------------|----------------|-----------------|-----------|------------------------|
|                |                 |                | 50-2000         | 2000-8000 | 8000-12000 12000-18000 |
| N              | S <sub>11</sub> | 0 to 60 dB     | 0.01-0.12       | 0.02-0.17 | 0.03-0.25 0.03-0.48    |
| APC-7          | S <sub>11</sub> | 0 to 60 dB     | 0.01-0.08       | 0.01-0.13 | 0.01-0.13 0.01-0.18    |
| APC-3.5        | S <sub>11</sub> | 0 to 60 dB     | 0.01-0.12       | 0.02-0.22 | 0.04-0.25 0.05-0.49    |

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C. HP8753 Vector Network Analyzer Certification Uncertainties<sup>2.1.4</sup>

1. One or two-port devices

| Connector Type | Quantity              | Quantity Range                                 | Frequency (MHz) |           |
|----------------|-----------------------|------------------------------------------------|-----------------|-----------|
|                |                       |                                                | 25-1000         | 1000-3000 |
| N              | S <sub>11</sub>       | 0 to 60 dB                                     | 0.003-0.5       | 0.004-1.2 |
| APC-7          | S <sub>11</sub>       | 0 to 60 dB                                     | 0.002-0.6       | 0.003-0.9 |
| APC-3.5        | S <sub>11</sub>       | 0 to 60 dB                                     | 0.003-0.6       | 0.003-1.0 |
| APC-3.5        | Arg(S <sub>11</sub> ) | 0 <  S <sub>11</sub>   < 60 dB<br>0 to 360 deg | 0.4-10          | 0.4-10    |

2. Three-port devices

| Connector Type    | Quantity          | Quantity Range | Frequency (MHz) |           |
|-------------------|-------------------|----------------|-----------------|-----------|
|                   |                   |                | 25-1000         | 1000-3000 |
| N, APC-7, APC-3.5 | Coupling  (dB)    | 3-20 dB        | 0.050 - 0.230   |           |
| N, APC-7, APC-3.5 | Mainline  (dB)    | 0 to 8 dB      | 0.020 - 0.050   |           |
| N, APC-7, APC-3.5 | Directivity  (dB) | 15-25 dB       | 0.9 - 3.8       |           |
| N, APC-7, APC-3.5 | Directivity  (dB) | 30-40 dB       | 4 - ∞           |           |

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D. Weinschel VM-4B Certification Uncertainties <sup>new 2.1.4</sup> on Attenuation

| Connector Type | Quantity        | Quantity Range | Frequency (MHz)            |           |                        |
|----------------|-----------------|----------------|----------------------------|-----------|------------------------|
|                |                 |                | 10-2000                    | 2000-8000 | 8000-12000 12000-18000 |
| N              | S <sub>11</sub> | 0 to 100 dB    | 0.06-0.60                  | 0.10-1.10 | 0.25-1.52 0.38-1.80    |
| APC-7          | S <sub>21</sub> | 0 to 100 dB    | 0.06-0.60                  | 0.10-1.00 | 0.20-1.43 0.30-1.75    |
| BNC            | S <sub>21</sub> | 0 to 100 dB    | 0.10-0.90 <sup>new 5</sup> | -----     | -----                  |

E. Power Ratio Attenuation Expanded Uncertainties <sup>new 1.2.3</sup>

| Connector Type                                 | Quantity        | Quantity Range | Frequency (MHz)             |                             |                                         |
|------------------------------------------------|-----------------|----------------|-----------------------------|-----------------------------|-----------------------------------------|
|                                                |                 |                | 10-2000                     | 2000-8000                   | 8000-12000 12000-18000                  |
| Fixed Attenuators or Step/Variable Attenuators | S <sub>21</sub> | 0 to 11 dB     | 0.008-0.014 + Mismatch Unc. | 0.014-0.016 + Mismatch Unc. | 0.013-0.015 + Mismatch Unc. 0.015-0.018 |
| Isolated Step/Variable Attenuators             | S <sub>21</sub> | 0 to 11 dB     | 0.008-0.014                 | 0.014-0.016                 | 0.013-0.015 0.015-0.018                 |

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NVLAP Code: 20/R16  
Group Delay Certification Uncertainties <sup>new 2.1.4</sup>

| Connector Type    | Typical Attenu. (dB) | Delay (ns) | 50-1000 (MHz) |
|-------------------|----------------------|------------|---------------|
| APC-7, N, APC-3.5 | 0.08                 | 5          | 0.02 - 0.05   |
| APC-7, N, APC-3.5 | 0.21                 | 15         | 0.04 - 0.13   |
| APC-7, N, APC-3.5 | 0.8                  | 50         | 0.05 - 0.12   |
| APC-7, N, APC-3.5 | 3                    | 200        | 0.15 - 0.41   |
| APC-7, N, APC-3.5 | 2.2                  | 385        | 0.46 - 0.50   |

NVLAP Code: 20/R17  
RF/Microwave Power Meters

CW Power Certification Uncertainties <sup>new 2.1.4</sup>

A. Low to Medium Power CW Microwave Power Meter Calibration at Type N Connector

| Quantity    | Quantity Range | Frequency (MHz) |               |               |                |
|-------------|----------------|-----------------|---------------|---------------|----------------|
|             |                | 1 to 2000       | 2000 to 4000  | 4000 to 12400 | 12400 to 16500 |
| Power (dBm) | -30 to -10     | .09 to .41 dB   | .13 to .41 dB | .14 to .34 dB | .16 to .46 dB  |
| Power (dBm) | -10 to 10      | .06 to .27 dB   | .10 to .25 dB | .11 to .30 dB | -----          |
| Power (dBm) | 10 to 30       | .06 to .25 dB   | .10 to .21 dB | .11 to .24 dB | -----          |

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B. Low Power, Wide Range, CW Microwave Power Meter Calibration at Type N Connector

| Quantity    | Quantity Range | Frequency (MHz) |                 |
|-------------|----------------|-----------------|-----------------|
|             |                | 30 to 4000      | 4000 to 12400   |
| Power (dBm) | -60 to -50     | 0.20 to 0.41 dB | 0.25 to 0.43 dB |
| Power (dBm) | -50 to -40     | 0.18 to 0.29 dB | 0.23 to 0.35 dB |
| Power (dBm) | -40 to -30     | 0.14 to 0.25 dB | 0.16 to 0.32 dB |
| Power (dBm) | -30 to -20     | 0.14 to 0.23 dB | 0.16 to 0.27 dB |

C. Medium Power CW Microwave Power Meter Calibration at Type N Connector

| Quantity   | Quantity Range | Frequency (MHz) |              |
|------------|----------------|-----------------|--------------|
|            |                | 12 to 1000      | 240 to 2500  |
| Power (mW) | 1 to 10        | 1.7 to 3.3 %    | -----        |
| Power (mW) | 1 to 100       | -----           | 3.1 to 4.3 % |
| Power (mW) | 80 to 160      | -----           | 1.9 to 2.4 % |

D. Medium Power CW Microwave Power Meter Calibrations at APC-3.5 Connector

| Quantity   | Quantity Range | Frequency (MHz) |               |
|------------|----------------|-----------------|---------------|
|            |                | 4000 to 8000    | 8000 to 18000 |
| Power (mW) | 0.1 to 8       | 2.8 to 4.0 %    | 3.0 to 4.9 %  |
|            |                |                 | 4.0 to 5.8 %  |

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E. High Power CW Microwave Power Meter Calibrations at Type N Connector

| Quantity      | Quantity Range | Frequency (MHz) |               |
|---------------|----------------|-----------------|---------------|
|               |                | 13.6 to 300     | 300 to 3000   |
| Power (Watts) | 0.2 to 10      | 9.0 to 9.1 %    | 3.3 to 10.6 % |
| Power (Watts) | 10 to 200      | 4.4 to 10.1 %   | 9.6 to 10.6 % |

Pulse Power Certification Uncertainties <sup>over 2.3 s</sup>

A. Pulse Power Meter Calibrations at Type N Connector

| Quantity   | Quantity Range | 2000         | Remarks |
|------------|----------------|--------------|---------|
| Power (mW) | 10 to 100      | 7.3 to 8.2 % |         |

THERMODYNAMICS

NVLAP Code: 20/T04

Leak Artifacts

| Range                        | Best Uncertainty (±) in percent <sup>one s</sup> | Remarks               |
|------------------------------|--------------------------------------------------|-----------------------|
| Gas Leak - PAV Technique     |                                                  |                       |
| 1 x 10 <sup>-7</sup> moles/s | 0.7                                              | Total Gas Measurement |
| 1 x 10 <sup>-8</sup> moles/s | 0.9                                              | Total Gas Measurement |
| 1 x 10 <sup>-9</sup> moles/s | 1.0                                              | Total Gas Measurement |

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1 x 10<sup>-10</sup> moles/s

1.0

Total Gas Measurement

1 x 10<sup>-10</sup> moles/s to  
1 x 10<sup>-14</sup> moles/s

1.0

1 to 200 Atomic Mass  
Units for any non-  
reactive, non-hazardous,  
non-radioactive gas

#### Gas Leak - Comparison Technique

1 x 10<sup>-10</sup> moles/s

2.5

Helium

1 x 10<sup>-11</sup> moles/s

2.4

Helium

1 x 10<sup>-12</sup> moles/s

2.3

Helium

1 x 10<sup>-13</sup> moles/s

2.3

Helium

1 x 10<sup>-14</sup> moles/s

7.0

Helium

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### THERMODYNAMICS

**NVLAP Code:** 20/T05

**Pressure**

**Best Uncertainty ( $\pm$ ) in  $\text{ppm}_{\text{over } 1}$**

**Remarks**

|                                                                                        |    |          |
|----------------------------------------------------------------------------------------|----|----------|
| <b>Pneumatic Deadweight Piston Gauges (absolute mode) - Direct Pressure Comparison</b> |    |          |
| 0.2 to 24 psia [ $\approx 1.4$ to 170 kPa]                                             | 31 | Nitrogen |
| 2.0 to 70 psia [ $\approx 14$ to 480 kPa]                                              | 28 | Nitrogen |
| 52 to 1000 psia [ $\approx 0.4$ to 7.0 MPa]                                            | 46 | Nitrogen |
| <b>Pneumatic Deadweight Piston Gauges (gauge mode) - Direct Pressure Comparison</b>    |    |          |
| 0.2 to 24 psig [ $\approx 1.4$ to 170 kPa]                                             | 29 | Nitrogen |
| 2.0 to 70 psig [ $\approx 14$ to 480 kPa]                                              | 26 | Nitrogen |
| 52 to 1000 psig [ $\approx 0.4$ to 7.0 MPa]                                            | 44 | Nitrogen |
| <b>Hydraulic Deadweight Piston Gauges (gauge mode) - Direct Pressure Comparison</b>    |    |          |
| 0.4 to 4.0 kpsig [ $\approx 2.8$ to 28 MPa]                                            | 44 | Oil      |
| 2.0 to 20 kpsig [ $\approx 14$ to 140 MPa]                                             | 61 | Oil      |
| 4.0 to 40 kpsig [ $\approx 28$ to 280 MPa]                                             | 59 | Oil      |
| <b>Pneumatic Deadweight Piston Gauges - Cross Float (effective area)</b>               |    |          |
| 0.2 to 24 psig [ $\approx 14$ kPa to 170 kPa]                                          | 35 | Nitrogen |

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|                                                                                                                                                                                                   |        |                                                                                                                                                |  |
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| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL 2540-1-1994<br/>ISO 9002:1987</p>                                                                                                                          |        |                                                                                                                                                |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                              |        |                                                                                                                                                |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                   |        | <p>SANDIA NATIONAL LABORATORIES</p>                                                                                                            |  |
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| <p>2.0 to 70 psig [≈ 14 kPa to 480 kPa]</p>                                                                                                                                                       | 33     | Nitrogen                                                                                                                                       |  |
| <p>52 to 1000 psig [≈ 0.4 MPa to 7.0 MPa]</p>                                                                                                                                                     | 46     | Nitrogen                                                                                                                                       |  |
| <p>Hydraulic Deadweight Piston Gauges - Cross Float (effective area)</p>                                                                                                                          |        |                                                                                                                                                |  |
| <p>0.4 to 4.0 kpsig [≈ 2.8 to 28 MPa]</p>                                                                                                                                                         | 46     | Oil                                                                                                                                            |  |
| <p>2.0 to 20 kpsig [≈ 14 to 140 MPa]</p>                                                                                                                                                          | 67     | Oil                                                                                                                                            |  |
| <p>4.0 to 40 kpsig [≈ 28 to 280 MPa]</p>                                                                                                                                                          | 61     | Oil                                                                                                                                            |  |
| <p>Secondary Pressure</p>                                                                                                                                                                         |        |                                                                                                                                                |  |
| <p>Low Range Absolute</p>                                                                                                                                                                         |        |                                                                                                                                                |  |
| <p><i>Pressure</i></p>                                                                                                                                                                            |        |                                                                                                                                                |  |
| <p>0.2 psia [≈ 1.4 kPa]</p>                                                                                                                                                                       | 0.0013 | Nitrogen                                                                                                                                       |  |
| <p>1.0 psia [≈ 7.0 kPa]</p>                                                                                                                                                                       | 0.0013 | Nitrogen                                                                                                                                       |  |
| <p>6.0 psia [≈ 41 kPa]</p>                                                                                                                                                                        | 0.0017 | Nitrogen                                                                                                                                       |  |
| <p>10 psia [≈ 70 kPa]</p>                                                                                                                                                                         | 0.0021 | Nitrogen                                                                                                                                       |  |
| <p>15 psia [≈ 100 kPa]</p>                                                                                                                                                                        | 0.0028 | Nitrogen                                                                                                                                       |  |
| <p>Secondary Pressure</p>                                                                                                                                                                         |        |                                                                                                                                                |  |
| <p>Low Range Gauge or Absolute</p>                                                                                                                                                                |        |                                                                                                                                                |  |
| <p><i>Pressure</i></p>                                                                                                                                                                            |        |                                                                                                                                                |  |
| <p>20 psi [≈ 140 kPa]</p>                                                                                                                                                                         | 0.009  | Nitrogen                                                                                                                                       |  |
| <p>40 psi [≈ 280 kPa]</p>                                                                                                                                                                         | 0.010  | Nitrogen                                                                                                                                       |  |
| <p><i>Best Uncertainty (±) in psi<sup>meas</sup></i></p>                                                                                                                                          |        |                                                                                                                                                |  |
| <p>December 31, 2001</p>                                                                                                                                                                          |        |                                                                                                                                                |  |
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| <p>For the National Institute of Standards and Technology</p>                                                                                                                                     |        |                                                                                                                                                |  |
| <p><i>David F. Alderman</i></p>                                                                                                                                                                   |        |                                                                                                                                                |  |
| <p>NVLAP-025 (11-95)</p>                                                                                                                                                                          |        |                                                                                                                                                |  |

|                                                                                                                                                                                                 |       |                                                                                                                                              |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|--|
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| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL 2540-1-1994<br/>ISO 9002:1987</p>                                                                                                                        |       |                                                                                                                                              |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                            |       |                                                                                                                                              |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                 |       | <p>SANDIA NATIONAL LABORATORIES</p>                                                                                                          |  |
| <p>NVLAP LAB CODE 105002-0</p>                                                                                                                                                                  |       | <p>Page 34 of 40</p>                                                                                                                         |  |
| <p>60 psi [≈ 410 kPa]</p>                                                                                                                                                                       | 0.011 | Nitrogen                                                                                                                                     |  |
| <p>80 psi [≈ 550 kPa]</p>                                                                                                                                                                       | 0.013 | Nitrogen                                                                                                                                     |  |
| <p>100 psi [≈ 690 kPa]</p>                                                                                                                                                                      | 0.014 | Nitrogen                                                                                                                                     |  |
| <p>Secondary Pressure</p>                                                                                                                                                                       |       |                                                                                                                                              |  |
| <p>Mid-Range Gauge or Absolute</p>                                                                                                                                                              |       |                                                                                                                                              |  |
| <p><i>Pressure</i></p>                                                                                                                                                                          |       |                                                                                                                                              |  |
| <p>200 psi [≈ 1.4 MPa]</p>                                                                                                                                                                      | 0.137 | Nitrogen                                                                                                                                     |  |
| <p>500 psi [≈ 3.4 MPa]</p>                                                                                                                                                                      | 0.157 | Nitrogen                                                                                                                                     |  |
| <p>1.0 kpsi [≈ 7.0 MPa]</p>                                                                                                                                                                     | 0.201 | Nitrogen                                                                                                                                     |  |
| <p>1.5 kpsi [≈ 10 MPa]</p>                                                                                                                                                                      | 0.247 | Nitrogen                                                                                                                                     |  |
| <p>2.0 kpsi [≈ 14 MPa]</p>                                                                                                                                                                      | 0.280 | Nitrogen                                                                                                                                     |  |
| <p>Secondary Pressure</p>                                                                                                                                                                       |       |                                                                                                                                              |  |
| <p>High-Range Gauge or Absolute</p>                                                                                                                                                             |       |                                                                                                                                              |  |
| <p>4.0 kpsi [≈ 28 MPa]</p>                                                                                                                                                                      | 0.6   | Nitrogen                                                                                                                                     |  |
| <p>6.0 kpsi [≈ 41 MPa]</p>                                                                                                                                                                      | 0.8   | Nitrogen                                                                                                                                     |  |
| <p>8.0 kpsi [≈ 55 MPa]</p>                                                                                                                                                                      | 1.0   | Nitrogen                                                                                                                                     |  |
| <p>10 kpsi [≈ 70 MPa]</p>                                                                                                                                                                       | 1.0   | Nitrogen                                                                                                                                     |  |
| <p><i>Best Uncertainty (±) in psi<sup>meas</sup></i></p>                                                                                                                                        |       |                                                                                                                                              |  |
| <p>December 31, 2001</p>                                                                                                                                                                        |       |                                                                                                                                              |  |
| <p>Effective through</p>                                                                                                                                                                        |       |                                                                                                                                              |  |
| <p>For the National Institute of Standards and Technology</p>                                                                                                                                   |       |                                                                                                                                              |  |
| <p><i>David F. Alderman</i></p>                                                                                                                                                                 |       |                                                                                                                                              |  |
| <p>NVLAP-025 (11-95)</p>                                                                                                                                                                        |       |                                                                                                                                              |  |



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CALIBRATION LABORATORIES

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**THERMODYNAMICS**

NVLAP Code: 20/T07  
Resistance Thermometry

| Temperature (°C) | Best Uncertainty (±) in m °C <sub>90%</sub> | Material/ Equilibrium State   |
|------------------|---------------------------------------------|-------------------------------|
| -189.3442        | 0.53                                        | Ar/Triple Point               |
| -38.8344         | 0.30                                        | Hg/Triple Point               |
| 0.01             | 0.16                                        | H <sub>2</sub> O/Triple Point |
| 29.7646          | 0.12                                        | Ga/Melting Point              |
| 156.5985         | 2.00                                        | In/Freezing Point             |
| 231.928          | 0.92                                        | Sn/Freezing Point             |
| 419.527          | 1.10                                        | Zn/Freezing Point             |
| 660.323          | 5.0                                         | Al/Freezing Point             |
| 961.78           | 10.0                                        | Ag/Freezing Point             |

Standard Platinum Resistance Thermometer Calibrations

|           |     |                               |
|-----------|-----|-------------------------------|
| -189.3442 | 1.1 | Ar/Triple Point               |
| -38.8344  | 0.6 | Hg/Triple Point               |
| 0.01      | 0.6 | H <sub>2</sub> O/Triple Point |

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|          |      |                   |
|----------|------|-------------------|
| 29.7646  | 0.6  | Ga/Melting Point  |
| 156.5985 | 2.6  | In/Freezing Point |
| 231.928  | 1.8  | Sn/Freezing Point |
| 419.527  | 2.0  | Zn/Freezing Point |
| 660.323  | 5.2  | Al/Freezing Point |
| 961.78   | 10.1 | Ag/Freezing Point |

Comparison Calibrations

| Temperature Range (°C) | Best Uncertainty (±) in °C <sub>90%</sub> | Type of Device |
|------------------------|-------------------------------------------|----------------|
| -80 to 0               | 0.10                                      | Thermocouples  |
| 10 to 150              | 0.10                                      | Thermocouples  |
| 150 to 660             | 0.22                                      | Thermocouples  |
| 660 to 700             | 0.47                                      | Thermocouples  |
| 700 to 1100            | 2.5                                       | Thermocouples  |
| 1100 to 1300           | 2.8                                       | Thermocouples  |
| -80 to 0               | 0.06                                      | RTD/IPRT/PRT   |
| 10 to 150              | 0.09                                      | RTD/IPRT/PRT   |
| 150 to 660             | 0.21                                      | RTD/IPRT/PRT   |

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| Type                                               | ITS-90 Temperature Range (°C) | Best Uncertainty (±) in °C <sub>90.1.9</sub> | NIST Monograph 175 Reference Table <sup>note 1.9</sup> |
|----------------------------------------------------|-------------------------------|----------------------------------------------|--------------------------------------------------------|
| Thermocouple Simulator/Readout Calibration Methods |                               |                                              |                                                        |
| K                                                  | -200 TO 1370                  | 0.10 to 0.30                                 | 7.3.3                                                  |
| J                                                  | -200 to 1200                  | 0.08 to 0.22                                 | 6.3.3                                                  |
| E                                                  | -240 to 1000                  | 0.07 to 0.38                                 | 5.3.3                                                  |
| T                                                  | -240 to 400                   | 0.09 to 0.53                                 | 9.3.3                                                  |
| R                                                  | -50 to 1750                   | 0.38 to 1.09                                 | 3.3.3                                                  |
| S                                                  | -50 to 1750                   | 0.43 to 1.02                                 | 4.3.3                                                  |
| B                                                  | 100 to 1750                   | 0.43 to 4.45                                 | 2.3.3                                                  |
| C                                                  | 0 to 2300                     | 0.24 to 0.82                                 |                                                        |

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| Type                                                | ITS-90 Temperature Range (°C)                                   | Best Uncertainty (±) in percent <sup>note 1</sup> | Remarks                                                        |
|-----------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|
| THERMODYNAMICS                                      |                                                                 |                                                   |                                                                |
| NVLAP Code: 20/T10 Vacuum                           |                                                                 |                                                   |                                                                |
| Ionization Gage Reference for direct comparison     |                                                                 |                                                   |                                                                |
|                                                     | 1.3 x 10 <sup>-6</sup> Pa < reading ≤ 1.3 x 10 <sup>-5</sup> Pa | 4.8                                               | N <sub>2</sub> ; 10 <sup>-6</sup> Torr                         |
|                                                     | 1.3 x 10 <sup>-5</sup> Pa < reading ≤ 1.3 x 10 <sup>-4</sup> Pa | 4.7                                               | N <sub>2</sub> ; 10 <sup>-7</sup> Torr                         |
|                                                     | 1.3 x 10 <sup>-4</sup> Pa < reading ≤ 1.3 x 10 <sup>-3</sup> Pa | 4.7 - 2.5                                         | N <sub>2</sub> ; 10 <sup>-6</sup> Torr                         |
| Spinning Rotor Gage Reference for direct comparison |                                                                 |                                                   |                                                                |
|                                                     | 1.3 x 10 <sup>-4</sup> Pa < reading ≤ 1.3 x 10 <sup>-3</sup> Pa | 4.3 - 2.1                                         | N <sub>2</sub> ; 10 <sup>-6</sup> Torr                         |
|                                                     | 1.3 x 10 <sup>-3</sup> Pa < reading ≤ 1.3 Pa                    | 2.1                                               | N <sub>2</sub> ; 10 <sup>-6</sup> Torr - 10 <sup>-3</sup> Torr |
|                                                     | 1.3 Pa ≤ reading ≤ 13 Pa                                        | 2.2                                               | N <sub>2</sub> ; 10 <sup>-3</sup> Torr                         |

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The logo consists of the word "NVLAP" in a large, bold, sans-serif font. Above the letters "A" and "P" are small registered trademark symbols (®). To the right of the text, there is a circular emblem containing a shield with various symbols, surrounded by the words "DEPARTMENT OF COMMERCE" and "UNITED STATES OF AMERICA".

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A circular seal featuring a central shield with a balance scale and other symbols. The shield is flanked by two eagles. The outer ring of the seal contains the text "DEPARTMENT OF COMMERCE" at the top and "UNITED STATES OF AMERICA" at the bottom.

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##### Capacitance Diaphragm Gages Reference for direct comparison

$1.3 \times 10^{-1}$  Pa ≤ reading ≤ 2.1 - 0.7

13.3 Pa

13.3 Pa ≤ reading ≤ 133.3

Pa

133.3 Pa ≤ reading ≤ 1.3

kPa

1.3 kPa ≤ reading ≤ 13.3

kPa

13.3 kPa ≤ reading ≤

133.3 kPa

##### Secondary Capacitance Diaphragm Gages Reference for direct comparison

$1.3 \times 10^{-1}$  Pa ≤ reading ≤

13.3 Pa

13.3 Pa ≤ reading ≤ 133.3

Pa

133.3 Pa ≤ reading ≤ 1.3

kPa

1.3 kPa ≤ reading ≤ 13.3

kPa

13.3 kPa ≤ reading ≤

133.3 kPa

N<sub>2</sub>; 0.1 Torr range

N<sub>2</sub>; 1 Torr range

N<sub>2</sub>; 10 Torr range

N<sub>2</sub>; 100 Torr range

N<sub>2</sub>; 1000 Torr range

N<sub>2</sub>; 0.1 Torr range

N<sub>2</sub>; 1 Torr range

N<sub>2</sub>; 10 Torr range

N<sub>2</sub>; 100 Torr range

N<sub>2</sub>; 1000 Torr range

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The seal of the United States Department of Commerce. It features a central shield containing a ship's anchor. Above the shield is a banner with the words "DEPARTMENT OF COMMERCE". The entire emblem is encircled by the words "UNITED STATES OF AMERICA" and separated from them by small stars.

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1. Expanded uncertainty with coverage factor of  $k=2$ , unless otherwise specified.
2. Approximate value. Actual value determined by test results.
3. The uncertainty ranges are the lowest and highest uncertainty values within the specified frequency range and quantity range.
4. Uncertainty consists of an appropriate combination of the measurement uncertainty (which includes all significant sources of uncertainty associated with the calibration process) and uncertainties due to use, environment, handling or variation with time over the certification interval.
5. Maximum frequency for BNC is 1000 MHz.
6. ASTM loading range classes (e.g., A, AA) are not used or reported.
7. Calibrations to 30,000 lbf versus load cells can be automated; other calibrations are manual.
8. Uncertainties listed are linearized forms  $(A+B \cdot L)$  of uncertainties calculated as root sum squares of constant and length-dependent terms  $\{A^2 + (BL)^2\}^{1/2}$ .  $A'$  and  $B'$  are calculated by fitting a straight line through the RSS uncertainty values at the upper and lower limits of range.
9. Uncertainty is dependent on the specific temperature point tested.
10. Referenced tables in NIST Monograph 175 (April, 1993) provide values for emf E output/input of the thermocouple simulator/readout and the Seebeck coefficient S for the specific temperature points within the specified ranges. The best uncertainty (at  $k=2$ ) of the emf E in  $\mu V$  is equal to the product of  $U \times S$ , where U is the best uncertainty (at  $k=2$ ) of the temperature point tested.

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**CALIBRATION LABORATORIES**

**MINNESOTA METROLOGY LABORATORY**

2277 Hwy. 36  
St. Paul, MN 55113-3800  
Ms. Carol Hockert  
Phone: 651-628-6851 Fax: 651-639-4014  
E-Mail: carol.hockert@state.mn.us

**DIMENSIONAL**

**NVLAP Code: 20/D13**  
Surveying Rods and Tapes

| Range in inches | Best Uncertainty ( $\pm$ ) in inches <sup>muc</sup> | Remarks     |
|-----------------|-----------------------------------------------------|-------------|
| 1               | 0.0028                                              | Rigid Rules |
| 2               | 0.0028                                              | Rigid Rules |
| 3               | 0.0028                                              | Rigid Rules |
| 4               | 0.0028                                              | Rigid Rules |
| 5               | 0.0028                                              | Rigid Rules |
| 6               | 0.0028                                              | Rigid Rules |
| 7               | 0.0028                                              | Rigid Rules |
| 8               | 0.0028                                              | Rigid Rules |
| 9               | 0.0028                                              | Rigid Rules |
| 10              | 0.0028                                              | Rigid Rules |
| 11              | 0.0028                                              | Rigid Rules |

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**CALIBRATION LABORATORIES**

**MINNESOTA METROLOGY LABORATORY**

|    |        |             |
|----|--------|-------------|
| 12 | 0.0028 | Rigid Rules |
| 24 | 0.0049 | Rigid Rules |
| 36 | 0.0069 | Rigid Rules |
| 48 | 0.0089 | Rigid Rules |
| 60 | 0.0109 | Rigid Rules |
| 72 | 0.0129 | Rigid Rules |

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CALIBRATION LABORATORIES

MINNESOTA METROLOGY LABORATORY

|     |        |                            |
|-----|--------|----------------------------|
| 20  | 0.0200 | Metal Tapes (Bench Method) |
| 30  | 0.0244 | Metal Tapes (Bench Method) |
| 40  | 0.0283 | Metal Tapes (Bench Method) |
| 50  | 0.0317 | Metal Tapes (Bench Method) |
| 60  | 0.0345 | Metal Tapes (Bench Method) |
| 70  | 0.0374 | Metal Tapes (Bench Method) |
| 80  | 0.0400 | Metal Tapes (Bench Method) |
| 90  | 0.0424 | Metal Tapes (Bench Method) |
| 100 | 0.0447 | Metal Tapes (Bench Method) |
| 110 | 0.0469 | Metal Tapes (Bench Method) |
| 120 | 0.0489 | Metal Tapes (Bench Method) |
| 130 | 0.0509 | Metal Tapes (Bench Method) |
| 140 | 0.0529 | Metal Tapes (Bench Method) |
| 150 | 0.0548 | Metal Tapes (Bench Method) |
| 160 | 0.0566 | Metal Tapes (Bench Method) |
| 170 | 0.0584 | Metal Tapes (Bench Method) |
| 180 | 0.0600 | Metal Tape (Bench Method)  |
| 190 | 0.0616 | Metal Tape (Bench Method)  |

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MINNESOTA METROLOGY LABORATORY

|     |        |                           |
|-----|--------|---------------------------|
| 200 | 0.0632 | Metal Tape (Bench Method) |
|-----|--------|---------------------------|

Range in feet

Best Uncertainty ( $\pm$ ) in feet<sup>m</sup>

Remarks

|    |        |                           |
|----|--------|---------------------------|
| 1  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 2  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 3  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 4  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 5  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 6  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 7  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 8  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 9  | 0.0054 | Steel Tape (Tape-to-Tape) |
| 10 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 20 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 30 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 40 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 50 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 60 | 0.0108 | Steel Tape (Tape-to-Tape) |

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| MINNESOTA METROLOGY LABORATORY |        |                           |
| 70                             | 0.0108 | Steel Tape (Tape-to-Tape) |
| 80                             | 0.0108 | Steel Tape (Tape-to-Tape) |
| 90                             | 0.0108 | Steel Tape (Tape-to-Tape) |
| 100                            | 0.0108 | Steel Tape (Tape-to-Tape) |
| 110                            | 0.0162 | Steel Tape (Tape-to-Tape) |
| 120                            | 0.0162 | Steel Tape (Tape-to-Tape) |
| 130                            | 0.0162 | Steel Tape (Tape-to-Tape) |
| 140                            | 0.0162 | Steel Tape (Tape-to-Tape) |
| 150                            | 0.0162 | Steel Tape (Tape-to-Tape) |
| 160                            | 0.0215 | Steel Tape (Tape-to-Tape) |
| 170                            | 0.0215 | Steel Tape (Tape-to-Tape) |
| 180                            | 0.0215 | Steel Tape (Tape-to-Tape) |
| 190                            | 0.0215 | Steel Tape (Tape-to-Tape) |
| 200                            | 0.0215 | Steel Tape (Tape-to-Tape) |
| 1                              | 0.0018 | Pt Tapes (Bench Method)   |
| 2                              | 0.0031 | Pt Tapes (Bench Method)   |
| 3                              | 0.0036 | Pt Tapes (Bench Method)   |

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|--------------------------------|--------|-------------------------|
| MINNESOTA METROLOGY LABORATORY |        |                         |
| 4                              | 0.0037 | Pt Tapes (Bench Method) |
| 5                              | 0.0042 | Pt Tapes (Bench Method) |
| 6                              | 0.0053 | Pt Tapes (Bench Method) |
| 7                              | 0.0044 | Pt Tapes (Bench Method) |
| 8                              | 0.0060 | Pt Tapes (Bench Method) |
| 9                              | 0.0074 | Pt Tapes (Bench Method) |
| 10                             | 0.0066 | Pt Tapes (Bench Method) |

**MECHANICAL**

NVLAP Code: 20/M08

Mass

| Range | Best Uncertainty ( $\pm$ <sup>year</sup> ) | Remarks          |
|-------|--------------------------------------------|------------------|
| 50 kg | 101.4 mg                                   | Accuracy Class I |
| 30 kg | 17.2 mg                                    | Accuracy Class I |
| 20 kg | 11.7 mg                                    | Accuracy Class I |
| 10 kg | 1.7 mg                                     | Accuracy Class I |
| 5 kg  | 0.22 mg                                    | Accuracy Class I |
| 3 kg  | 0.14 mg                                    | Accuracy Class I |

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| CALIBRATION LABORATORIES |           | MINNESOTA METROLOGY LABORATORY |  |
|--------------------------|-----------|--------------------------------|--|
| 2 kg                     | 0.10 mg   | Accuracy Class I               |  |
| 1 kg                     | 0.04 mg   | Accuracy Class I               |  |
| 500 g                    | 0.025 mg  | Accuracy Class I               |  |
| 300 g                    | 0.018 mg  | Accuracy Class I               |  |
| 200 g                    | 0.015 mg  | Accuracy Class I               |  |
| 100 g                    | 0.014 mg  | Accuracy Class I               |  |
| 50 g                     | 0.011 mg  | Accuracy Class I               |  |
| 30 g                     | 0.008 mg  | Accuracy Class I               |  |
| 20 g                     | 0.0064 mg | Accuracy Class I               |  |
| 10 g                     | 0.0065 mg | Accuracy Class I               |  |
| 5 g                      | 0.0033 mg | Accuracy Class I               |  |
| 3 g                      | 0.0021 mg | Accuracy Class I               |  |
| 2 g                      | 0.0015 mg | Accuracy Class I               |  |
| 1 g                      | 0.0012 mg | Accuracy Class I               |  |
| 500 mg                   | 0.0013 mg | Accuracy Class I               |  |
| 300 mg                   | 0.0011 mg | Accuracy Class I               |  |
| 200 mg                   | 0.0011 mg | Accuracy Class I               |  |
| 100 mg                   | 0.0014 mg | Accuracy Class I               |  |

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| CALIBRATION LABORATORIES |           | MINNESOTA METROLOGY LABORATORY |  |
|--------------------------|-----------|--------------------------------|--|
| 50 mg                    | 0.0008 mg | Accuracy Class I               |  |
| 30 mg                    | 0.0006 mg | Accuracy Class I               |  |
| 20 mg                    | 0.0005 mg | Accuracy Class I               |  |
| 10 mg                    | 0.0006 mg | Accuracy Class I               |  |
| 5 mg                     | 0.0003 mg | Accuracy Class I               |  |
| 3 mg                     | 0.0003 mg | Accuracy Class I               |  |
| 2 mg                     | 0.0002 mg | Accuracy Class I               |  |
| 1 mg                     | 0.0003 mg | Accuracy Class I               |  |
| 1000 kg                  | 10.4 g    | Accuracy Class II              |  |
| 500 kg                   | 1.5 g     | Accuracy Class II              |  |
| 300 kg                   | 1.5 g     | Accuracy Class II              |  |
| 200 kg                   | 1.5 g     | Accuracy Class II              |  |
| 100 kg                   | 1.3 g     | Accuracy Class II              |  |
| 50 kg                    | 112.8 mg  | Accuracy Class II              |  |
| 30 kg                    | 34.3 mg   | Accuracy Class II              |  |
| 20 kg                    | 22.3 mg   | Accuracy Class II              |  |
| 10 kg                    | 5.1 mg    | Accuracy Class II              |  |

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MINNESOTA METROLOGY LABORATORY

**CALIBRATION LABORATORIES**

|        |           |                   |
|--------|-----------|-------------------|
| 200 mg | 0.0016 mg | Accuracy Class II |
| 100 mg | 0.0018 mg | Accuracy Class II |
| 50 mg  | 0.0014 mg | Accuracy Class II |
| 30 mg  | 0.0013 mg | Accuracy Class II |
| 20 mg  | 0.0012 mg | Accuracy Class II |
| 10 mg  | 0.0013 mg | Accuracy Class II |
| 5 mg   | 0.0012 mg | Accuracy Class II |
| 3 mg   | 0.0012 mg | Accuracy Class II |
| 2 mg   | 0.0012 mg | Accuracy Class II |
| 1 mg   | 0.0012 mg | Accuracy Class II |

|         |          |                |
|---------|----------|----------------|
| 1000 kg | 13.6 g   | Tolerance Test |
| 500 kg  | 8.1 g    | Tolerance Test |
| 300 kg  | 6.1 g    | Tolerance Test |
| 200 kg  | 4.8 g    | Tolerance Test |
| 100 kg  | 1.7 g    | Tolerance Test |
| 50 kg   | 359.7 mg | Tolerance Test |
| 30 kg   | 242.6 mg | Tolerance Test |

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|       |          |                |
|-------|----------|----------------|
| 20 kg | 68.3 mg  | Tolerance Test |
| 10 kg | 46.5 mg  | Tolerance Test |
| 5 kg  | 7.78 mg  | Tolerance Test |
| 3 kg  | 5.87 mg  | Tolerance Test |
| 2 kg  | 4.43 mg  | Tolerance Test |
| 1 kg  | 2.39 mg  | Tolerance Test |
| 500 g | 2.138 mg | Tolerance Test |
| 300 g | 1.674 mg | Tolerance Test |
| 200 g | 0.326 mg | Tolerance Test |
| 100 g | 0.206 mg | Tolerance Test |
| 50 g  | 0.122 mg | Tolerance Test |
| 30 g  | 0.100 mg | Tolerance Test |
| 20 g  | 0.067 mg | Tolerance Test |
| 10 g  | 0.056 mg | Tolerance Test |
| 5 g   | 0.049 mg | Tolerance Test |
| 3 g   | 0.047 mg | Tolerance Test |
| 2 g   | 0.045 mg | Tolerance Test |
| 1 g   | 0.045 mg | Tolerance Test |

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|        |          |                |
|--------|----------|----------------|
| 500 mg | 0.022 mg | Tolerance Test |
| 300 mg | 0.022 mg | Tolerance Test |
| 200 mg | 0.022 mg | Tolerance Test |
| 100 mg | 0.020 mg | Tolerance Test |
| 50 mg  | 0.019 mg | Tolerance Test |
| 30 mg  | 0.018 mg | Tolerance Test |
| 20 mg  | 0.015 mg | Tolerance Test |
| 10 mg  | 0.014 mg | Tolerance Test |
| 5 mg   | 0.014 mg | Tolerance Test |
| 3 mg   | 0.014 mg | Tolerance Test |
| 2 mg   | 0.012 mg | Tolerance Test |
| 1 mg   | 0.012 mg | Tolerance Test |

NVLAP Code: 20/M12  
Volume

| Range    | Best Uncertainty ( $\pm$ ) <sup>(unc. 1)</sup> | Remarks            |
|----------|------------------------------------------------|--------------------|
| 10000 ml | 0.6248 ml                                      | Gravimetric Method |
| 1000 ml  | 0.0628 ml                                      | Gravimetric Method |
| 100 ml   | 0.00617 ml                                     | Gravimetric Method |

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MINNESOTA METROLOGY LABORATORY

| Mass Range                                           | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks |
|------------------------------------------------------|-----------------------------------------|---------|
| Density in the Range of 2.7 to 9.4 g/cm <sup>3</sup> |                                         |         |
| 5 kg                                                 | 0.00058 g/cm <sup>3</sup>               |         |
| 3 kg                                                 | 0.00051 g/cm <sup>3</sup>               |         |
| 2 kg                                                 | 0.00039 g/cm <sup>3</sup>               |         |
| 1 kg                                                 | 0.00017 g/cm <sup>3</sup>               |         |
| 500 g                                                | 0.00188 g/cm <sup>3</sup>               |         |

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MINNESOTA METROLOGY LABORATORY

| Range                       | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks         |
|-----------------------------|-----------------------------------------|-----------------|
| Triple Point of Water (TPW) | 0.0303 °C                               | Liquid-in-glass |
| 10 °C                       | 0.0731 °C                               | Liquid-in-glass |
| 20 °C                       | 0.0731 °C                               | Liquid-in-glass |
| 30 °C                       | 0.0731 °C                               | Liquid-in-glass |
| 40 °C                       | 0.0731 °C                               | Liquid-in-glass |
| 50 °C                       | 0.0731 °C                               | Liquid-in-glass |
| 60 °C                       | 0.0731 °C                               | Liquid-in-glass |

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|        |           |                 |
|--------|-----------|-----------------|
| 70 °C  | 0.0731 °C | Liquid-in-glass |
| 80 °C  | 0.0731 °C | Liquid-in-glass |
| 90 °C  | 0.0731 °C | Liquid-in-glass |
| 100 °C | 0.0731 °C | Liquid-in-glass |
| 150 °C | 0.0731 °C | Liquid-in-glass |
| 200 °C | 0.0760 °C | Liquid-in-glass |
| 250 °C | 0.0760 °C | Liquid-in-glass |
| 300 °C | 0.0760 °C | Liquid-in-glass |
| 350 °C | 0.0760 °C | Liquid-in-glass |
| 400 °C | 0.0760 °C | Liquid-in-glass |
| 450 °C | 0.0760 °C | Liquid-in-glass |
| 500 °C | 0.0760 °C | Liquid-in-glass |

NVLAP Code: 20/T07  
Resistance Thermometry

| Range | Best Uncertainty ( $\pm$ ) <sup>new</sup> 1 | Remarks     |
|-------|---------------------------------------------|-------------|
| 0 °C  | 0.0089 °C                                   | Thermistors |
| 10 °C | 0.0089 °C                                   | Thermistors |

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|                                                                                                                       |                                                                                                                                                          |                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>20 °C</p> <p>30 °C</p> <p>40 °C</p> <p>50 °C</p> <p>60 °C</p> <p>70 °C</p> <p>80 °C</p> <p>90 °C</p> <p>100 °C</p> | <p>0.0089 °C</p> <p>0.0089 °C</p> <p>0.0089 °C</p> <p>0.0089 °C</p> <p>0.0090 °C</p> <p>0.0093 °C</p> <p>0.0103 °C</p> <p>0.0137 °C</p> <p>0.0226 °C</p> | <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> <p>Thermistors</p> |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                         |                                        |                                  |
|-----------------------------------------|----------------------------------------|----------------------------------|
| <p>TPW</p> <p>Tin FP</p> <p>Zinc FP</p> | <p>0.004</p> <p>0.005</p> <p>0.007</p> | <p>PRT</p> <p>PRT</p> <p>PRT</p> |
|-----------------------------------------|----------------------------------------|----------------------------------|

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1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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CALIBRATION LABORATORIES

STATE OF VIRGINIA METROLOGY LAB

1 North 14th Street, Room 025  
Richmond, VA 23219-3691  
Mr. Michael J. Kramer  
Phone: 804-786-0479 Fax: 804-371-0351  
E-Mail: mkramer@vdaes.state.va.us

---

**DIMENSIONAL**

NVLAP Code: 20/D13

Survey Rods and Tapes

| Range          | Best Uncertainty ( $\pm y_{\text{year}}$ ) | Remarks                    |
|----------------|--------------------------------------------|----------------------------|
| 2 to 10 ft     | 0.0027 inches                              | Metal Tapes (Bench Method) |
| 11 to 25 ft    | 0.003954 inches                            | Metal Tapes (Bench Method) |
| 26 to 50 ft    | 0.00712 inches                             | Metal Tapes (Bench Method) |
| 51 to 75 ft    | 0.01026 inches                             | Metal Tapes (Bench Method) |
| 76 to 100 ft   | 0.01366 inches                             | Metal Tapes (Bench Method) |
| 1 to 18 inches | 0.0076 inches                              | Rigid Rules                |

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**TIME AND FREQUENCY**

NVLAP Code: 20/F01

Frequency

| Range             | Best Uncertainty ( $\pm y_{\text{year}}$ ) | Remarks                                             |
|-------------------|--------------------------------------------|-----------------------------------------------------|
| 1000 to 10,000 Hz | 0.02 %                                     | Tuning forks at frequencies used in law enforcement |

---

**MECHANICAL**

NVLAP Code: 20/M08

Mass

| Range | Best Uncertainty ( $\pm y_{\text{year}}$ ) | Remarks             |
|-------|--------------------------------------------|---------------------|
| 30 kg | 219.93 mg                                  | Tolerance Testing   |
| 20 kg | 213.34 mg                                  | Tolerance Testing   |
| 10 kg | 132.73 mg                                  | Tolerance Testing   |
| 5 kg  | 24.26 mg                                   | Tolerance Testing   |
| 3 kg  | 5.93 mg                                    | Tolerance Testing   |
| 2 kg  | 4.98 mg                                    | Tolerance Testing   |
| 1 kg  | 0.146 mg                                   | Double Substitution |

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|        |          |                     |
|--------|----------|---------------------|
| 500 g  | 0.357 mg | Double Substitution |
| 300 g  | 0.355 mg | Double Substitution |
| 200 g  | 0.349 mg | Double Substitution |
| 100 g  | 0.059 mg | Double Substitution |
| 50 g   | 0.052 mg | Double Substitution |
| 30 g   | 0.049 mg | Double Substitution |
| 20 g   | 0.047 mg | Double Substitution |
| 10 g   | 0.014 mg | Double Substitution |
| 5 g    | 0.010 mg | Double Substitution |
| 3 g    | 0.020 mg | Double Substitution |
| 2 g    | 0.008 mg | Double Substitution |
| 1 g    | 0.022 mg | Double Substitution |
| 500 mg | 0.012 mg | Double Substitution |
| 300 mg | 0.008 mg | Double Substitution |
| 200 mg | 0.007 mg | Double Substitution |
| 100 mg | 0.007 mg | Double Substitution |
| 50 mg  | 0.006 mg | Double Substitution |
| 30 mg  | 0.006 mg | Double Substitution |

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## Scope of Accreditation

**CALIBRATION LABORATORIES**

STATE OF VIRGINIA METROLOGY LAB

|          |           |                     |
|----------|-----------|---------------------|
| 20 mg    | 0.006 mg  | Double Substitution |
| 10 mg    | 0.003 mg  | Double Substitution |
| 5 mg     | 0.003 mg  | Double Substitution |
| 3 mg     | 0.003 mg  | Double Substitution |
| 2 mg     | 0.003 mg  | Double Substitution |
| 1 mg     | 0.003 mg  | Double Substitution |
| 6000 lbs | 0.039 lbs | Tolerance Testing   |
| 5000 lbs | 0.036 lbs | Tolerance Testing   |
| 4000 lbs | 0.034 lbs | Tolerance Testing   |
| 3000 lbs | 0.032 lbs | Tolerance Testing   |
| 2000 lbs | 0.029 lbs | Tolerance Testing   |
| 1000 lbs | 0.010 lbs | Tolerance Testing   |
| 500 lbs  | 0.005 lbs | Tolerance Testing   |
| 50 lbs   | 215.21 mg | Tolerance Testing   |
| 30 lbs   | 136.55 mg | Tolerance Testing   |
| 20 lbs   | 135.22 mg | Tolerance Testing   |
| 10 lbs   | 22.28 mg  | Tolerance Testing   |

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MECHANICAL

NVLAP Code: 20/M12

Volume and Density

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| Range           | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks         |
|-----------------|-----------------------------------------|-----------------|
| 1.0 fluid ounce | 0.40 minim                              | Volume Transfer |
| 1.0 gill        | 0.82 minim                              | Volume Transfer |
| 0.5 pint        | 3.89 minim                              | Volume Transfer |
| 1.0 pint        | 4.92 minim                              | Volume Transfer |
| 1.0 quart       | 4.48 minim                              | Volume Transfer |
| 0.5 gallon      | 5.2 minim                               | Volume Transfer |
| 1.0 gallon      | 16.74 minim                             | Volume Transfer |
| 10 mL           | 0.036 mL                                | Volume Transfer |
| 50 mL           | 0.041 mL                                | Volume Transfer |
| 100 mL          | 0.055 mL                                | Volume Transfer |
| 200 mL          | 0.053 mL                                | Volume Transfer |
| 500 mL          | 0.241 mL                                | Volume Transfer |
| 1 Liter         | 0.41 mL                                 | Volume Transfer |

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MECHANICAL

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| Range           | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks         |
|-----------------|-----------------------------------------|-----------------|
| 1.0 fluid ounce | 0.40 minim                              | Volume Transfer |
| 1.0 gill        | 0.82 minim                              | Volume Transfer |
| 0.5 pint        | 3.89 minim                              | Volume Transfer |
| 1.0 pint        | 4.92 minim                              | Volume Transfer |
| 1.0 quart       | 4.48 minim                              | Volume Transfer |
| 0.5 gallon      | 5.2 minim                               | Volume Transfer |
| 1.0 gallon      | 16.74 minim                             | Volume Transfer |
| 10 mL           | 0.036 mL                                | Volume Transfer |
| 50 mL           | 0.041 mL                                | Volume Transfer |
| 100 mL          | 0.055 mL                                | Volume Transfer |
| 200 mL          | 0.053 mL                                | Volume Transfer |
| 500 mL          | 0.241 mL                                | Volume Transfer |
| 1 Liter         | 0.41 mL                                 | Volume Transfer |

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| 2 Liter      | 0.32 mL                | Volume Transfer |  |
|--------------|------------------------|-----------------|--|
| 5 Liter      | 0.59 mL                | Volume Transfer |  |
| 5 gallons    | 0.262 in <sup>3</sup>  | Volume Transfer |  |
| 50 gallons   | 9.64 in <sup>3</sup>   | Volume Transfer |  |
| 100 gallons  | 14.26 in <sup>3</sup>  | Volume Transfer |  |
| 200 gallons  | 26.22 in <sup>3</sup>  | Volume Transfer |  |
| 500 gallons  | 55.60 in <sup>3</sup>  | Volume Transfer |  |
| 1000 gallons | 94.04 in <sup>3</sup>  | Volume Transfer |  |
| 1500 gallons | 134.8 in <sup>3</sup>  | Volume Transfer |  |
| 2000 gallons | 172.82 in <sup>3</sup> | Volume Transfer |  |

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NVLAP LAB CODE 105007-0

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STATE OF VIRGINIA METROLOGY LAB

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CALIBRATION LABORATORIES

THERMODYNAMICS

NVLAP Code: 20/T03  
Laboratory Thermometers

| Range        | Best Uncertainty ( $\pm$ year) | Remarks         |
|--------------|--------------------------------|-----------------|
| -8 to 32 °C  | 0.122 °C                       | Liquid in Glass |
| 33 to 55 °C  | 0.122 °C                       | Liquid in Glass |
| 56 to 80 °C  | 0.163 °C                       | Liquid in Glass |
| 81 to 105 °C | 0.097 °C                       | Liquid in Glass |

September 30, 2001

Effective through

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For the National Institute of Standards and Technology

NVLAP-02S (11-95)

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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ISO/IEC GUIDE 25:1990  
ANSI/NCCL Z540-1-1994  
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Revised 10/27/2000

CALIBRATION LABORATORIES

HENRY TROEMNER, LLC  
201 Wolf Drive  
P.O. Box 87  
Thorofare, NJ 08086-0087  
Mr. Wilbert D. Abele  
Phone: 856-686-1600 Fax: 856-686-1601  
E-Mail: troemner@troemner.com  
URL: http://www.troemner.com

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NVLAP LAB CODE 105013-0

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ISO 9002:1987

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Revised 10/27/2000

CALIBRATION LABORATORIES

HENRY TROEMNER, LLC

MECHANICAL  
NVLAP Code: 20/M08  
Mass

| Range | Best Uncertainty ( $\pm$ ) <sup>95%</sup> $\pm$ 3 | Remarks |
|-------|---------------------------------------------------|---------|
| 30 kg | 10.0 mg                                           | Class I |
| 20 kg | 4.0 mg                                            | Class I |
| 10 kg | 1.0 mg                                            | Class I |
| 5 kg  | 0.5 mg                                            | Class I |
| 3 kg  | 0.3 mg                                            | Class I |
| 2 kg  | 0.2 mg                                            | Class I |
| 1 kg  | 0.10 mg                                           | Class I |
| 500 g | 0.05 mg                                           | Class I |
| 300 g | 0.04 mg                                           | Class I |
| 200 g | 0.033 mg                                          | Class I |

September 30, 2001

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For the National Institute of Standards and Technology

NVLAP-025 (11-95)

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CALIBRATION LABORATORIES

HENRY TROEMNER, LLC

|        |           |         |
|--------|-----------|---------|
| 100 g  | 0.017 mg  | Class I |
| 50 g   | 0.010 mg  | Class I |
| 30 g   | 0.006 mg  | Class I |
| 20 g   | 0.005 mg  | Class I |
| 10 g   | 0.004 mg  | Class I |
| 5 g    | 0.002 mg  | Class I |
| 3 g    | 0.002 mg  | Class I |
| 2 g    | 0.0015 mg | Class I |
| 1 g    | 0.0015 mg | Class I |
| 500 mg | 0.0006 mg | Class I |
| 300 mg | 0.0006 mg | Class I |
| 200 mg | 0.0006 mg | Class I |
| 100 mg | 0.0006 mg | Class I |
| 50 mg  | 0.0006 mg | Class I |
| 30 mg  | 0.0006 mg | Class I |
| 20 mg  | 0.0006 mg | Class I |
| 10 mg  | 0.0006 mg | Class I |
| 5 mg   | 0.0006 mg | Class I |

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# INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued



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**Scope of Accreditation**

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CALIBRATION LABORATORIES

NVLAP LAB CODE 105013-0

HENRY TROEMNER, LLC

|         |           |           |
|---------|-----------|-----------|
| 3 mg    | 0.0006 mg | Class I   |
| 2 mg    | 0.0006 mg | Class I   |
| 1 mg    | 0.0006 mg | Class I   |
| 1000 kg | 10.34 g   | Class III |
| 500 kg  | 5.03 g    | Class III |
| 200 kg  | 3.26 g    | Class III |
| 100 kg  | 1.64 g    | Class III |
| 50 kg   | 0.087 g   | Class III |
| 30 kg   | 0.072 g   | Class III |
| 25 kg   | 0.066 g   | Class III |
| 20 kg   | 0.057 g   | Class III |
| 10 kg   | 0.024 g   | Class III |
| 5 kg    | 18.30 mg  | Class III |
| 3 kg    | 16.77 mg  | Class III |
| 2 kg    | 11.52 mg  | Class III |
| 1 kg    | 10.09 mg  | Class III |
| 500 g   | 10.02 mg  | Class III |
| 300 g   | 10.01 mg  | Class III |

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**Scope of Accreditation**

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CALIBRATION LABORATORIES

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HENRY TROEMNER, LLC

|         |           |           |
|---------|-----------|-----------|
| 3000 lb | 16.791 g  | Class III |
| 2500 lb | 13.551 g  | Class III |
| 2000 lb | 10.312 g  | Class III |
| 1000 lb | 5.178 g   | Class III |
| 500 lb  | 3.841 g   | Class III |
| 100 lb  | 0.088 g   | Class III |
| 50 lb   | 0.054 g   | Class III |
| 30 lb   | 0.046 g   | Class III |
| 25 lb   | 0.035 g   | Class III |
| 20 lb   | 0.029 g   | Class III |
| 10 lb   | 0.018 g   | Class III |
| 5 lb    | 10.572 mg | Class III |
| 3 lb    | 10.127 mg | Class III |
| 2 lb    | 10.093 mg | Class III |
| 1 lb    | 10.019 mg | Class III |
| 0.5 lb  | 10.005 mg | Class III |

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CALIBRATION LABORATORIES

NVLAP LAB CODE 105013-0

HENRY TROEMNER, LLC

NVLAP Code: 20/M12  
Volume - Pipettes

| Test Volume in $\mu\text{L}^{\text{nom}}$ | Best Uncertainty ( $\pm$ ) in $\mu\text{L}^{\text{nom}}$ | Remarks |
|-------------------------------------------|----------------------------------------------------------|---------|
| 0.2                                       | 0.0477                                                   |         |
| 0.5                                       | 0.0422                                                   |         |
| 1.0                                       | 0.0469                                                   |         |
| 2.5                                       | 0.0860                                                   |         |
| 5.0                                       | 0.0983                                                   |         |
| 10                                        | 0.32                                                     |         |
| 50                                        | 0.52                                                     |         |
| 100                                       | 0.45                                                     |         |
| 500                                       | 0.90                                                     |         |
| 1000                                      | 2.18                                                     |         |
| 2500                                      | 18.75                                                    |         |

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CALIBRATION LABORATORIES

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HENRY TROEMNER, LLC

Density in the Range of 2.69 to 8.5 g/cm<sup>3</sup>

| Mass Range | Best Uncertainty ( $\pm$ ) g/cm <sup>3</sup> | Remarks |
|------------|----------------------------------------------|---------|
| 5 kg       | 0.0056 g/cm <sup>3</sup>                     |         |
| 3 kg       | 0.0041 g/cm <sup>3</sup>                     |         |
| 2 kg       | 0.0034 g/cm <sup>3</sup>                     |         |
| 1 kg       | 0.0014 g/cm <sup>3</sup>                     |         |
| 500 g      | 0.0064 g/cm <sup>3</sup>                     |         |
| 300 g      | 0.0075 g/cm <sup>3</sup>                     |         |
| 200 g      | 0.0053 g/cm <sup>3</sup>                     |         |
| 100 g      | 0.0031 g/cm <sup>3</sup>                     |         |
| 50 g       | 0.0030 g/cm <sup>3</sup>                     |         |
| 30 g       | 0.0067 g/cm <sup>3</sup>                     |         |
| 20 g       | 0.0029 g/cm <sup>3</sup>                     |         |
| 10 g       | 0.0065 g/cm <sup>3</sup>                     |         |
| 5 g        | 0.0170 g/cm <sup>3</sup>                     |         |
| 3 g        | 0.0148 g/cm <sup>3</sup>                     |         |
| 2 g        | 0.0127 g/cm <sup>3</sup>                     |         |
| 1 g        | 0.0156 g/cm <sup>3</sup>                     |         |

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INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

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## Scope of Accreditation

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**CALIBRATION LABORATORIES**

NVLAP LAB CODE 105013-0

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**HENRY TROEMNER, LLC**

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1. Represents expanded uncertainty using a coverage factor,  $k=2$ .

2. Approximate value. Actual value determined by the test statistics.

3. Uncertainties at specified test volumes may be greater depending on the range of the unit under test.

4. It is recommended that adjustable volume pipettes not be used below 10% of capacity.

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September 30, 2001

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ISO 9002:1987

## Scope of Accreditation

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CALIBRATION LABORATORIES

NVLAP LAB CODE 105014-0

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SOUTHERN CALIFORNIA EDISON COMPANY  
7300 Fenwick Lane  
Westminster, CA 92683  
Mr. Jack Burdick  
Phone: 714-895-0422 Fax: 714-895-0686  
E-Mail: burdickj@sec.com

Best Uncertainty ( $\pm$ ) <sup>new 1 & 2</sup>

Remarks

| Range             | Best Uncertainty ( $\pm$ ) <sup>new 1 &amp; 2</sup> | Remarks           |
|-------------------|-----------------------------------------------------|-------------------|
| thru 1 in         | 3.0 $\mu$ m                                         | Direct Comparison |
| > 1.0 thru 6.0 in | 3.0 $\mu$ m + 1 $\mu$ m/in                          | Direct Comparison |
| 7.0 in            | 7.0 $\mu$ m                                         | Direct Comparison |
| 8.0 in            | 7.0 $\mu$ m                                         | Direct Comparison |
| 10.0 in           | 7.0 $\mu$ m                                         | Direct Comparison |
| 12.0 in           | 7.0 $\mu$ m                                         | Direct Comparison |
| 16.0 in           | 10.0 $\mu$ m                                        | Direct Comparison |
| 20.0 in           | 10.0 $\mu$ m                                        | Direct Comparison |

**DIMENSIONAL**  
NVLAP Code: 20/D03  
Gage Blocks

March 31, 2001

*David Z. Alderman*

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**Scope of Accreditation**

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CALIBRATION LABORATORIES

SOUTHERN CALIFORNIA EDISON COMPANY

**MECHANICAL**

NVLAP Code: 20/M08

Mass

| Range | Best Uncertainty ( $\pm$ ) <small>95% 1 s</small> |
|-------|---------------------------------------------------|
| 30 kg | 53.4 mg                                           |
| 20 kg | 28.7 mg                                           |
| 10 kg | 4.4 mg                                            |
| 5 kg  | 1.6 mg                                            |
| 2 kg  | 1.6 mg                                            |
| 1 kg  | 0.145 mg                                          |
| 500 g | 0.086 mg                                          |
| 200 g | 0.046 mg                                          |
| 100 g | 0.032 mg                                          |
| 50 g  | 0.0202 mg                                         |
| 20 g  | 0.0095 mg                                         |
| 10 g  | 0.0092 mg                                         |
| 5 g   | 0.0048 mg                                         |
| 2 g   | 0.0030 mg                                         |

March 31, 2001

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**Scope of Accreditation**

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CALIBRATION LABORATORIES

SOUTHERN CALIFORNIA EDISON COMPANY

|        |           |
|--------|-----------|
| 1 g    | 0.0023 mg |
| 500 mg | 0.0015 mg |
| 200 mg | 0.0019 mg |
| 100 mg | 0.0006 mg |
| 50 mg  | 0.0017 mg |
| 20 mg  | 0.0019 mg |
| 10 mg  | 0.0006 mg |
| 5 mg   | 0.0006 mg |
| 2 mg   | 0.0009 mg |
| 1 mg   | 0.0005 mg |

March 31, 2001

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INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

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CALIBRATION LABORATORIES

SOUTHERN CALIFORNIA EDISON COMPANY

ELECTROMAGNETICS - DC/LOW FREQUENCY  
NVLAP Code: 20/E05  
DC Resistance

| Nominal Value in Ohms | Best Uncertainty ( $\pm$ ) in ppm <sup>see 1</sup> | Remarks |
|-----------------------|----------------------------------------------------|---------|
| 1                     | 0.10                                               |         |
| 10                    | 0.35                                               |         |
| 25                    | 0.40                                               |         |
| 100                   | 0.40                                               |         |
| 1 k                   | 0.45                                               |         |
| 10 k                  | 0.50                                               |         |
| 100 k                 | 1.3                                                |         |
| 1 M                   | 2.0                                                |         |
| 10 M                  | 2.5                                                |         |

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CALIBRATION LABORATORIES

SOUTHERN CALIFORNIA EDISON COMPANY

ELECTROMAGNETICS - DC/LOW FREQUENCY  
NVLAP Code: 20/E06  
DC Voltage

| Range    | Best Uncertainty ( $\pm$ ) <sup>see 1 &amp; 2</sup> | Remarks                              |
|----------|-----------------------------------------------------|--------------------------------------|
| 1.018 V  | 0.35 ppm                                            | Reference Cells                      |
| 10.00 V  | 0.28 ppm                                            |                                      |
| 1.000 V  | 0.33 ppm                                            |                                      |
| 100 mV   | 2.6 ppm                                             | Meters and Multifunction Calibrators |
| 1.0 V    | 1.1 ppm                                             |                                      |
| 10.0 V   | 1.0 ppm                                             |                                      |
| 100.0 V  | 1.1 ppm                                             |                                      |
| 1000.0 V | 1.2 ppm                                             |                                      |

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NVLAP-025 (11-95)

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .  
2. Approximate value. Actual value determined by the test statistics.

  
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 DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

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**CALIBRATION LABORATORIES**  
 NVLAP LAB CODE 105016-0

**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**  
 6920 Seaway Boulevard, M/S 169G  
 Everett, WA 98206-9090  
 Mr. David Deaver  
 Phone: 425-356-6434 Fax: 425-356-5649  
 E-Mail: david.deaver@fluke.com  
 URL: [http://www.fluke.com/service/acc\\_usa.asp](http://www.fluke.com/service/acc_usa.asp)

**ELECTROMAGNETICS - DC/LOW FREQUENCY**  
 NVLAP Code: 20/E01  
 AC/DC Difference for Low Frequency Voltage  
*Best Uncertainty ( $\pm$ ) in ppm<sup>95</sup> vs. f*  
*Frequency in Hertz*

| Range  | Level  | 10  | 20  | 40  | 100 | 1k  | 10k | 20k  | 50k | 100k | 300k | 500k | 800k | 1M   |
|--------|--------|-----|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|
| 22 mV  | 2 mV   | 320 | 890 | 610 | 900 | 320 | 760 | 1050 | 330 | 1110 | 1230 | 2020 | 2520 | 2900 |
| 22 mV  | 6 mV   | 220 | 260 | 130 | 120 | 190 | 150 | 130  | 310 | 510  | 700  | 900  | 330  | 370  |
| 22 mV  | 10 mV  | 90  | 220 | 70  | 160 | 230 | 110 | 120  | 190 | 330  | 220  | 630  | 350  | 380  |
| 22 mV  | 20 mV  | 80  | 65  | 60  | 60  | 60  | 60  | 60   | 160 | 260  | 350  | 500  | 330  | 360  |
| 220 mV | 20 mV  | 110 | 110 | 76  | 67  | 60  | 60  | 66   | 140 | 240  | 280  | 400  | 450  | 580  |
| 220 mV | 60 mV  | 75  | 80  | 57  | 45  | 32  | 33  | 38   | 60  | 120  | 230  | 280  | 330  | 370  |
| 220 mV | 100 mV | 35  | 70  | 17  | 41  | 32  | 18  | 22   | 40  | 70   | 140  | 150  | 210  | 190  |

June 30, 2001  
 Effective through

*David F. Alderman*  
 For the National Institute of Standards and Technology

NVLAP-025 (11-95)

  
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**CALIBRATION LABORATORIES**  
 NVLAP LAB CODE 105016-0

**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

|        |        |     |    |    |    |    |    |    |    |    |     |     |     |     |     |
|--------|--------|-----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| 220 mV | 200 mV | 35  | 25 | 17 | 17 | 17 | 17 | 17 | 17 | 28 | 60  | 100 | 110 | 190 | 190 |
| 700 mV | 200 mV | 35  | 55 | 23 | 30 | 27 | 17 | 23 | 23 | 60 | 110 | 140 | 210 | 190 |     |
| 700 mV | 600 mV | 20  | 68 | 17 | 7  | 16 | 6  | 7  | 10 | 10 | 80  | 80  | 80  | 80  |     |
| 2.2 V  | 0.6 V  | 20  | 43 | 24 | 10 | 8  | 10 | 9  | 18 | 10 | 100 | 100 | 100 | 100 | 80  |
| 2.2 V  | 1 V    | 120 | 35 | 14 | 8  | 11 | 11 | 6  | 25 | 10 | 80  | 100 | 100 | 100 | 80  |
| 2.2 V  | 2 V    | 20  | 16 | 21 | 7  | 6  | 6  | 6  | 16 | 10 | 95  | 100 | 80  | 80  |     |
| 7 V    | 2 V    | 25  | 37 | 26 | 18 | 14 | 14 | 14 | 26 | 12 | 100 | 110 | 100 | 100 | 100 |
| 7 V    | 3 V    | 85  | 36 | 25 | 17 | 15 | 15 | 16 | 40 | 43 | 95  | 100 | 100 | 100 | 100 |
| 7 V    | 6 V    | 25  | 17 | 15 | 8  | 6  | 7  | 7  | 22 | 15 | 100 | 100 | 80  | 80  |     |
| 22 V   | 6 V    | 115 | 35 | 27 | 8  | 9  | 18 | 15 | 25 | 15 | 80  | 80  | 130 | 130 |     |
| 22 V   | 10 V   | 20  | 42 | 13 | 8  | 7  | 7  | 8  | 10 | 15 | 80  | 100 | 100 | 100 |     |
| 22 V   | 20 V   | 20  | 20 | 16 | 8  | 7  | 7  | 7  | 10 | 15 | 100 | 110 | 80  | 80  |     |
| 70 V   | 20 V   | 30  | 41 | 24 | 19 | 12 | 10 | 16 | 35 | 50 | 130 |     |     |     |     |
| 70 V   | 30 V   | 80  | 36 | 24 | 18 | 19 | 17 | 22 | 40 | 56 | 100 |     |     |     |     |
| 70 V   | 60 V   | 25  | 20 | 17 | 10 | 10 | 13 | 10 | 40 | 20 | 80  |     |     |     |     |
| 220 V  | 60 V   | 120 | 40 | 19 | 17 | 17 | 18 | 30 | 40 | 50 | 120 |     |     |     |     |
| 220 V  | 100 V  | 140 | 45 | 19 | 12 | 10 | 10 | 10 | 40 | 20 |     |     |     |     |     |
| 220 V  | 200 V  | 25  | 25 | 15 | 14 | 11 | 11 | 11 | 40 | 25 |     |     |     |     |     |

June 30, 2001  
 Effective through

*David F. Alderman*  
 For the National Institute of Standards and Technology

NVLAP-025 (11-95)

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**Scope of Accreditation**



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CALIBRATION LABORATORIES

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

NVLAP Code: 20/E01  
AC/DC Difference for High Frequency Thermal Converters

| Range | 2 M  | 10 M | 20 M | 30 M | 50 M | 100 M |
|-------|------|------|------|------|------|-------|
| 0.5 V | 0.1  | 0.1  | 0.2  | 0.2  | 0.5  | 1.0   |
| 1 V   | 0.1  | 0.1  | 0.2  | 0.2  | 0.5  | 1.0   |
| 2 V   | 0.08 | 0.08 | 0.16 | 0.16 | 0.4  | 0.8   |
| 3 V   | 0.08 | 0.1  | 0.16 | 0.2  | 0.5  | 1.0   |
| 5 V   | 0.1  | 0.1  | 0.2  | 0.2  | 0.5  | 1.0   |
| 10 V  | 0.1  | 0.1  | 0.2  | 0.2  | 0.5  | 1.0   |
| 20 V  | 0.1  | 0.1  | 0.15 | 0.2  | 0.5  | 1.0   |
| 30 V  | 0.08 | 0.08 | 0.16 | 0.16 | 0.4  | 0.8   |
| 50 V  | 0.08 | 0.08 | 0.16 | 0.16 | 0.4  | 0.8   |

Best Uncertainty ( $\pm$ ) in Percent<sup>acc</sup> t  
Frequency in Hertz

June 30, 2001

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CALIBRATION LABORATORIES

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

NVLAP Code: 20/E01  
AC/DC Difference for Low Frequency Thermal Current Converters and Shunts

| Range  | 10  | 20  | 40 | 400 | 1 k | 5 k | 10 k | 20 k | 50 k | 100 k |
|--------|-----|-----|----|-----|-----|-----|------|------|------|-------|
| 10 mA  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 20 mA  | 200 | 80  | 50 | 80  | 50  | 80  | 80   | 80   | 120  | 200   |
| 30 mA  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 50 mA  |     |     |    | 80  |     |     |      | 80   | 120  | 200   |
| 0.1 A  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 0.2 A  | 200 | 80  | 50 | 80  | 50  | 80  | 80   | 80   | 120  | 200   |
| 0.3 A  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 0.5 A  |     |     |    | 80  |     |     |      | 80   | 120  | 200   |
| 1.0 A  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 2.0 A  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 3.0 A  | 200 | 80  | 80 | 80  | 80  | 80  | 80   | 80   | 120  | 200   |
| 5.0 A  |     |     |    | 80  |     |     |      | 80   | 120  | 200   |
| 10.0 A | 200 | 140 | 80 | 80  | 80  | 110 | 110  | 120  | 200  |       |

Best Uncertainty ( $\pm$ ) in ppm<sup>acc</sup> t  
Frequency in Hertz

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

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|        |     |     |     |  |     |      |
|--------|-----|-----|-----|--|-----|------|
| 20.0 A | 110 | 110 | 200 |  | 5 k | 10 k |
|--------|-----|-----|-----|--|-----|------|

NVLAP Code: 20/E02  
AC Current  
For Calibrators or DMMs

*Best Uncertainty (±) in ppm<sup>nom</sup> / Frequency in Hertz*

|         |     |     |     |     |     |     |     |     |      |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Current | 10  | 20  | 40  | 100 | 200 | 400 | 1 k | 5 k | 10 k |
| 19 µA   | 250 | 200 | 200 | 200 | 200 | 200 | 200 | 250 | 250  |
| 100 µA  | 160 | 90  | 70  | 70  | 70  | 70  | 150 | 200 | 200  |
| 190 µA  | 150 | 85  | 57  | 60  | 55  | 150 | 200 | 200 | 200  |
| 1 mA    | 150 | 80  | 50  | 50  | 50  | 80  | 100 | 100 | 100  |
| 1.9 mA  | 150 | 80  | 50  | 50  | 41  | 70  | 90  | 90  | 90   |
| 10 mA   | 260 | 90  | 85  | 85  | 85  | 85  | 100 | 100 | 100  |
| 19 mA   | 260 | 85  | 51  | 85  | 51  | 85  | 100 | 100 | 100  |
| 100 mA  | 260 | 90  | 85  | 85  | 85  | 85  | 100 | 100 | 100  |
| 190 mA  | 260 | 85  | 51  | 85  | 51  | 85  | 100 | 100 | 100  |
| 1.0 A   |     |     | 85  | 85  | 85  | 100 | 150 | 150 | 150  |

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|       |    |     |    |     |     |
|-------|----|-----|----|-----|-----|
| 1.9 A | 85 | 85  | 85 | 100 | 150 |
| 10 A  | 85 | 115 | 85 | 120 | 150 |

NVLAP Code: 20/E02  
AC Current  
AC/DC Difference of Y5020 Shunt

*Best Uncertainty (±) in ppm<sup>nom</sup> / Frequency in Hertz*

|         |    |     |     |     |     |     |     |
|---------|----|-----|-----|-----|-----|-----|-----|
| Current | 50 | 100 | 300 | 1 k | 3 k | 4 k | 5 k |
| 10 A    | 70 | 70  | 70  | 70  | 150 | 150 | 150 |

NVLAP Code: 20/E02  
AC Current  
5500A Console

*Best Uncertainty (±) in ppm<sup>nom</sup> / Frequency in Hertz*

|       |    |    |    |     |     |     |     |
|-------|----|----|----|-----|-----|-----|-----|
| Range | 10 | 45 | 65 | 500 | 1 k | 5 k | 10k |
| 33 µA |    |    |    | 180 | 600 | 600 | 600 |

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|             |     |     |     |
|-------------|-----|-----|-----|
| 190 $\mu$ A | 70  | 80  | 470 |
| 329 $\mu$ A | 80  | 80  | 330 |
| 330 $\mu$ A |     | 160 | 180 |
| 1.9 mA      |     | 60  | 100 |
| 3.29 mA     | 80  | 60  | 90  |
| 3.3 mA      |     | 140 | 150 |
| 19 mA       |     | 60  | 90  |
| 32.9 mA     | 130 | 65  | 90  |
| 33 mA       |     | 85  | 90  |
| 190 mA      |     | 60  | 90  |
| 329 mA      | 130 | 65  | 90  |
| 330 mA      |     | 85  | 100 |
| 2.19 A      | 130 | 70  | 100 |
| 2.2 A       |     | 100 |     |
| 11 A        | 80  | 80  | 80  |

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AC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

*Best Uncertainty ( $\pm$ ) in ppm<sub>acc</sub> / Frequency in Hertz*

|              |           |            |             |
|--------------|-----------|------------|-------------|
| <b>Range</b> | <b>40</b> | <b>1 k</b> | <b>10 k</b> |
| 19 $\mu$ A   |           | 210        | 1050        |
| 190 $\mu$ A  | 53        | 53         | 260         |
| 1.9 mA       |           | 46         | 260         |
| 19 mA        |           | 53         | 260         |
| 190 mA       | 43        | 53         | 260         |
| 1.9 A        | 90        | 90         | 1000        |

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**NVLAP Code:** 20/E02  
**AC Current**

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| Range       | 10  | 45  | 65 | 500 | 1 k  | 5 k | 10k  |
|-------------|-----|-----|----|-----|------|-----|------|
| 33 $\mu$ A  |     |     |    |     | 1400 |     | 2200 |
| 190 $\mu$ A |     | 270 |    |     | 360  |     | 1600 |
| 329 $\mu$ A | 380 | 220 |    |     | 270  | 560 | 1600 |
| 330 $\mu$ A |     |     |    |     | 270  | 390 |      |
| 1.9 mA      |     |     |    |     | 170  |     | 750  |
| 3.29 mA     | 320 | 140 |    |     | 140  | 260 | 730  |
| 3.3 mA      |     |     |    |     | 260  | 390 |      |
| 19 mA       |     |     |    |     | 150  |     | 750  |
| 32.9 mA     | 350 | 140 |    |     | 140  | 260 | 740  |
| 33 mA       |     |     |    |     | 260  | 390 |      |

*Best Uncertainty ( $\pm$ ) in  $\text{ppm}^{95\%}$  / Frequency in Hertz*

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**AC Current**

5520A Console

| Range       | 10 | 45 | 65 | 500 | 1 k | 5 k | 10 k | 30 k |
|-------------|----|----|----|-----|-----|-----|------|------|
| 33 $\mu$ A  |    |    |    |     | 130 |     | 220  | 400  |
| 190 $\mu$ A |    | 60 |    |     | 60  |     | 160  | 350  |
| 329 $\mu$ A | 80 | 60 |    |     | 60  | 100 | 120  | 250  |
| 330 $\mu$ A |    |    |    |     | 90  | 150 |      | 300  |
| 1.9 mA      |    |    |    |     | 50  |     | 85   | 140  |

*Best Uncertainty ( $\pm$ ) in  $\text{ppm}^{95\%}$  / Frequency in Hertz*

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|         |     |     |     |     |      |     |
|---------|-----|-----|-----|-----|------|-----|
| 3.29 mA | 70  | 55  | 55  | 75  | 85   | 140 |
| 3.3 mA  |     |     | 70  | 100 |      | 150 |
| 19 mA   |     |     | 55  |     | 70   | 150 |
| 32.9 mA | 115 | 62  | 62  | 65  | 70   | 150 |
| 33 mA   |     |     | 85  | 90  |      | 175 |
| 190 mA  |     |     | 55  |     | 70   | 150 |
| 329 mA  | 125 | 62  | 62  | 65  | 70   | 150 |
| 330 mA  |     |     | 90  | 100 | 150  |     |
| 1.09 A  | 125 | 73  | 73  | 150 | 500  |     |
| 2.99 A  | 125 | 72  | 72  | 150 | 500  |     |
| 3.3 A   |     |     | 150 | 150 | 1100 |     |
| 11 A    | 80  | 80  | 80  | 200 |      |     |
| 20 A    | 100 | 100 | 130 | 200 |      |     |

AC Current Factory Annex 5520A Test Console

| Range      | Frequency in Hertz |    |    |     |      |
|------------|--------------------|----|----|-----|------|
|            | 10                 | 45 | 65 | 500 | 1 k  |
| 33 $\mu$ A |                    |    |    | 300 | 700  |
|            |                    |    |    | 5 k | 10 k |
|            |                    |    |    |     | 30 k |
|            |                    |    |    |     | 700  |
|            |                    |    |    |     | 1300 |

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|             |     |     |     |     |      |
|-------------|-----|-----|-----|-----|------|
| 190 $\mu$ A | 200 | 200 | 200 | 600 | 800  |
| 329 $\mu$ A | 200 | 140 | 140 | 200 | 400  |
| 330 $\mu$ A |     |     | 180 | 300 | 600  |
| 1.9 mA      |     |     | 180 | 300 | 300  |
| 3.29 mA     | 200 | 140 | 140 | 200 | 300  |
| 3.3 mA      |     |     | 180 | 200 | 400  |
| 19 mA       |     |     | 150 | 200 | 300  |
| 32.9 mA     | 200 | 130 | 130 | 140 | 200  |
| 33 mA       |     |     | 200 | 200 | 300  |
| 190 mA      |     |     | 160 | 200 | 300  |
| 329 mA      | 200 | 140 | 140 | 140 | 300  |
| 330 mA      |     |     | 180 | 500 | 1400 |
| 1.09 A      | 140 | 100 | 100 | 200 | 1000 |
| 2.99 A      | 140 | 100 | 100 | 220 | 900  |
| 3.3 A       |     |     | 200 | 140 | 2700 |
| 11 A        |     |     | 140 | 140 | 800  |
| 20 A        |     |     | 140 | 200 | 800  |

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| NVLAP Code: 20/E02<br>AC Current<br>5725A Console | Range(±) | Frequency | Best Uncertainty (±) in ppm <sup>norm</sup> |
|---------------------------------------------------|----------|-----------|---------------------------------------------|
|                                                   | 2.5 A    | 100 Hz    | 140                                         |
|                                                   | 2.5 A    | 1 kHz     | 95                                          |
|                                                   | 2.5 A    | 5 kHz     | 150                                         |
|                                                   | 2.5 A    | 10 kHz    | 150                                         |
|                                                   | 11 A     | 100 Hz    | 40                                          |
|                                                   | 11 A     | 1 kHz     | 95                                          |
|                                                   | 11 A     | 5 kHz     | 150                                         |
|                                                   | 11 A     | 10 kHz    | 150                                         |
| Factory Annex, 5725A Console                      | 2.5 A    | 100 Hz    | 150                                         |
|                                                   | 2.5 A    | 1 kHz     | 140                                         |
|                                                   | 2.5 A    | 5 kHz     | 270                                         |
|                                                   | 2.5 A    | 10 kHz    | 400                                         |

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| NVLAP Code: 20/E05<br>DC Resistance | Range in ohms   | Best Uncertainty (±) in ppm <sup>norm</sup> | Remarks          |
|-------------------------------------|-----------------|---------------------------------------------|------------------|
|                                     | 0.01 to <0.1    | 10                                          | Guideline Bridge |
|                                     | 0.1 to <1       | .5                                          | Guideline Bridge |
|                                     | 1 to <11        | 0.3                                         | Guideline Bridge |
|                                     | 11 to <110      | 0.35                                        | Guideline Bridge |
|                                     | 110 to <190     | 0.45                                        | Guideline Bridge |
|                                     | 190 to <11 k    | 0.4                                         | Guideline Bridge |
|                                     | 11 k to <19 k   | 0.45                                        | Guideline Bridge |
|                                     | 19 k to <110 k  | 0.4                                         | Guideline Bridge |
|                                     | 110 k to <1.1 M | 1.2                                         | Guideline Bridge |
|                                     | 1               | 0.5                                         | Low Ohm System   |

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| Range in ohms | Best Uncertainty ( $\pm$ ) in ppm <sup>ref 1</sup> | Remarks        |
|---------------|----------------------------------------------------|----------------|
| 10            | -0.6                                               | Low Ohm System |
| 100           | 0.75                                               | Low Ohm System |
| 1 k           | 0.6                                                | Low Ohm System |
| 10 k          | 0.75                                               | Low Ohm System |

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| Range in ohms | Best Uncertainty ( $\pm$ ) in ppm <sup>ref 1</sup> | Remarks       |
|---------------|----------------------------------------------------|---------------|
| 100 k         | 2                                                  | 5700A Console |
| 190 k         | 2.5                                                | 5700A Console |
| 1 M           | 3                                                  | 5700A Console |
| 1.9 M         | 3.5                                                | 5700A Console |
| 3 M           | 4                                                  | 5700A Console |
| 10 M          | 4.5                                                | 5700A Console |
| 19 M          | 6                                                  | 5700A Console |
| 30 M          | 15                                                 | 5700A Console |
| 100 M         | 25                                                 | 5700A Console |
| 300 M         | 60                                                 | 5700A Console |

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|        |    |               |
|--------|----|---------------|
| 19     | 70 | 5500A Console |
| 30     | 70 | 5500A Console |
| 33     | 40 | 5500A Console |
| 109    | 21 | 5500A Console |
| 119    | 17 | 5500A Console |
| 190    | 13 | 5500A Console |
| 300    | 12 | 5500A Console |
| 330    | 11 | 5500A Console |
| 1.09 k | 10 | 5500A Console |
| 1.19 k | 10 | 5500A Console |
| 1.9 k  | 13 | 5500A Console |
| 3 k    | 12 | 5500A Console |
| 3.3 k  | 11 | 5500A Console |
| 10.9 k | 10 | 5500A Console |
| 11.9 k | 10 | 5500A Console |
| 19 k   | 12 | 5500A Console |
| 30 k   | 12 | 5500A Console |
| 33 k   | 11 | 5500A Console |

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|        |     |               |
|--------|-----|---------------|
| 109 k  | 10  | 5500A Console |
| 119 k  | 10  | 5500A Console |
| 190 k  | 24  | 5500A Console |
| 300 k  | 20  | 5500A Console |
| 330 k  | 20  | 5500A Console |
| 1.09 M | 16  | 5500A Console |
| 1.19 M | 15  | 5500A Console |
| 1.9 M  | 8   | 5500A Console |
| 3 M    | 8   | 5500A Console |
| 3.3 M  | 85  | 5500A Console |
| 10.9 M | 62  | 5500A Console |
| 11.9 M | 61  | 5500A Console |
| 19 M   | 30  | 5500A Console |
| 30 M   | 30  | 5500A Console |
| 33 M   | 550 | 5500A Console |
| 109 M  | 525 | 5500A Console |
| 119 M  | 525 | 5500A Console |
| 290 M  | 100 | 5500A Console |

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NVLAP Code: 20/E05  
DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| Range in ohms | Best Uncertainty ( $\pm$ ) in ppm <sup>95%</sup> | Remarks       |
|---------------|--------------------------------------------------|---------------|
| 1             | 24.0                                             | 5720A Console |
| 1.9           | 20.0                                             | 5720A Console |
| 10            | 10.0                                             | 5720A Console |
| 19            | 8.4                                              | 5720A Console |
| 100           | 3.2                                              | 5720A Console |
| 190           | 2.6                                              | 5720A Console |
| 1 k           | 3.0                                              | 5720A Console |
| 1.9 k         | 2.5                                              | 5720A Console |
| 10 k          | 2.0                                              | 5720A Console |
| 19 k          | 2.2                                              | 5720A Console |
| 100 k         | 2.2                                              | 5720A Console |
| 190 k         | 2.4                                              | 5720A Console |
| 1 M           | 4.0                                              | 5720A Console |
| 1.9 M         | 4.7                                              | 5720A Console |

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NVLAP Code: 20/E05  
DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| Range in ohms | Best Uncertainty ( $\pm$ ) in ppm <sup>95%</sup> | Remarks       |
|---------------|--------------------------------------------------|---------------|
| 2             | 100                                              | 5500A Console |
| 10.9          | 40                                               | 5500A Console |
| 11.9          | 40                                               | 5500A Console |
| 19            | 90                                               | 5500A Console |
| 30            | 90                                               | 5500A Console |
| 33            | 50                                               | 5500A Console |
| 109           | 40                                               | 5500A Console |
| 119           | 20                                               | 5500A Console |
| 190           | 20                                               | 5500A Console |
| 300           | 20                                               | 5500A Console |

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| Range  | Best Uncertainty (±) in ppm <sup>max</sup> | Remarks       |
|--------|--------------------------------------------|---------------|
| 330    | 15                                         | 5500A Console |
| 1.1 k  | 15                                         | 5500A Console |
| 1.2 k  | 15                                         | 5500A Console |
| 1.9 k  | 15                                         | 5500A Console |
| 3 k    | 15                                         | 5500A Console |
| 3.3 k  | 15                                         | 5500A Console |
| 10.9 k | 15                                         | 5500A Console |
| 11.9 k | 15                                         | 5500A Console |
| 19 k   | 15                                         | 5500A Console |
| 30 k   | 15                                         | 5500A Console |
| 33 k   | 15                                         | 5500A Console |
| 109 k  | 15                                         | 5500A Console |
| 119 k  | 15                                         | 5500A Console |
| 190 k  | 25                                         | 5500A Console |
| 300 k  | 25                                         | 5500A Console |
| 330 k  | 25                                         | 5500A Console |
| 1.1 M  | 25                                         | 5500A Console |
| 1.2 M  | 25                                         | 5500A Console |

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|--------|--------------------------------------------|---------------|
| 1.9 M  | 25                                         | 5500A Console |
| 3.0 M  | 25                                         | 5500A Console |
| 3.3 M  | 100                                        | 5500A Console |
| 10.9 M | 100                                        | 5500A Console |
| 11.9 M | 100                                        | 5500A Console |
| 19 M   | 100                                        | 5500A Console |
| 30 M   | 100                                        | 5500A Console |
| 33 M   | 800                                        | 5500A Console |
| 109 M  | 800                                        | 5500A Console |
| 119 M  | 800                                        | 5500A Console |
| 290 M  | 800                                        | 5500A Console |

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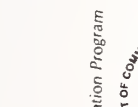
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|        |     |               |
|--------|-----|---------------|
| 11.9   | 2.5 | 5520A Console |
| 19     | 2.5 | 5520A Console |
| 30     | 2.8 | 5520A Console |
| 33     | 2.5 | 5520A Console |
| 109    | 2   | 5520A Console |
| 119    | 2   | 5520A Console |
| 190    | 2   | 5520A Console |
| 300    | 2.5 | 5520A Console |
| 330    | 2.5 | 5520A Console |
| 1.09 k | 2   | 5520A Console |
| 1.19 k | 2   | 5520A Console |
| 1.9 k  | 2   | 5520A Console |
| 3 k    | 2.5 | 5520A Console |
| 3.3 k  | 3.0 | 5520A Console |
| 10.9 k | 2.5 | 5520A Console |
| 11.9 k | 2.5 | 5520A Console |
| 19 k   | 2.5 | 5520A Console |
| 30 k   | 3   | 5520A Console |

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|        |     |               |
|--------|-----|---------------|
| 33 k   | 3   | S520A Console |
| 109 k  | 3   | S520A Console |
| 119 k  | 3   | S520A Console |
| 190 k  | 3   | S520A Console |
| 300 k  | 3.5 | S520A Console |
| 330 k  | 3.5 | S520A Console |
| 1.09 M | 4.5 | S520A Console |
| 1.19 M | 4.5 | S520A Console |
| 1.9 M  | 5   | S520A Console |
| 3 M    | 6   | S520A Console |
| 3.3 M  | 6   | S520A Console |
| 10.9 M | 8   | S520A Console |
| 11.9 M | 8   | S520A Console |
| 19 M   | 20  | S520A Console |
| 30 M   | 30  | S520A Console |
| 33 M   | 30  | S520A Console |
| 109 M  | 70  | S520A Console |
| 119 M  | 70  | S520A Console |

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| Range           | Best Uncertainty ( $\pm$ ) in ppm <sup>nom</sup> | Remarks                      |
|-----------------|--------------------------------------------------|------------------------------|
| 290 M           | 200                                              | 5520A Console                |
| 400 M           | 200                                              | 5520A Console                |
| 640 M           | 600                                              | 5520A Console                |
| 1.09 G          | 1000                                             | 5520A Console                |
| 2 to 30         | 25                                               | Factory Annex, 5520A Console |
| 33 to 109       | 12                                               | Factory Annex, 5520A Console |
| 119 to 1.19 M   | 7                                                | Factory Annex, 5520A Console |
| 1.9 M to 11.9 M | 12                                               | Factory Annex, 5520A Console |
| 19 M            | 25                                               | Factory Annex, 5520A Console |
| 30 M            | 75                                               | Factory Annex, 5520A Console |
| 33 M            | 75                                               | Factory Annex, 5520A Console |
| 109 M           | 120                                              | Factory Annex, 5520A Console |
| 119 M           | 150                                              | Factory Annex, 5520A Console |
| 290 M           | 550                                              | Factory Annex, 5520A Console |
| 400 M           | 800                                              | Factory Annex, 5520A Console |
| 640 M           | 1500                                             | Factory Annex, 5520A Console |
| 1090 M          | 2500                                             | Factory Annex, 5520A Console |

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| Range                      | Best Uncertainty ( $\pm$ ) in ppm <sup>nom</sup> | Remarks             |
|----------------------------|--------------------------------------------------|---------------------|
| to 19 $\mu$ A              | 10                                               | Calibrators or DMMs |
| 100 $\mu$ A to 190 $\mu$ A | 4                                                | Calibrators or DMMs |
| 1.0 mA to 1.9 mA           | 4                                                | Calibrators or DMMs |
| 10 mA to 19 mA             | 9                                                | Calibrators or DMMs |
| 100 mA to 190 mA           | 10                                               | Calibrators or DMMs |
| 1.0 A                      | 11                                               | Calibrators or DMMs |
| 1.9 A                      | 10                                               | Calibrators or DMMs |
| 10 A                       | 22                                               | Calibrators or DMMs |

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DC Current

| Range (±) in Amperes | Best Uncertainty (±) in ppm <sup>95%</sup> | Remarks       |
|----------------------|--------------------------------------------|---------------|
| 0                    | 3 (nA)                                     | 5500A Console |
| 190 μ                | 8                                          | 5500A Console |
| 1.9 m                | 7                                          | 5500A Console |
| 3.29 m               | 7                                          | 5500A Console |
| 19 m                 | 7                                          | 5500A Console |
| 32.9 m               | 7                                          | 5500A Console |
| 190 m                | 8                                          | 5500A Console |
| 329 m                | 8                                          | 5500A Console |
| 2.19 m               | 14                                         | 5500A Console |
| 11                   | 30                                         | 5500A Console |

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**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

NVLAP Code: 20/E05  
DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| Range   | Best Uncertainty (±) in ppm <sup>95%</sup> | Remarks       |
|---------|--------------------------------------------|---------------|
| 19 μA   | 100                                        | 5720A Console |
| 190 μA  | 28                                         | 5720A Console |
| -190 μA | 16                                         | 5720A Console |
| ±1.9 mA | 8                                          | 5720A Console |
| ±19 mA  | 12                                         | 5720A Console |
| 100 mA  | 12                                         | 5720A Console |
| ±190 mA | 12                                         | 5720A Console |
| 1 A     | 19                                         | 5720A Console |
| ±1.9 A  | 16                                         | 5720A Console |

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NVLAP Code: 20/E05  
DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| Range (±) Ampheres | Best Uncertainty (±) in ppm <sup>max</sup> / | Remarks       |
|--------------------|----------------------------------------------|---------------|
| 190 μ              | 58                                           | 5500A Console |
| 1.9 m              | 32                                           | 5500A Console |
| 3.3 m              | 29                                           | 5500A Console |
| 19 m               | 21                                           | 5500A Console |
| 32.9 m             | 20                                           | 5500A Console |
| 190 m              | 42                                           | 5500A Console |
| 329 m              | 40                                           | 5500A Console |
| 2.29               | 40                                           | 5500A Console |
| 11                 | 65                                           | 5500A Console |

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DC Current

| Range (±) Ampheres | Best Uncertainty (±) in ppm <sup>max</sup> / | Remarks       |
|--------------------|----------------------------------------------|---------------|
| 0                  | 100 (pA)                                     | 5520A Console |
| 190 μ              | 10                                           | 5520A Console |
| 329 μ              | 10                                           | 5520A Console |
| 1.9 m              | 9                                            | 5520A Console |
| 3.29 m             | 8                                            | 5520A Console |
| 19 m               | 9                                            | 5520A Console |
| 32.9 m             | 8                                            | 5520A Console |
| 190 m              | 9                                            | 5520A Console |
| 329 m              | 8                                            | 5520A Console |
| 1.09               | 19                                           | 5520A Console |
| 2.99               | 18                                           | 5520A Console |
| 11                 | 30                                           | 5520A Console |
| 20                 | 65                                           | 5520A Console |

190 μ to 329 μ

25

Factory Annex, 5520A Console

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|                 |    |                              |
|-----------------|----|------------------------------|
| 1.9 m to 3.29 m | 17 | Factory Annex, 5520A Console |
| 19 m to 32.9 m  | 18 | Factory Annex, 5520A Console |
| 190 m to 329 m  | 34 | Factory Annex, 5520A Console |
| 1.09            | 35 | Factory Annex, 5520A Console |
| 2.99            | 55 | Factory Annex, 5520A Console |
| 11 to 20        | 90 | Factory Annex, 5520A Console |

NVLAP Code: 20/E05  
DC Current

| Range (±) | Best Uncertainty (±) in ppm <sup>1</sup> | Remarks                      |
|-----------|------------------------------------------|------------------------------|
| 0.0       | 100 µA                                   | 5725A Console                |
| 190 mA    | 18                                       | 5725A Console                |
| 1 A       | 60                                       | 5725A Console                |
| 2.5 A     | 60                                       | 5725A Console                |
| 11 A      | 60                                       | 5725A Console                |
| 0.0       | 120 µA                                   | Factory Annex, 5725A Console |
| 190 mA    | 20                                       | Factory Annex, 5725A Console |

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|      |     |                              |
|------|-----|------------------------------|
| 1 A  | 100 | Factory Annex, 5725A Console |
| 11 A | 70  | Factory Annex, 5725A Console |

NVLAP Code: 20/E06  
DC Voltage

| Range                                  | Best Uncertainty (±) ppm <sup>1</sup>           | Remarks                             |
|----------------------------------------|-------------------------------------------------|-------------------------------------|
| Reference Standards                    |                                                 |                                     |
| 10.00 V                                | 0.02 ppm <sup>2</sup>                           | Direct Comparison - in lab          |
| 10.00 V                                | 0.06 ppm <sup>2</sup>                           | Direct Comparison - remote location |
| Well Isolated DC Sources or Voltmeters |                                                 |                                     |
| 200 µV to 10 V                         | (0.02 + 0.1E <sup>0.2</sup> ) µV <sup>2,3</sup> | Direct against J Array              |
| > 10 V to 100 V                        | 0.5 ppm <sup>2</sup>                            | J Array & Divider                   |
| > 100 V to 1000 V                      | 0.7 ppm <sup>2</sup>                            | J Array & Divider                   |
| Calibrators or Digital Voltmeters      |                                                 |                                     |
| 0.1 V                                  | 3.0 ppm                                         | Transfer Method                     |
| 1.0 V                                  | 0.8 ppm                                         | Transfer Method                     |

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|          |         |                 |  |
|----------|---------|-----------------|--|
| 10.0 V   | 0.3 ppm | Transfer Method |  |
| 100.0 V  | 0.5 ppm | Transfer Method |  |
| 1000.0 V | 0.8 ppm | Transfer Method |  |

|                                          |                                                                 |                |  |
|------------------------------------------|-----------------------------------------------------------------|----------------|--|
| <b>NVLAP Code:</b> 20/E06<br>DC Voltage  |                                                                 |                |  |
| <b>Range (<math>\pm</math>) in Volts</b> | <b>Best Uncertainty (<math>\pm</math>) in ppm<sup>95%</sup></b> | <b>Remarks</b> |  |
| 0                                        | 0.5                                                             | 5500A Console  |  |
| 0.329                                    | 7.0                                                             | 5500A Console  |  |
| 3.29                                     | 5.5                                                             | 5500A Console  |  |
| 32.9                                     | 8.0                                                             | 5500A Console  |  |
| 50                                       | 8.0                                                             | 5500A Console  |  |
| 329                                      | 8.0                                                             | 5500A Console  |  |
| 334                                      | 8.5                                                             | 5500A Console  |  |
| 900                                      | 7.0                                                             | 5500A Console  |  |
| 1020                                     | 7.0                                                             | 5500A Console  |  |

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DC Voltage  
At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

|                |                                                                 |                |  |
|----------------|-----------------------------------------------------------------|----------------|--|
|                |                                                                 |                |  |
| <b>Range</b>   | <b>Best Uncertainty (<math>\pm</math>) in ppm<sup>95%</sup></b> | <b>Remarks</b> |  |
| 100 mV         | 5.0                                                             | 5720A Console  |  |
| -100 mV        | 6.5                                                             | 5720A Console  |  |
| $\pm 1.0$ V    | 1.2                                                             | 5720A Console  |  |
| $\pm 10.0$ V   | 0.7                                                             | 5720A Console  |  |
| $\pm 100.0$ V  | 1.0                                                             | 5720A Console  |  |
| $\pm 1000.0$ V | 1.4                                                             | 5720A Console  |  |

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LF AC Voltage

| Range  | 10  | 20  | 40  | 100 | 1k  | 20k | 50k  | 100k | 300k | 500k | 800k | 1 M       |
|--------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|-----------|
| 2 mV   | 500 | 970 | 720 | 980 | 500 | 850 | 1120 | 500  | 1170 | 1280 | 2060 | 2550 2910 |
| 6 mV   | 260 | 290 | 190 | 180 | 230 | 200 | 180  | 330  | 520  | 700  | 900  | 360 390   |
| 10 mV  | 130 | 230 | 110 | 180 | 250 | 140 | 140  | 210  | 340  | 240  | 640  | 360 390   |
| 20 mV  | 90  | 80  | 75  | 75  | 75  | 75  | 170  | 260  | 350  | 500  | 330  | 360       |
| 60 mV  | 80  | 80  | 60  | 48  | 37  | 38  | 43   | 62   | 120  | 230  | 270  | 330 370   |
| 100 mV | 35  | 70  | 21  | 44  | 34  | 22  | 26   | 41   | 70   | 140  | 140  | 210 180   |
| 200 mV | 35  | 23  | 19  | 19  | 19  | 19  | 30   | 60   | 100  | 110  | 180  | 190       |
| 600 mV | 20  | 65  | 17  | 10  | 16  | 9   | 10   | 12   | 12   | 80   | 80   | 80        |
| 1 V    | 120 | 31  | 14  | 10  | 13  | 13  | 10   | 22   | 10   | 80   | 100  | 100 80    |
| 2 V    | 20  | 15  | 20  | 9   | 8   | 8   | 15   | 10   | 90   | 100  | 80   | 80        |
| 6 V    | 25  | 16  | 15  | 9   | 8   | 9   | 8    | 21   | 11   | 100  | 100  | 80 80     |
| 10 V   | 20  | 40  | 13  | 10  | 9   | 9   | 10   | 10   | 15   | 80   | 100  | 100 90    |

*Best Uncertainty (±) in ppm<sup>unc</sup> / Frequency in Hertz*

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LF AC Voltage

| Range  | 20  | 20 | 17 | 16 | 9  | 9  | 9  | 9  | 10 | 15 | 100 | 110 | 80 | 80 |
|--------|-----|----|----|----|----|----|----|----|----|----|-----|-----|----|----|
| 60 V   | 25  | 19 | 18 | 11 | 11 | 14 | 11 | 35 | 20 | 80 |     |     |    |    |
| 100 V  | 130 | 45 | 20 | 14 | 13 | 12 | 10 | 40 | 20 |    |     |     |    |    |
| 200 V  | 25  | 22 | 16 | 15 | 12 | 12 | 13 | 40 | 20 |    |     |     |    |    |
| 600 V  | 180 | 55 | 31 | 22 | 16 | 17 | 18 | 25 | 45 |    |     |     |    |    |
| 1000 V | 55  | 22 | 21 | 20 | 19 | 19 | 19 | 30 | 50 |    |     |     |    |    |

**NVLAP Code: 20/E09**  
AC Voltage

Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm<sup>unc</sup> / Frequency in Hertz*

| Range in Volts | 9.5 | 10   | 45  | 1 k | 5 k | 10 k | 18 k | 20 k | 50 k | 90 k | 100 k | 450 k | 500 k |
|----------------|-----|------|-----|-----|-----|------|------|------|------|------|-------|-------|-------|
| 0.01           |     |      | 430 | 430 | 430 | 430  |      |      |      |      |       |       |       |
| 0.03           |     | 1000 | 120 | 70  | 65  | 65   | 65   | 150  | 260  | 470  |       |       |       |
| 0.3            |     | 1000 | 50  | 30  | 35  | 25   | 25   | 35   | 70   | 180  |       |       |       |

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### FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

#### NVLAP Code: 20/E09

##### AC Voltage

|      |      |    |    |    |    |    |    |    |    |     |
|------|------|----|----|----|----|----|----|----|----|-----|
| 3.0  | 1000 | 30 | 25 | 20 | 25 | 20 | 20 | 35 | 35 | 130 |
| 30   | 1000 | 35 | 27 | 20 | 20 | 20 | 25 | 45 | 45 |     |
| 300  |      |    | 36 | 25 | 25 | 25 | 25 |    |    |     |
| 1000 |      |    | 35 | 35 | 35 | 35 |    |    |    |     |

#### NVLAP Code: 20/E09

##### AC Voltage

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

*Best Uncertainty ( $\pm$ ) in ppm<sup>new</sup> / Frequency in Hertz*

| Range  | 40 | 50 | 1 k | 20 k | 100 k | 300 k | 500 k | 1 M  |
|--------|----|----|-----|------|-------|-------|-------|------|
| 1.9 mV |    |    | 740 | 840  |       |       |       |      |
| 19 mV  | 90 | 90 | 90  | 270  | 420   |       |       | 1100 |
| 190 mV | 30 | 60 | 60  | 80   | 130   | 240   |       | 740  |
| 600 mV | 30 | 20 | 20  | 20   | 50    | 130   | 500   |      |
| 1 V    | 20 | 10 | 10  | 10   | 50    | 100   | 400   |      |

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|        |    |    |      |
|--------|----|----|------|
| 2 V    | 20 | 20 | 400  |
| 3 V    | 30 | 20 | 670  |
| 10 V   | 20 | 10 | 400  |
| 20 V   | 10 | 10 | 400  |
| 30 V   | 30 | 20 | 1700 |
| 100 V  | 20 | 20 |      |
| 200 V  | 25 | 20 |      |
| 500 V  | 30 | 20 |      |
| 1100 V | 25 | 30 |      |

NVLAP Code: 20/E09  
AC Voltage

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty ( $\pm$ ) in ppm<sup>max</sup> 1  
Frequency in Hertz*

| Range  | 10  | 45  | 1 k | 5 k | 10 k | 20 k | 50 k | 100 k | 500 k |
|--------|-----|-----|-----|-----|------|------|------|-------|-------|
| 0.03 V | 300 | 180 | 180 |     | 180  | 180  | 250  | 350   | 900   |
| 0.3 V  | 180 | 27  | 27  |     | 27   | 27   | 50   | 75    | 380   |

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AC Voltage

| Range | 9.5 | 10  | 45  | 1 k | 5 k | 10 k | 18 k | 20 k | 30 k | 50 k | 90 k | 100 k | 450 k | 500 k |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|-------|-------|-------|
| 0.003 | 250 |     |     |     |     |      |      |      |      |      |      |       |       |       |
| 0.01  |     | 350 | 350 | 350 | 500 |      |      |      |      |      |      |       |       |       |
| 0.03  |     |     | 100 | 64  | 60  | 60   | 60   | 60   | 140  | 250  | 450  |       |       |       |
| 0.3   |     |     |     | 25  | 29  | 21   | 25   | 31   | 70   | 150  |      |       |       |       |
| 3.0   |     |     |     |     | 16  | 16   | 16   | 30   | 35   | 120  |      |       |       |       |
| 5.0   |     |     |     |     | 40  | 40   | 40   |      |      |      |      |       |       |       |
| 30    |     |     |     |     | 18  | 18   | 20   | 40   | 60   |      |      |       |       |       |

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AC Voltage

5520A Console

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AC Voltage

| Range   | 9.5 | 10 | 45  | 1 k | 10 k <sup>max 8</sup> | 20 k <sup>max 7</sup> | 50 k | 100 k <sup>max 6</sup> | 450 k <sup>max 5</sup> |
|---------|-----|----|-----|-----|-----------------------|-----------------------|------|------------------------|------------------------|
| 0.003 V |     |    | 400 |     |                       |                       |      |                        |                        |
| 0.03 V  |     |    |     | 400 |                       |                       |      |                        |                        |
| 0.033 V |     |    |     |     | 120                   |                       |      |                        |                        |
| 0.3 V   |     |    |     |     |                       | 32                    | 50   | 90                     | 250                    |
| 0.33 V  |     |    |     |     |                       | 80                    |      |                        |                        |
| 3 V     |     |    |     |     |                       | 30                    | 50   | 200                    |                        |
| 3.3 V   |     |    |     |     |                       | 85                    |      |                        |                        |

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AC Voltage

Factory Annex 5520A Test Console

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|        |      |    |    |    |    |    |     |     |
|--------|------|----|----|----|----|----|-----|-----|
| 30 V   | 1100 | 50 | 30 | 30 | 30 | 30 | 50  | 100 |
| 33 V   |      | 70 |    | 80 |    |    |     |     |
| 300 V  |      | 40 | 30 | 30 | 40 | 50 | 300 |     |
| 330 V  |      | 50 |    | 40 |    |    |     |     |
| 1000 V |      | 40 | 40 | 40 | 40 |    |     |     |
| 1020 V |      | 40 |    | 40 |    |    |     |     |

NVLAP Code: 20/E09  
 AC Voltage  
 5725A Console

*Best Uncertainty ( $\pm$ ) in ppm<sup>res</sup> / Frequency in Hertz*

| Range  | 40 | 1 k | 20 k | 50 k | 100 k |
|--------|----|-----|------|------|-------|
| 300 V  | 38 | 21  | 30   | 61   | 170   |
| 600 V  | 32 | 21  | 30   | 61   | 170   |
| 1000 V | 23 | 21  | 30   |      |       |

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|                             |    |    |    |    |     |
|-----------------------------|----|----|----|----|-----|
| Factory Amex, 5725A Console |    |    |    |    |     |
| 300 V                       | 39 | 25 | 33 | 70 | 200 |
| 600 V                       | 32 | 25 | 33 | 70 | 200 |
| 1000 V                      | 23 | 25 | 42 |    |     |

NVLAP Code: 20/E10  
 Capacitance  
 Three Wire

*Best Uncertainty ( $\pm$ ) in ppm<sup>res</sup> / Frequency in Hertz*

| Range                         | 1 k    | 0.01% + (0.002% * C $\mu$ F) f kHz | 0.01% + (0.002% * C $\mu$ F) f kHz | 10 k   |
|-------------------------------|--------|------------------------------------|------------------------------------|--------|
| 1.0 pF to 1.1111 $\mu$ F      |        |                                    |                                    |        |
| 1.0 pF to 0.001 $\mu$ F       | 0.01%  |                                    |                                    | 0.01%  |
| 0.001 $\mu$ F to 0.01 $\mu$ F | 0.01%  |                                    |                                    | 0.012% |
| 0.01 $\mu$ F to 0.05 $\mu$ F  | 0.01%  |                                    |                                    | 0.02%  |
| 0.05 $\mu$ F to 0.1 $\mu$ F   | 0.01%  |                                    |                                    | 0.03%  |
| 0.1 $\mu$ F to 0.5 $\mu$ F    | 0.011% |                                    |                                    | 0.11%  |
| 0.5 $\mu$ F to 1.11 $\mu$ F   | 0.012% |                                    |                                    | 0.21%  |

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**Two Wire**

| Range                    | Best Uncertainty ( $\pm$ ) in ppm <sup>max</sup>                                                     | Remarks       |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------|
| 10 pF to 1.1111 $\mu$ F  | $0.01 \cdot (0.002 \cdot C \cdot \mu F)^{1/2} \cdot \frac{5 \cdot 10^{-17}}{C \cdot \mu F} \cdot \%$ | 5500A Console |
| 10 pF                    | 5%                                                                                                   | 5500A Console |
| 100 pF                   | 0.5%                                                                                                 | 5500A Console |
| 1000 pF                  | 0.06%                                                                                                | 5500A Console |
| 0.01 $\mu$ F             | 0.015%                                                                                               | 5500A Console |
| 0.1 $\mu$ F to 1 $\mu$ F | 0.017%                                                                                               | 5500A Console |

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Capacitance

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| Range                 | Best Uncertainty ( $\pm$ ) in ppm <sup>max</sup> | Remarks       |
|-----------------------|--------------------------------------------------|---------------|
| 7 nF @ 1000 Hz        | 710                                              | 5500A Console |
| 10.9 nF @ 1000 Hz     | 700                                              | 5500A Console |
| 20 nF @ 1000 Hz       | 700                                              | 5500A Console |
| 70 nF @ 1000 Hz       | 690                                              | 5500A Console |
| 200 nF @ 1000 Hz      | 690                                              | 5500A Console |
| 300 nF @ 1000 Hz      | 680                                              | 5500A Console |
| 700 nF @ 100 Hz       | 680                                              | 5500A Console |
| 2 $\mu$ F @ 100 Hz    | 690                                              | 5500A Console |
| 3 $\mu$ F @ 100 Hz    | 690                                              | 5500A Console |
| 7 $\mu$ F @ 100 Hz    | 690                                              | 5500A Console |
| 10.9 $\mu$ F @ 100 Hz | 690                                              | 5500A Console |
| 20 $\mu$ F @ 100 Hz   | 700                                              | 5500A Console |
| 30 $\mu$ F @ 100 Hz   | 710                                              | 5500A Console |
| 70 $\mu$ F @ 100 Hz   | 740                                              | 5500A Console |
| 200 $\mu$ F @ 100 Hz  | 1400                                             | 5500A Console |
| 300 $\mu$ F @ 100 Hz  | 1500                                             | 5500A Console |
| 330 $\mu$ F @ 50 Hz   | 1600                                             | 5500A Console |
| 1.1 mF @ 50 Hz        | 2400                                             | 5500A Console |

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Capacitance

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| Range              | Best Uncertainty ( $\pm$ ) in ppm <sup>m=1</sup> | Remarks       |
|--------------------|--------------------------------------------------|---------------|
| 350 pF @ 1000 Hz   | 3200                                             | 5500A Console |
| 480 pF @ 1000 Hz   | 3000                                             | 5500A Console |
| 600 pF @ 1000 Hz   | 1600                                             | 5500A Console |
| 1 nF @ 1000 Hz     | 1600                                             | 5500A Console |
| 2 nF @ 1000 Hz     | 1200                                             | 5500A Console |
| 7 nF @ 1000 Hz     | 1200                                             | 5500A Console |
| 10.9 nF @ 1000 Hz  | 1000                                             | 5500A Console |
| 20 nF @ 1000 Hz    | 1000                                             | 5500A Console |
| 70 nF @ 1000 Hz    | 820                                              | 5500A Console |
| 200 nF @ 1000 Hz   | 820                                              | 5500A Console |
| 300 nF @ 1000 Hz   | 820                                              | 5500A Console |
| 700 nF @ 100 Hz    | 820                                              | 5500A Console |
| 2 $\mu$ F @ 100 Hz | 850                                              | 5500A Console |

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Capacitance

| Range            | Best Uncertainty ( $\pm$ ) in ppm <sup>m=1</sup> | Remarks       |
|------------------|--------------------------------------------------|---------------|
| 190 pF @ 5000 Hz | 2000                                             | 5520A Console |
| 350 pF @ 1000 Hz | 1800                                             | 5520A Console |
| 480 pF @ 1000 Hz | 1650                                             | 5520A Console |

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| Range                 | 10 Second Charge Current | Best Uncertainty ( $\pm$ ) in ppm <sub>max i</sub> | Remarks       |
|-----------------------|--------------------------|----------------------------------------------------|---------------|
| 600 pF @ 1000 Hz      | 1000                     |                                                    | 5520A Console |
| 1 nF @ 1000 Hz        | 900                      |                                                    | 5520A Console |
| 2 nF @ 1000 Hz        | 770                      |                                                    | 5520A Console |
| 7 nF @ 1000 Hz        | 700                      |                                                    | 5520A Console |
| 10.9 nF @ 1000 Hz     | 690                      |                                                    | 5520A Console |
| 20 nF @ 1000 Hz       | 685                      |                                                    | 5520A Console |
| 70 nF @ 1000 Hz       | 680                      |                                                    | 5520A Console |
| 109 nF @ 1000 Hz      | 680                      |                                                    | 5520A Console |
| 200 nF @ 1000 Hz      | 680                      |                                                    | 5520A Console |
| 300 nF @ 1000 Hz      | 680                      |                                                    | 5520A Console |
| 700 nF @ 100 Hz       | 680                      |                                                    | 5520A Console |
| 1.09 $\mu$ F @ 100 Hz | 680                      |                                                    | 5520A Console |
| 2 $\mu$ F @ 100 Hz    | 680                      |                                                    | 5520A Console |
| 3 $\mu$ F @ 100 Hz    | 680                      |                                                    | 5520A Console |
| 7 $\mu$ F @ 100 Hz    | 680                      |                                                    | 5520A Console |
| 10.9 $\mu$ F @ 100 Hz | 685                      |                                                    | 5520A Console |
| 20 $\mu$ F @ 100 Hz   | 700                      |                                                    | 5520A Console |
| 30 $\mu$ F @ 100 Hz   | 700                      |                                                    | 5520A Console |

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| Range               | 10 Second Charge Current | Best Uncertainty ( $\pm$ ) in ppm <sub>max i</sub> | Remarks       |
|---------------------|--------------------------|----------------------------------------------------|---------------|
| 70 $\mu$ F @ 50 Hz  | 1280                     |                                                    | 5520A Console |
| 109 $\mu$ F @ 50 Hz | 1320                     |                                                    | 5520A Console |
| 200 $\mu$ F         | 60 $\mu$ A               | 250                                                | 5520A Console |
| 300 $\mu$ F         | 90 $\mu$ A               | 250                                                | 5520A Console |
| 330 $\mu$ F         | 100 $\mu$ A              | 250                                                | 5520A Console |
| 700 $\mu$ F         | 200 $\mu$ A              | 250                                                | 5520A Console |
| 1.09 mF             | 300 $\mu$ A              | 250                                                | 5520A Console |
| 1.1 mF              | 300 $\mu$ A              | 250                                                | 5520A Console |
| 2 mF                | 600 $\mu$ A              | 250                                                | 5520A Console |
| 3 mF                | 900 $\mu$ A              | 250                                                | 5520A Console |
| 3.3 mF              | 1 mA                     | 250                                                | 5520A Console |
| 10.9 mF             | 3 mA                     | 250                                                | 5520A Console |
| 20 mF               | 6 mA                     | 250                                                | 5520A Console |
| 30 mF               | 9 mA                     | 250                                                | 5520A Console |
| 33 mF               | 10 mA                    | 250                                                | 5520A Console |

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| Range                                         | Best Uncertainty ( $\pm$ ) in $\text{ppm}^{+1}$ | Remarks                      |
|-----------------------------------------------|-------------------------------------------------|------------------------------|
| 110 mF                                        | 30 mA                                           | 5520A Console                |
| 190 pF @ 5 kHz                                | 15000                                           | Factory Annex, 5520A Console |
| 350 pF @ 1 kHz                                | 7800                                            | Factory Annex, 5520A Console |
| 480 pF @ 1 kHz                                | 4200                                            | Factory Annex, 5520A Console |
| 600 pF @ 1 kHz                                | 3200                                            | Factory Annex, 5520A Console |
| 1000 pF @ 1 kHz                               | 2000                                            | Factory Annex, 5520A Console |
| 2000 pF @ 1 kHz                               | 1000                                            | Factory Annex, 5520A Console |
| 7000 pF @ 1 kHz                               | 700                                             | Factory Annex, 5520A Console |
| .7 $\mu\text{F}$ to 30 $\mu\text{F}$ @ 100 Hz | 700                                             | Factory Annex, 5520A Console |
| 70 $\mu\text{F}$ to 109 $\mu\text{F}$ @ 50 Hz | 1300                                            | Factory Annex, 5520A Console |
| 200 $\mu\text{F}$ to 110 mF @ 50 Hz           | 300                                             | Factory Annex, 5520A Console |

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NVLAP Code: 20/E15  
Phase  
5500A Console

Best Uncertainty ( $\pm$ ) in  $\text{degrees}^{+1}$   
Frequency in Hertz

| Range Phase (degrees) | 60   | 65   | 400  | 1 k  | 5 k  | 10 k  | Mode    |
|-----------------------|------|------|------|------|------|-------|---------|
| 0                     | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.025 | ACV/ACC |
| 0                     | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 60                    | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 90                    | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.025 | ACV/ACV |

NVLAP Code: 20/E15  
Phase

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| Range in degrees | Frequency in Hz | Best Uncertainty ( $\pm$ ) in $\text{degrees}^{+1}$ |
|------------------|-----------------|-----------------------------------------------------|
| 0                | 60 to 65        | 0.025                                               |
| 0                | 400 to 10 k     | 0.075                                               |
| 60               | 60              | 0.025                                               |

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| 60                                                                                                                                                                                                                                                                                 | 400 to 10 k        | 0.075                                                                                                                                                                                                                                                                              |              |
| 90                                                                                                                                                                                                                                                                                 | 60                 | 0.025                                                                                                                                                                                                                                                                              |              |
| 90                                                                                                                                                                                                                                                                                 | 400 to 10 k        | 0.075                                                                                                                                                                                                                                                                              |              |
| 5520 A Console                                                                                                                                                                                                                                                                     |                    |                                                                                                                                                                                                                                                                                    |              |
| Range<br>Phase<br>(degrees)                                                                                                                                                                                                                                                        | Reference<br>Volts | Signal Amps                                                                                                                                                                                                                                                                        | Frequency Hz |
| 0                                                                                                                                                                                                                                                                                  | 0.03               | 0.3                                                                                                                                                                                                                                                                                | 65           |
| 0                                                                                                                                                                                                                                                                                  | 0.03               | 0.3                                                                                                                                                                                                                                                                                | 1 k          |
| 0                                                                                                                                                                                                                                                                                  | 0.03               | 0.3                                                                                                                                                                                                                                                                                | 30 k         |
| 0                                                                                                                                                                                                                                                                                  | 0.2                | 2                                                                                                                                                                                                                                                                                  | 65           |
| 0                                                                                                                                                                                                                                                                                  | 0.05               | 5                                                                                                                                                                                                                                                                                  | 65           |
| 0                                                                                                                                                                                                                                                                                  | 0.05               | 5                                                                                                                                                                                                                                                                                  | 400          |
| 60                                                                                                                                                                                                                                                                                 | 0.03               | 0.3                                                                                                                                                                                                                                                                                | 65           |
| 60                                                                                                                                                                                                                                                                                 | 0.2                | 2                                                                                                                                                                                                                                                                                  | 65           |
| 60                                                                                                                                                                                                                                                                                 | 0.2                | 20                                                                                                                                                                                                                                                                                 | 65           |
| 60                                                                                                                                                                                                                                                                                 | 0.2                | 20                                                                                                                                                                                                                                                                                 | 400          |
| 0                                                                                                                                                                                                                                                                                  | 3.3                | 0.3                                                                                                                                                                                                                                                                                | 65           |
| Best Uncertainty ( $\pm$ ) in<br>degrees <sup>max</sup>                                                                                                                                                                                                                            |                    | Remarks                                                                                                                                                                                                                                                                            |              |
| 0.015                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.025                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.5                                                                                                                                                                                                                                                                                |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.015                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.022                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.025                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.015                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.015                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.015                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.030                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| 0.016                                                                                                                                                                                                                                                                              |                    | ACV/ACC                                                                                                                                                                                                                                                                            |              |
| June 30, 2001                                                                                                                                                                                                                                                                      |                    | June 30, 2001                                                                                                                                                                                                                                                                      |              |
| Effective through                                                                                                                                                                                                                                                                  |                    | Effective through                                                                                                                                                                                                                                                                  |              |
| David F. Alderman                                                                                                                                                                                                                                                                  |                    | David F. Alderman                                                                                                                                                                                                                                                                  |              |
| For the National Institute of Standards and Technology                                                                                                                                                                                                                             |                    | For the National Institute of Standards and Technology                                                                                                                                                                                                                             |              |
| NVLAP-025 (11-95)                                                                                                                                                                                                                                                                  |                    | NVLAP-025 (11-95)                                                                                                                                                                                                                                                                  |              |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                                                                                                                                                  |        | ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                                                                                                                                                  |     |
| <b>Scope of Accreditation</b>                                                                                                                                                                                                                                                    |        | <b>Scope of Accreditation</b>                                                                                                                                                                                                                                                    |     |
| CALIBRATION LABORATORIES                                                                                                                                                                                                                                                         |        | CALIBRATION LABORATORIES                                                                                                                                                                                                                                                         |     |
| FLUKE CORPORATION PRIMARY STANDARDS LABORATORY                                                                                                                                                                                                                                   |        | FLUKE CORPORATION PRIMARY STANDARDS LABORATORY                                                                                                                                                                                                                                   |     |
| 0                                                                                                                                                                                                                                                                                | 3.3    | 2                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 3.3    | 5                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 3.3    | 5                                                                                                                                                                                                                                                                                | 400 |
| 90                                                                                                                                                                                                                                                                               | 3.3    | 0.3                                                                                                                                                                                                                                                                              | 65  |
| 90                                                                                                                                                                                                                                                                               | 3.3    | 2                                                                                                                                                                                                                                                                                | 65  |
| 90                                                                                                                                                                                                                                                                               | 3.3    | 20                                                                                                                                                                                                                                                                               | 65  |
| 90                                                                                                                                                                                                                                                                               | 3.3    | 20                                                                                                                                                                                                                                                                               | 400 |
| 0                                                                                                                                                                                                                                                                                | 33     | 0.3                                                                                                                                                                                                                                                                              | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 2                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 5                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 5                                                                                                                                                                                                                                                                                | 400 |
| 90                                                                                                                                                                                                                                                                               | 33     | 0.3                                                                                                                                                                                                                                                                              | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 2                                                                                                                                                                                                                                                                                | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 20                                                                                                                                                                                                                                                                               | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 20                                                                                                                                                                                                                                                                               | 400 |
| 0                                                                                                                                                                                                                                                                                | 33     | 0.3                                                                                                                                                                                                                                                                              | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 2                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 5                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 33     | 5                                                                                                                                                                                                                                                                                | 400 |
| 90                                                                                                                                                                                                                                                                               | 33     | 0.3                                                                                                                                                                                                                                                                              | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 2                                                                                                                                                                                                                                                                                | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 20                                                                                                                                                                                                                                                                               | 65  |
| 90                                                                                                                                                                                                                                                                               | 33     | 20                                                                                                                                                                                                                                                                               | 400 |
| 0                                                                                                                                                                                                                                                                                | 60, 90 | 3                                                                                                                                                                                                                                                                                | 65  |
| 0                                                                                                                                                                                                                                                                                | 60, 90 | 3                                                                                                                                                                                                                                                                                | 400 |
| 0                                                                                                                                                                                                                                                                                | 60, 90 | 3                                                                                                                                                                                                                                                                                | 1 k |
| June 30, 2001                                                                                                                                                                                                                                                                    |        | June 30, 2001                                                                                                                                                                                                                                                                    |     |
| Effective through                                                                                                                                                                                                                                                                |        | Effective through                                                                                                                                                                                                                                                                |     |
| David F. Alderman                                                                                                                                                                                                                                                                |        | David F. Alderman                                                                                                                                                                                                                                                                |     |
| For the National Institute of Standards and Technology                                                                                                                                                                                                                           |        | For the National Institute of Standards and Technology                                                                                                                                                                                                                           |     |
| NVLAP-025 (11-95)                                                                                                                                                                                                                                                                |        | NVLAP-025 (11-95)                                                                                                                                                                                                                                                                |     |



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CALIBRATION LABORATORIES

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

|           |    |   |      |       |         |
|-----------|----|---|------|-------|---------|
| 0, 60, 90 | 3  | 3 | 5 k  | 0.025 | ACV/ACV |
| 0, 60, 90 | 3  | 3 | 10 k | 0.025 | ACV/ACV |
| 0, 60, 90 | 3  | 3 | 30 k | 0.300 | ACV/ACV |
| 90        | 30 | 3 | 65   | 0.015 | ACV/ACV |
| 90        | 50 | 3 | 65   | 0.016 | ACV/ACV |

Phase  
Factory Annex, 5520A Console

|                         |                        |                                                     |
|-------------------------|------------------------|-----------------------------------------------------|
| <b>Range in degrees</b> | <b>Frequency in Hz</b> | <b>Best Uncertainty (±) in degrees<sup>nm</sup></b> |
| 0 to 90                 | 65 to 1 k              | 0.025                                               |
| 0 to 90                 | 5 k to 10 k            | 0.1                                                 |
| 0 to 90                 | 30 k                   | 0.5                                                 |

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CALIBRATION LABORATORIES

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

|                           |                                                 |                |
|---------------------------|-------------------------------------------------|----------------|
| <b>TIME AND FREQUENCY</b> | <b>Best Uncertainty (±) in ppm<sup>nm</sup></b> | <b>Remarks</b> |
| NVLAP Code: 20/F01        |                                                 |                |
| Frequency                 |                                                 |                |
| Range                     | 1 mHz                                           | GPS Console    |
| 10 mHz                    |                                                 |                |
| <b>Range in Hz</b>        | <b>Best Uncertainty (±) in ppm<sup>nm</sup></b> | <b>Remarks</b> |
| 119 to 120                | 1                                               | 5500A Console  |
| 1000                      | 1                                               | 5500A Console  |
| 100000                    | 1                                               | 5500A Console  |

NVLAP Code: 20/F01

At Factory Annex Multiproduct Calibrators Similar to Fluke 5500A

|                    |                                                 |                |
|--------------------|-------------------------------------------------|----------------|
| <b>Range in Hz</b> | <b>Best Uncertainty (±) in ppm<sup>nm</sup></b> | <b>Remarks</b> |
| 119                | 5                                               | 5500A Console  |
| 120                | 5                                               | 5500A Console  |
| 1000               | 5                                               | 5500A Console  |
| 100000             | 5                                               | 5500A Console  |

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| Frequency       | Range in Hz | Best Uncertainty ( $\pm$ ) in ppm <sup>95%</sup> | Remarks                      |
|-----------------|-------------|--------------------------------------------------|------------------------------|
| 119             |             | 0.10                                             | 5520A Console                |
| 120             |             | 0.10                                             | 5520A Console                |
| 1000            |             | 0.10                                             | 5520A Console                |
| 100000          |             | 0.10                                             | 5520A Console                |
| 119 to 100000 k |             | 0.8                                              | Factory Annex, 5520A Console |

THERMODYNAMICS

NVLAP Code: 20/T03

Temperature

| Range in °C | Best Uncertainty ( $\pm$ ) in mK <sup>95%</sup> | Remarks |
|-------------|-------------------------------------------------|---------|
| -40 to -197 | 11                                              |         |
| -1 to -40   | 8                                               |         |
| -1 to 1     | 5                                               |         |
| 0.01        | 4.5                                             |         |
| 1 to 150    | 10                                              |         |

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| Range in °C                                                        | Best Uncertainty ( $\pm$ ) in °C <sup>95%</sup> | Remarks                                                 |
|--------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
| 150 to 350                                                         | 15                                              |                                                         |
| NVLAP Code: 20/T06                                                 |                                                 |                                                         |
| Thermocouple Temperature                                           |                                                 |                                                         |
| Simulated TC Temperature with UUT Sourcing, 5500 Console Measuring |                                                 |                                                         |
| 0                                                                  | 0.03                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| 100                                                                | 0.03                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| -100                                                               | 0.03                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| 1000                                                               | 0.04                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| -1000                                                              | 0.04                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| 10000                                                              | 0.08                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |
| -10000                                                             | 0.08                                            | 10 $\mu$ V/C Linear Mode, Voltage Simulates Temperature |

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NVLAP Code: 20T08  
Simulated TC Temperature with UUT Measurement, 5500A Consoles

| Range in °C | Function                                              | Best Uncertainty (±) in °C <sub>new</sub> | Remarks |
|-------------|-------------------------------------------------------|-------------------------------------------|---------|
| 0           | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature | 0.05                                      |         |
| 10000       | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature | 0.12                                      |         |
| -10000      | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature | 0.12                                      |         |
| 30000       | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature | 0.24                                      |         |
| -30000      | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature | 0.24                                      |         |

Thermocouple Temperature

|    |                                |       |  |
|----|--------------------------------|-------|--|
| 23 | Type K, 5500A & 5520A Consoles | 0.018 |  |
|----|--------------------------------|-------|--|

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

NVLAP Code: 20T08  
Simulated TC Temperature with UUT Measurement, 5520A Console Measuring

| Range in °C | Function | Best Uncertainty (±) in °C <sub>new</sub> | Remarks                                               |
|-------------|----------|-------------------------------------------|-------------------------------------------------------|
| 0           | Source   | 0.1                                       | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature |
| ±10000      | Source   | 0.16                                      |                                                       |
| 0           | Measure  | 0.1                                       | 10 µV/C Linear Mode, Voltage<br>Simulates Temperature |
| 23          | Measure  | 0.05                                      |                                                       |
| ±10000      | Measure  | 0.2                                       |                                                       |
| ±30000      | Measure  | 0.4                                       |                                                       |

Thermocouple Temperature

|     |                                                                        |      |  |
|-----|------------------------------------------------------------------------|------|--|
| 100 | Simulated TC Temperature with UUT Measurement, 5520A Console Measuring | 0.02 |  |
|-----|------------------------------------------------------------------------|------|--|

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| Value  | Function                                                      | Best Uncertainty ( $\pm$ ) in $^{\circ}\text{C}^{\text{max}}$ |
|--------|---------------------------------------------------------------|---------------------------------------------------------------|
| -100   | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.02                                                          |
| 1000   | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.025                                                         |
| -1000  | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.025                                                         |
| 10000  | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.07                                                          |
| -10000 | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.07                                                          |

Simulated TC Temperature with UUT Measurement, 5520A Console Sourcing

|        |                                                               |      |
|--------|---------------------------------------------------------------|------|
| 0      | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.02 |
| 10000  | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.12 |
| -10000 | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.12 |
| 30000  | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.24 |

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| Value  | Function                                                      | Best Uncertainty ( $\pm$ ) in $^{\circ}\text{C}^{\text{max}}$ |
|--------|---------------------------------------------------------------|---------------------------------------------------------------|
| -30000 | 10 $\mu\text{V/C}$ Linear Mode, Voltage Simulates Temperature | 0.24                                                          |

Factory Annex, 5520A Console

| Range in $^{\circ}\text{C}$ | Function | Best Uncertainty ( $\pm$ ) in $^{\circ}\text{C}^{\text{max}}$ |
|-----------------------------|----------|---------------------------------------------------------------|
| 0 to $\pm 1000$             | Source   | 0.06                                                          |
| $\pm 10000$                 | Source   | 0.1                                                           |
| 0, 23                       | Measure  | 0.04                                                          |
| $\pm 10000$                 | Measure  | 0.15                                                          |
| $\pm 30000$                 | Measure  | 0.25                                                          |

1. Represents an expanded uncertainty at a level of confidence of 99%; coverage factor  $k$  is determined by the test statistics.
2. Approximate value. Actual value determined by the test statistics.
3.  $E$  = Actual Voltage
4. 1000 V Limit is 8 kHz.
5. 500 kHz @ 0.33 V
6. 90 kHz @ 30 V
7. 18 kHz @ 300 V, 8 kHz for voltage  $> 1000$  V
8. 5 kHz @ 1000 V
9. Above 200  $\mu\text{F}$  the method of calibration is a charge technique with charge currents ranging from 60  $\mu\text{A}$  at 200  $\mu\text{F}$  to 30 mA at 110 mF.

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**CALIBRATION LABORATORIES**

**CDRH X-RAY CALIBRATION LABORATORY**  
12720 Twinbrook Parkway, HFEZ-143  
Rockville, MD 20857  
Mr. Frank Cerra  
Phone: 301-443-2536 x123 Fax: 301-443-9101  
E-Mail: fxc@cdrrh.fda.gov  
URL: http://www.fda.gov/cdrh

This facility has demonstrated compliance with the NVLAP Criteria for Calibration Laboratories under the field of Ionizing Radiation for the following:

|                                                                               |                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Procedures/Instruments</b></p> <p>Calibration of Survey Instruments</p> | <p><b>Radiation Types</b></p> <p>X-ray Beam Codes M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, and the H50 Beam Code over the range 0.5 mR/h to 4 mR/s, with total uncertainty in the reference field value of <math>\pm 5</math> percent.</p> |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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**CALIBRATION LABORATORIES**

**CDRH X-RAY CALIBRATION LABORATORY**

Calibration of Instruments for Diagnostic Level

X-ray Beam Codes M20, M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

Mammography entrance Beam Codes Mo/Mo25, Mo/Mo28, Mo/Mo30, Mo/Mo35, Mo/Rh28, Mo/Rh32, Rh/Rh30, and Rh/Rh35 over the Exposure Rate Range 5 mR/s to 200 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

Mammography exit Beam Codes Mo/Mo25X, Mo/Mo28X, Mo/Mo30X, Mo/Mo35X, Rh/Rh30X, and Rh/Rh35X over the Exposure Rate Range 2 mR/s to 17 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

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**CALIBRATION LABORATORIES**

**CDRH X-RAY CALIBRATION LABORATORY**

Calibration of Reference-Class Instruments

X-ray Beam Codes M20, M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

Mammography entrance Beam Codes Mo/Mo25, Mo/Mo28, Mo/Mo30, Mo/Mo35, Mo/Rh28, Mo/Rh30, Mo/Rh32, Rh/Rh30, and Rh/Rh35 over the Exposure Rate Range 5 mR/s to 200 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

Mammography exit Beam Codes Mo/Mo25X, Mo/Mo28X, Mo/Mo30X, Mo/Mo35X, Rh/Rh30X, and Rh/Rh35X over the Exposure Rate Range 2 mR/s to 17 mR/s, with total uncertainty in the reference field value of  $\pm 3$  percent.

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For the National Institute of Standards and Technology

NVLAP-02S (11-95)

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ISO 9002:1987

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NVLAP LAB CODE 105020-0

## Scope of Accreditation

**CALIBRATION LABORATORIES**

**PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE**

Battelle Boulevard  
P.O. Box 999  
Richland, WA 99352  
Mr. R. Kim Piper  
Phone: 509-376-6187 Fax: 509-376-1992  
E-Mail: kim.piper@pnl.gov  
URL: http://www.pnl.gov/esls/

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|                                                  |                                   |                                                        |       |
|--------------------------------------------------|-----------------------------------|--------------------------------------------------------|-------|
| CALIBRATION LABORATORIES                         |                                   | NVLAP LAB CODE 105020-0                                |       |
| PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE |                                   | Page 2 of 6                                            |       |
| Beta                                             | M200                              | 4 to 650 R/h                                           | 1.5%  |
|                                                  | S60                               | 1 to 175 R/h                                           | 1.5%  |
|                                                  | S75                               | 5 to 700 R/h                                           | 1.5%  |
|                                                  | H40                               | 0.02 to 4 R/h                                          | 1.5%  |
|                                                  | H50                               | 0.05 to 10 R/h                                         | 1.5%  |
|                                                  | H100                              | 0.02 to 3 R/h                                          | 1.5%  |
|                                                  | H150                              | 1 to 15 R/h                                            | 1.5%  |
|                                                  | H200                              | 0.9 to 9 R/h                                           | 1.5%  |
|                                                  | H250                              | 0.9 to 9 R/h                                           | 1.5%  |
|                                                  | H300                              | 0.6 to 3 R/h                                           | 1.5%  |
| Beta                                             | <sup>234</sup> Tl                 | 0.9 rad/h                                              | 3.3%  |
|                                                  | <sup>90</sup> Sr/ <sup>90</sup> Y | 0.4 to 19 rad/h                                        | 3.3%  |
| Neutron                                          | <sup>252</sup> Cf Bare            | 0.014 to 4.8 rem/h                                     | 14.0% |
|                                                  | <sup>252</sup> Cf Moderated       | 0.004 to 1.1 rem/h                                     | 21.9% |
| December 31, 2001                                |                                   | David Z. Alderman                                      |       |
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### CALIBRATION LABORATORIES

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PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE

#### Calibration Category

#### Radiation Type or Beam Code

#### Nominal Range<sup>note 1</sup>

#### Uncertainty of Delivered Quantity ( $\pm$ )<sup>year 1,2</sup>

### IRRADIATION OF PERSONNEL DOSIMETERS

#### Gamma

<sup>241</sup>Am

$\geq 0.002$  R

5.4 %

<sup>137</sup>Cs

$\geq 0.020$  R

1.6 %

<sup>60</sup>Co

$\geq 0.025$  R

1.6 %

#### X-ray

M30

$\geq 0.025$  R

2.4 %

M50

$\geq 0.035$  R

2.4 %

M60

$\geq 0.025$  R

2.4 %

M100

$\geq 0.025$  R

2.4 %

M150

$\geq 0.035$  R

2.4 %

M200

$\geq 0.035$  R

2.4 %

S60

$\geq 0.010$  R

2.4 %

S75

$\geq 0.040$  R

2.4 %

H40

$\geq 0.0002$  R

2.4 %

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CALIBRATION LABORATORIES

PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE

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| Calibration Category | Radiation Type or Beam Code | Nominal Intensity Range <sup>1</sup> | Uncertainty of Reference Field ( $\pm$ ) <sup>1</sup> |
|----------------------|-----------------------------|--------------------------------------|-------------------------------------------------------|
| Gamma                | <sup>241</sup> Am           | 0.125 R/h                            | 5.2%                                                  |
|                      | <sup>137</sup> Cs           | 0.1 to 250 R/h                       | 1.5%                                                  |
|                      | <sup>60</sup> Co            | 4 to 60,000 R/h                      | 1.5%                                                  |
|                      |                             |                                      |                                                       |
|                      |                             |                                      |                                                       |
| X-ray                | M30                         | 3 to 500 R/h                         | 1.5%                                                  |
|                      | M50                         | 4 to 600 R/h                         | 1.5%                                                  |
|                      | M60                         | 3 to 450 R/h                         | 1.5%                                                  |
|                      | M100                        | 3 to 500 R/h                         | 1.5%                                                  |
|                      | M150                        | 4 to 550 R/h                         | 1.5%                                                  |
|                      | M200                        | 4 to 650 R/h                         | 1.5%                                                  |
|                      | S60                         | 1 to 175 R/h                         | 1.5%                                                  |
|                      | S75                         | 5 to 700 R/h                         | 1.5%                                                  |
|                      | H40                         | 0.02 to 4 R/h                        | 1.5%                                                  |
|                      | H50                         | 0.05 to 10 R/h                       | 1.5%                                                  |

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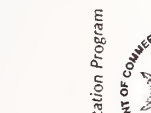
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PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE

|         |                                   |                    |       |
|---------|-----------------------------------|--------------------|-------|
| Beta    | H100                              | 0.02 to 3 R/h      | 1.5%  |
|         | H150                              | 1 to 15 R/h        | 1.5%  |
|         | H200                              | 0.9 to 9 R/h       | 1.5%  |
|         | H250                              | 0.9 to 9 R/h       | 1.5%  |
|         | H300                              | 0.6 to 3 R/h       | 1.5%  |
|         |                                   |                    |       |
|         | <sup>234</sup> Tl                 | 0.9 rad/h          | 3.3%  |
|         | <sup>90</sup> Sr/ <sup>90</sup> Y | 0.4 to 19 rad/h    | 3.3%  |
|         |                                   |                    |       |
| Neutron | <sup>252</sup> Cf Bare            | 0.014 to 4.8 rad/h | 14.0% |
|         | <sup>252</sup> Cf Moderated       | 0.004 to 1.1 rad/h | 21.9% |

1. Values listed at the 95% confidence level.

2. Uncertainties are valid for nominal intensity range listed.

3. For calibration outside of the nominal intensity range shown, uncertainties would be determined commensurate with the parameters of the reference field calibration.

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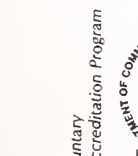
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**CALIBRATION LABORATORIES**

**IPS CORPORATION**

1878-1, Harumiya Ono, Tatsuno-machi  
Kamuna-gun, Nagano-ken, PO Box 399-0601  
Nagano 399-0601  
JAPAN

Mr. Takashi Maruyama  
Phone: +81-266-44-5200 Fax: +81-266-44-5300  
E-Mail: maruyama@ips-emc.co.jp  
URL: http://www.ips-emc.co.jp

**ELECTROMAGNETICS - RF Microwave**

NVLAP Code: 20/R08

Microwave Antenna Parameters

| Range                                         | Best Uncertainty ( $\pm$ ppm) | Remarks                   |
|-----------------------------------------------|-------------------------------|---------------------------|
| Dipole Antenna (such as the VHA9103/UHA9105)  |                               |                           |
| 30 to 80 MHz (tuned 80 MHz)                   | 1.1 dB                        | Horizontal Antenna Factor |
| 30 to 300 MHz                                 | 1.1 dB                        | Horizontal Antenna Factor |
| 300 to 1000 MHz                               | 1.3 dB                        | Horizontal Antenna Factor |
| Biconical Antenna (such as the BBA9106)       |                               |                           |
| 30 to 300 MHz                                 | 1.2 dB                        | Horizontal Antenna Factor |
| Log-Peliiodoc Antenna (such as the UHALP9107) |                               |                           |
| 300 to 1000 MHz                               | 1.2 dB                        | Horizontal Antenna Factor |

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**CALIBRATION LABORATORIES**

**IPS CORPORATION**

Bi-log Antenna (such as the CBL6112B)

30 to 300 MHz

300 to 1000 MHz

LISN

0.1 to 30 MHz

0.1 to 30 MHz

CDN

0.1 to 10 MHz

10 to 30 MHz

30 to 100 MHz

100 to 230 MHz

0.1 to 10 MHz

10 to 230 MHz

RF Amplifier

10 to 1000 MHz

ESD Simulators

0 to 15 kV

0 to 15 kV

1.4 dB

1.4 dB

0.5 dB

0.5 dB

1.2 dB

0.7 dB

0.6 dB

0.8 dB

0.5 dB

0.5 dB

1.4 dB

0.6 dB

46.9 pS

Horizontal Antenna Factor

Horizontal Antenna Factor

Impedance

Insertion Loss

Impedance

Impedance

Impedance

Impedance

Insertion Loss

Insertion Loss

Gain

Amplitude

Time at 500 pS/div

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**CALIBRATION LABORATORIES**

IPS CORPORATION

**GE INDUSTRIAL SYSTEMS**

92 Otis Street  
Rome, NY 13441  
Mr. Timothy S. Eldred  
Phone: 315-334-7605 Fax: 315-334-7660  
E-Mail: Timothy.Eldred@indsys.ge.com

**NVLAP LAB CODE 200029-0**

**EFT/Burst**

0 to 2 kV

1 to 2 kV

**EM Clamp**

0.1 to 230 MHz

**Current Probe**

0.1 to 230 MHz

**Amplitude**

0.7 dB

46.9 pS

**Time at 500 pS/div**

Insertion Loss

0.5 dB

Insertion Loss

0.5 dB

**Remarks**

1. Represents an expanded uncertainty using a coverage factor, k=2.

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**CALIBRATION LABORATORIES**

GE INDUSTRIAL SYSTEMS

92 Otis Street  
Rome, NY 13441  
Mr. Timothy S. Eldred  
Phone: 315-334-7605 Fax: 315-334-7660  
E-Mail: Timothy.Eldred@indsys.ge.com

**NVLAP LAB CODE 200029-0**

**DIMENSIONAL**

NVLAP Code: 20/D03

Gage Blocks - Steel and Chrome Carbide

**Range**

thru 1.0 in

> 1.0 thru 2.0 in

> 2.0 thru 3.0 in

> 3.0 thru 4.0 in

**Best Uncertainty ( $\pm y_{95\%}$ )**

2.8  $\mu$ m

3.2  $\mu$ m

3.6  $\mu$ m

4.0  $\mu$ m

**Remarks**

Laser Interferometer Height Gage

Laser Interferometer Height Gage

Laser Interferometer Height Gage

Laser Interferometer Height Gage

**ELECTROMAGNETICS/DC-LOW FREQUENCY**

NVLAP CODE: 20/E05

DC Resistance

**Value in ohms**

0.1

1

10

**Best Uncertainty in ppm ( $\pm y_{95\%}$ )**

1.0

1.0

1.0

**Remarks**

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|                                                                                     |                                                     |                                                                                                       |  |
|-------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------|--|
|  |                                                     | National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                     |                                                     |                                                                                                       |  |
| Revised 1/24/2001                                                                   |                                                     | Page 2 of 3                                                                                           |  |
| CALIBRATION LABORATORIES                                                            |                                                     | NVLAP LAB CODE 200029-0                                                                               |  |
| GE INDUSTRIAL SYSTEMS                                                               |                                                     |                                                                                                       |  |
| 100<br>1 k<br>10 k<br>100 k<br>1 M<br>10 M<br>100 M                                 | 1.0<br>1.5<br>1.5<br>4.0<br>4.6<br>6.2<br>13.4      |                                                                                                       |  |
| NVLAP Code: 20/E06<br>DC Voltage                                                    |                                                     |                                                                                                       |  |
| Range in Volts                                                                      | Best Uncertainty in ppm ( $\pm$ ) <sup>year 1</sup> | Remarks                                                                                               |  |
| 0.1                                                                                 | 3                                                   | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators                                |  |
| 1.0                                                                                 | 1.5                                                 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators                                |  |
| 10.0                                                                                | 1.2                                                 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators                                |  |
| 100.0                                                                               | 1.5                                                 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators                                |  |
| December 31, 2001                                                                   |                                                     | David T. Alderman<br>For the National Institute of Standards and Technology                           |  |
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|                                                                                   |                                                    |                                                                                                       |  |
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| CALIBRATION LABORATORIES                                                          |                                                    | NVLAP LAB CODE 200029-0                                                                               |  |
| GE INDUSTRIAL SYSTEMS                                                             |                                                    |                                                                                                       |  |
| 1000.0                                                                            | 2.0                                                | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators                                |  |
| THERMODYNAMICS<br>NVLAP Code: 20/T05<br>Pressure                                  |                                                    |                                                                                                       |  |
| Range                                                                             | Uncertainty ( $\pm$ ) of reading <sup>year 1</sup> | Remarks                                                                                               |  |
| 0.2 to 1000 psia                                                                  | 36 ppm                                             | Inert Gas                                                                                             |  |
| 0.2 to 1000 psi                                                                   | 36 ppm                                             | Inert Gas                                                                                             |  |
| 15 to 10000 psi                                                                   | 0.02%                                              | Inert Gas                                                                                             |  |
| 15 to 15000 psi                                                                   | 0.02%                                              | Fluid                                                                                                 |  |
| 1. Represents an expanded uncertainty using a coverage factor, k = 2.             |                                                    |                                                                                                       |  |
| December 31, 2001                                                                 |                                                    | David T. Alderman<br>For the National Institute of Standards and Technology                           |  |
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CALIBRATION LABORATORIES

NVLAP LAB CODE 200038-0

WEBBER GAGE DIVISION / L.S. STARRETT CO.  
24500 Detroit Road  
Cleveland, OH 44145  
Mr. David Friedel  
Phone: 440-835-0001 Fax: 440-892-9555

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**DIMENSIONAL**

NVLAP Code: 20/D03  
Gage Blocks

| Range                     | Best Uncertainty ( $\pm$ ) $\mu\text{m}$ <sup>1,2,3</sup> | Remarks                      |
|---------------------------|-----------------------------------------------------------|------------------------------|
| Standard Size Gage Blocks |                                                           |                              |
| thru 1.0 in               | 1.3 $\mu\text{m}$ <sup>1,2,3</sup>                        | Master Grade Calibration     |
| thru 25 mm                | 0.035 $\mu\text{m}$ <sup>1,2,3</sup>                      | Master Grade Calibration     |
| > 1.0 thru 4.0 in         | (0.8 + 0.5L) $\mu\text{m}$ <sup>6</sup>                   | Master Grade Calibration     |
| > 25 thru 100 mm          | (0.02 + 0.5L) $\mu\text{m}$ <sup>6</sup>                  | Master Grade Calibration     |
| > 4.0 thru 20.0 in        | (3.5 + 0.25L) $\mu\text{m}$                               | Master Grade Calibration     |
| > 100 thru 500 mm         | (0.09 + 0.25L) $\mu\text{m}$                              | Master Grade Calibration     |
| thru 4.0 in               | (1.4 + 0.6L) $\mu\text{m}$ <sup>4</sup>                   | Commercial Grade Calibration |
| thru 100 mm               | (0.035 + 0.6L) $\mu\text{m}$ <sup>5</sup>                 | Commercial Grade Calibration |
| > 4.0 thru 20.0 in        | (6.0 + 0.3L) $\mu\text{m}$                                | Commercial Grade Calibration |
| > 100 thru 500 mm         | (0.15 + 0.3L) $\mu\text{m}$                               | Commercial Grade Calibration |



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1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .  
2. Approximate value. Actual value determined by the test statistics.  
3. L is in inches or meters as appropriate.  
4. Uncertainty not less than 2.0  $\mu\text{m}$ .  
5. Uncertainty not less than 0.05  $\mu\text{m}$ .  
6. Best uncertainty is for gage blocks of chrome-carbide material. Best uncertainty for materials other than chrome-carbide may be approximately 40% larger.

| Non Standard Size Gage Blocks | 2.2 $\mu\text{m}$            | Master Grade Calibration |
|-------------------------------|------------------------------|--------------------------|
| to 1.0 in                     |                              | Master Grade Calibration |
| to 25 mm                      | 0.055 $\mu\text{m}$          | Master Grade Calibration |
| > 1.0 thru 4.6 in             | (1.6 + 0.6L) $\mu\text{m}$   | Master Grade Calibration |
| > 25 thru 117 mm              | (0.04 + 0.6L) $\mu\text{m}$  | Master Grade Calibration |
| > 4.6 thru 20.0 in            | (6.0 + 0.35L) $\mu\text{m}$  | Master Grade Calibration |
| > 117 thru 500 mm             | (0.15 + 0.35L) $\mu\text{m}$ | Master Grade Calibration |

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**CALIBRATION LABORATORIES**

**DENVER INSTRUMENT CO. WEIGHT LAB**

6542 Fig Street  
Arvada, CO 80004-1042  
Mr. Mark Fritz  
Phone: 303-431-7255 Fax: 303-423-4831  
E-Mail: mark.fritz@denverinstrument.com

**MECHANICAL**

NVLAP Code: 20/M08  
Mass

| Range | Best Uncertainty ( $\pm y_{95\%}$ ) | Remarks |
|-------|-------------------------------------|---------|
| 5 kg  | 3.8 mg                              |         |
| 4 kg  | 2.4 mg                              |         |
| 3 kg  | 2.4 mg                              |         |
| 2 kg  | 0.26 mg                             |         |
| 1 kg  | 0.24 mg                             |         |
| 500 g | 0.068 mg                            |         |
| 400 g | 0.071 mg                            |         |
| 300 g | 0.067 mg                            |         |
| 200 g | 0.055 mg                            |         |
| 160 g | 0.033 mg                            |         |

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**CALIBRATION LABORATORIES**

**DENVER INSTRUMENT CO. WEIGHT LAB**

|        |           |
|--------|-----------|
| 150 g  | 0.037 mg  |
| 100 g  | 0.034 mg  |
| 50 g   | 0.0149 mg |
| 40 g   | 0.0071 mg |
| 30 g   | 0.0068 mg |
| 20 g   | 0.0065 mg |
| 10 g   | 0.0065 mg |
| 5 g    | 0.0050 mg |
| 3 g    | 0.0034 mg |
| 2 g    | 0.0044 mg |
| 1 g    | 0.0045 mg |
| 500 mg | 0.0012 mg |
| 300 mg | 0.0012 mg |
| 200 mg | 0.0012 mg |
| 100 mg | 0.0012 mg |
| 50 mg  | 0.0012 mg |
| 30 mg  | 0.0012 mg |

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For the National Institute of Standards and Technology

NVLAP-02S (11-95)

**INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued**

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CALIBRATION LABORATORIES

DENVER INSTRUMENT CO. WEIGHT LAB

NVLAP LAB CODE 200106-0

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|       |           |  |
|-------|-----------|--|
| 20 mg | 0.0012 mg |  |
| 10 mg | 0.0012 mg |  |
| 5 mg  | 0.0012 mg |  |
| 3 mg  | 0.0012 mg |  |
| 2 mg  | 0.0012 mg |  |
| 1 mg  | 0.0012 mg |  |

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1. Represents an expanded uncertainty using a coverage factor,  $k = 2$ .

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## Scope of Accreditation

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**CALIBRATION LABORATORIES**

**HONEYWELL FM&T METROLOGY**

2000 East 95th Street  
P.O. Box 419159  
Kansas City, MO 64141-6159  
Mr. Roger N. Burton  
Phone: 816-997-5431 Fax: 816-997-3856  
E-Mail: rburton@hkp.com

**DIMENSIONAL**

**NVLAP Code: 20/D01**  
Angle Blocks

**Range**  
up to 45 °

**Best Uncertainty ( $\pm y_{95\%}$ )**  
1.1 arc seconds

**Remarks**  
Comparison Method

---

**Autocollimators**

0 to 600 arc seconds

**Small Angle Generator**

(0.3 arc seconds + 0.25% of angle)

---

**Index Table/Polygons**

0 to 360 °  
(in 10 ° or 30 ° increments)

**3 Stack Method**

0.6 arc seconds

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CALIBRATION LABORATORIES      HONEYWELL FM&T METROLOGY

|                     |                                    |                            |  |
|---------------------|------------------------------------|----------------------------|--|
| Optical Comparators |                                    |                            |  |
| Length up to 12 in  | (0.0002 + 30L) in <sup>max 2</sup> | Magnifications<br>Standard |  |
| Angle 0 to 360 °    | 0.1 °                              | Angle Blocks               |  |

NVLAP Code: 20/D03  
Gage Blocks

| Range              | Best Uncertainty (±) y <sup>max 1, 4</sup> | Remarks    |  |
|--------------------|--------------------------------------------|------------|--|
| up to 4 in         | (3.2 + .88L) μm <sup>max 2</sup>           | Comparison |  |
| > 4 in to 20 in    | (5.8 + .53L) μm <sup>max 2</sup>           | Comparison |  |
| up to 100 mm       | (0.081 + .88L) μm <sup>max 3</sup>         | Comparison |  |
| > 100 mm to 500 mm | (0.161 + .41L) μm <sup>max 3</sup>         | Comparison |  |

NVLAP Code: 20/D04  
Laser Frequency/Wavelength

| Laser Type | Best Uncertainty (±) | Remarks    |  |
|------------|----------------------|------------|--|
| HeNe       | 0.05 ppm             | Comparison |  |

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CALIBRATION LABORATORIES      HONEYWELL FM&T METROLOGY

|                                     |                    |                                                  |                                                              |
|-------------------------------------|--------------------|--------------------------------------------------|--------------------------------------------------------------|
| NVLAP Code: 20/D05<br>Length        |                    |                                                  |                                                              |
| Stage Micrometers (Chrome on Glass) | Range<br>0 to 2 in | Best Uncertainty (±) y <sup>max 1</sup><br>18 μm | Remarks<br>Laser Interferometer with Laser<br>Edge Detection |

Unidirectional Step Gages

|            |                                   |                         |  |
|------------|-----------------------------------|-------------------------|--|
| 0 to 24 in | (20 μm + 1.8L) y <sup>max 2</sup> | CMM with Bi-swing Probe |  |
|------------|-----------------------------------|-------------------------|--|

Inspection Masters

|              |                        |                                                   |  |
|--------------|------------------------|---------------------------------------------------|--|
| 0 to 2 in    | Length 18 μm           | Laser Interferometer with Laser<br>Edge Detection |  |
| > 2 to 12 in | Length 32 μm           | Laser Interferometer with Laser<br>Edge Detection |  |
|              | Perpendicularity 8 ppm | CMM with Video Probe                              |  |

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HONEYWELL FM&T METROLOGY

|                            |                                    |                                 |
|----------------------------|------------------------------------|---------------------------------|
| Magnification Scales       | 0.0003 in                          | CMM with Video Probe            |
| up to 24 in                |                                    |                                 |
| Micrometer Masters         | 60 $\mu$ m                         | Single - Axis Measuring Machine |
| 0 to 3 in                  |                                    |                                 |
| Precision Micrometer Heads | 35 $\mu$ m                         | Laser Interferometer            |
| 0 to 2 in                  |                                    |                                 |
| (0 to 50 mm)               |                                    |                                 |
| 1-D Ball Plates            | (30 $\mu$ m + 2L) <sup>max 2</sup> | CMM Single - Axis Method        |
| up to 48 in                |                                    |                                 |
| Squares                    | 30 $\mu$ m                         | CMM, Self Closing Method        |
| up to 24 in by 36 in       |                                    |                                 |
| Straight Edges             | 5 $\mu$ m                          | CMM, Reversal Method            |
| up to 48 in                |                                    |                                 |
| Dial Calipers              | 0.002 in                           | Gage Blocks                     |
| $\leq 12$ in               |                                    |                                 |

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HONEYWELL FM&T METROLOGY

|                                                                          |                                                 |                                                                                   |                                                                           |
|--------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| NVLAP Code: 20/D07<br>Thread Measuring Wires                             | Range<br>All 29 ° and 60 ° Wires                | Best Uncertainty ( $\pm y^{max 1}$ )<br>8.0 $\mu$ m                               | Remarks<br>Direct Measurement                                             |
| NVLAP Code: 20/D08<br>Optical Reference Planes<br>Optical Flats, Mirrors | Range<br>0 to 12 in<br>0 to 12 in<br>0 to 12 in | Best Uncertainty ( $\pm y^{max 1}$ )<br>1.2 $\mu$ m<br>2.0 $\mu$ m<br>4.0 $\mu$ m | Remarks<br>3 Flat Method<br>Interferometer Method<br>Comparison to Master |
| NVLAP Code: 20/D09<br>Roundness                                          | Range<br>up to 18 in Diameter                   | Best Uncertainty ( $\pm y^{max 1}$ )<br>3 $\mu$ m                                 | Remarks<br>Roundness Machine                                              |

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|                                                                                     |                                                                                                  |                                                                                                       |              |
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| <h2 style="text-align: center;">Scope of Accreditation</h2>                         |                                                                                                  |                                                                                                       |              |
| CALIBRATION LABORATORIES                                                            |                                                                                                  | HONEYWELL FM&T METROLOGY                                                                              |              |
| NVLAP Code: 20/D11<br>Spherical Diameter Master Balls                               |                                                                                                  | NVLAP LAB CODE 200108-0                                                                               |              |
| <b>Range</b><br>1/16 to 1.0 in<br>( 1 to 25 mm)                                     | <b>Best Uncertainty (<math>\pm y^{95\%}</math>)</b><br>9 $\mu$ m                                 | <b>Remarks</b><br>Comparison to Master                                                                | Page 6 of 21 |
| Calibration Spheres<br>to 1 in (25 mm)                                              |                                                                                                  |                                                                                                       |              |
| 11 $\mu$ m Diameter<br>Comparison to Master                                         |                                                                                                  |                                                                                                       |              |
| 5 $\mu$ m Sphericity<br>Roundness                                                   |                                                                                                  |                                                                                                       |              |
| OD Micrometers<br>up to 3 in<br>(0.0002 + L/50000) in <sup>nom</sup>                |                                                                                                  |                                                                                                       |              |
| Micrometer Master                                                                   |                                                                                                  |                                                                                                       |              |
| NVLAP Code: 20/D12<br>Surface Plates                                                |                                                                                                  | NVLAP LAB CODE 200108-0                                                                               |              |
| <b>Range</b><br>Up to 8 ft Diagonal                                                 | <b>Best Uncertainty (<math>\pm y^{95\%}</math>)</b><br>(30 $\mu$ m + 2 $\mu$ m/ft <sup>2</sup> ) | <b>Remarks</b><br>Moody and Least Squares Method with Autocollimator                                  | Page 6 of 21 |
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|                                                                                                               |                                                                    |                                                                                                       |              |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------|
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| <h2 style="text-align: center;">Scope of Accreditation</h2>                                                   |                                                                    |                                                                                                       |              |
| CALIBRATION LABORATORIES                                                                                      |                                                                    | HONEYWELL FM&T METROLOGY                                                                              |              |
| NVLAP Code: 20/D14<br>Plug Gages                                                                              |                                                                    | NVLAP LAB CODE 200108-0                                                                               |              |
| <b>Range</b><br>0 to 1 in                                                                                     | <b>Best Uncertainty (<math>\pm y^{95\%}</math>)</b><br>6.5 $\mu$ m | <b>Remarks</b><br>Comparison to Master                                                                | Page 7 of 21 |
| Threaded Plug Gages - Pitch and Major Diameter per ASME B1.2, ASME B1.16M or ASME B1.5                        |                                                                    |                                                                                                       |              |
| up to 10 in                                                                                                   | P.D. 0.0001 in<br>M.D. 0.000035 in                                 | 3 - Wire P.D. Measurement                                                                             |              |
| Adj. - Thread Ring Gages - Functional Threads per ASME B1.2 (UN or UNR Thread Form), ASME B1.15 (UNJ Threads) |                                                                    |                                                                                                       |              |
| up to 10 in                                                                                                   | P.D. 0.0002 in<br>M.D. 0.0001 in                                   | Set to "W" Thread Set Master                                                                          |              |
| Thread Set Plugs - Pitch and Major Diameter per ASME B1.2, ASME B1.16M or ASME B1.5                           |                                                                    |                                                                                                       |              |
| up to 10 in                                                                                                   | P.D. 0.000035 in<br>M.D. 0.000020 in                               | 3 - Wire P.D. Measurement                                                                             |              |
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**CALIBRATION LABORATORIES**

HONEYWELL FM&T METROLOGY

**NVLAP Code: 20/D15**  
2-D Ball Plates

**Range**  
36 in x 36 in

**Best Uncertainty ( $\pm$ )<sup>95%</sup>**  
(30  $\mu$ m + 2.5L)<sup>95%</sup>

**Remarks**  
CMM Single - Axial Method

**NVLAP Code: 20/D16**  
Coordinate Measuring Machines

**Range**  
To 120 x 120 x 120 in

**Best Uncertainty ( $\pm$ )<sup>95%</sup>**  
Axial (10 + 1.5L)  $\mu$ m  
Planar (35 + 8.5L)  $\mu$ m

**Remarks**  
Parametrical Calibration

**To 24 in Volumetric**  
Diagonals

**To 56 in Volumetric**  
Diagonals

**To 36 in Volumetric**

Axial (35 + 4L)  $\mu$ m  
Planar (45 + 4L)  $\mu$ m  
Spatial (50 + 5L)  $\mu$ m

Axial (60 + 3L)  $\mu$ m  
Spatial (70 + 3L)  $\mu$ m

Axial (50 + 5L)  $\mu$ m

Step Gage  
Step Gage  
Step Gage

1-D Ball Plates  
1-D Ball Plates

2-D Ball Plates

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**CALIBRATION LABORATORIES**

HONEYWELL FM&T METROLOGY

**NVLAP Code: 20/F01**  
Frequency Dissemination

**Range**  
0.1 MHz  
1.0 MHz  
5.0 MHz  
10.0 MHz

**Best Uncertainty ( $\pm$ )<sup>95%</sup>**  
1 part in 10<sup>9</sup>  
1 part in 10<sup>9</sup>  
1 part in 10<sup>9</sup>  
1 part in 10<sup>9</sup>

**Remarks**

**Diagonals**  
Planar (50 + 7L)  $\mu$ m  
Spatial (50 + 9L)  $\mu$ m

**2-D Ball Plates**

**TIME AND FREQUENCY**

**MECHANICAL**

**NVLAP Code: 20/M06**  
Force

**Range**  
5 thru 2400 lbf  
> 2400 thru 100000 lbf  
> 100000 thru 300000 lbf

**Best Uncertainty ( $\pm$ ) in %<sup>95%</sup>**  
0.01  
0.015  
0.035

**Remarks**  
of Applied Force  
of Range  
of Range

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|                                                                                                                                                                                                   |                                           |                                                                                                                                                |  |
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| <p>HONEYWELL FM&amp;T METROLOGY</p>                                                                                                                                                               |                                           |                                                                                                                                                |  |
| <p>NVLAP Code: 20/M08<br/>Mass</p>                                                                                                                                                                |                                           |                                                                                                                                                |  |
| Range                                                                                                                                                                                             | Best Uncertainty ( $\pm$ ) in $mg^{95\%}$ | Method                                                                                                                                         |  |
| 5 kg                                                                                                                                                                                              | 19.70                                     | Direct-Reading Weighing                                                                                                                        |  |
| 3 kg                                                                                                                                                                                              | 15.12                                     | Direct-Reading Weighing                                                                                                                        |  |
| 2 kg                                                                                                                                                                                              | 12.08                                     | Direct-Reading Weighing                                                                                                                        |  |
| 1 kg                                                                                                                                                                                              | 3.832                                     | Direct-Reading Weighing                                                                                                                        |  |
| 500 g                                                                                                                                                                                             | 2.168                                     | Direct-Reading Weighing                                                                                                                        |  |
| 300 g                                                                                                                                                                                             | 1.410                                     | Direct-Reading Weighing                                                                                                                        |  |
| 200 g                                                                                                                                                                                             | 1.040                                     | Direct-Reading Weighing                                                                                                                        |  |
| 100 g                                                                                                                                                                                             | 0.598                                     | Direct-Reading Weighing                                                                                                                        |  |
| 50 g                                                                                                                                                                                              | 0.4480                                    | Direct-Reading Weighing                                                                                                                        |  |
| 30 g                                                                                                                                                                                              | 0.4010                                    | Direct-Reading Weighing                                                                                                                        |  |
| 20 g                                                                                                                                                                                              | 0.1528                                    | Direct-Reading Weighing                                                                                                                        |  |
| 10 g                                                                                                                                                                                              | 0.1002                                    | Direct-Reading Weighing                                                                                                                        |  |
| 5 g                                                                                                                                                                                               | 0.0780                                    | Direct-Reading Weighing                                                                                                                        |  |
| 3 g                                                                                                                                                                                               | 0.0423                                    | Direct-Reading Weighing                                                                                                                        |  |
| 2 g                                                                                                                                                                                               | 0.0266                                    | Direct-Reading Weighing                                                                                                                        |  |
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|                                                                                                                                                                                                 |        |                                                                                                                                              |  |
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| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                 |        | <p>NVLAP LAB CODE 200108-0</p>                                                                                                               |  |
| <p>HONEYWELL FM&amp;T METROLOGY</p>                                                                                                                                                             |        |                                                                                                                                              |  |
| 1 g                                                                                                                                                                                             | 0.0296 | Direct-Reading Weighing                                                                                                                      |  |
| 500 mg                                                                                                                                                                                          | 0.0272 | Direct-Reading Weighing                                                                                                                      |  |
| 300 mg                                                                                                                                                                                          | 0.0267 | Direct-Reading Weighing                                                                                                                      |  |
| 200 mg                                                                                                                                                                                          | 0.0265 | Direct-Reading Weighing                                                                                                                      |  |
| 100 mg                                                                                                                                                                                          | 0.0264 | Direct-Reading Weighing                                                                                                                      |  |
| 50 mg                                                                                                                                                                                           | 0.0264 | Direct-Reading Weighing                                                                                                                      |  |
| 30 mg                                                                                                                                                                                           | 0.0264 | Direct-Reading Weighing                                                                                                                      |  |
| 20 mg                                                                                                                                                                                           | 0.0045 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 10 mg                                                                                                                                                                                           | 0.0035 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 5 mg                                                                                                                                                                                            | 0.0034 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 3 mg                                                                                                                                                                                            | 0.0036 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 2 mg                                                                                                                                                                                            | 0.0034 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 1 mg                                                                                                                                                                                            | 0.0034 | Single Substitution Comparison to Reference Weights                                                                                          |  |
| 10 lb                                                                                                                                                                                           | 19.09  | Direct-Reading Weighing                                                                                                                      |  |
| <p>December 31, 2001</p>                                                                                                                                                                        |        | <p><i>David F. Alderman</i></p>                                                                                                              |  |
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**HONEYWELL FM&T METROLOGY**

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|  |          |        |                         |
|--|----------|--------|-------------------------|
|  | 8 lb     | 15.90  | Direct-Reading Weighing |
|  | 5 lb     | 12.43  | Direct-Reading Weighing |
|  | 4 lb     | 10.80  | Direct-Reading Weighing |
|  | 3 lb     | 10.11  | Direct-Reading Weighing |
|  | 2 lb     | 3.723  | Direct-Reading Weighing |
|  | 1 lb     | 1.899  | Direct-Reading Weighing |
|  | 0.5 lb   | 1.150  | Direct-Reading Weighing |
|  | 0.3 lb   | 0.821  | Direct-Reading Weighing |
|  | 0.2 lb   | 0.575  | Direct-Reading Weighing |
|  | 0.1 lb   | 0.460  | Direct-Reading Weighing |
|  | 0.05 lb  | 0.417  | Direct-Reading Weighing |
|  | 0.03 lb  | 0.1277 | Direct-Reading Weighing |
|  | 0.02 lb  | 0.1064 | Direct-Reading Weighing |
|  | 0.01 lb  | 0.0998 | Direct-Reading Weighing |
|  | 0.005 lb | 0.0518 | Direct-Reading Weighing |
|  | 0.003 lb | 0.0458 | Direct-Reading Weighing |
|  | 0.002 lb | 0.0290 | Direct-Reading Weighing |
|  | 0.001 lb | 0.0356 | Direct-Reading Weighing |

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| CALIBRATION LABORATORIES |        | HONEYWELL FM&T METROLOGY |  |
| 10 oz                    | 1.253  | Direct-Reading Weighing  |  |
| 8 oz                     | 1.150  | Direct-Reading Weighing  |  |
| 6 oz                     | 0.868  | Direct-Reading Weighing  |  |
| 5 oz                     | 0.865  | Direct-Reading Weighing  |  |
| 4 oz                     | 0.815  | Direct-Reading Weighing  |  |
| 3 oz                     | 0.551  | Direct-Reading Weighing  |  |
| 2 oz                     | 0.4850 | Direct-Reading Weighing  |  |
| 1 oz                     | 0.4250 | Direct-Reading Weighing  |  |
| 1/2 oz                   | 0.1373 | Direct-Reading Weighing  |  |
| 1/4 oz                   | 0.0985 | Direct-Reading Weighing  |  |
| 1/8 oz                   | 0.0968 | Direct-Reading Weighing  |  |
| 1/16 oz                  | 0.0482 | Direct-Reading Weighing  |  |
| 1/32 oz                  | 0.0370 | Direct-Reading Weighing  |  |
| 1/64 oz                  | 0.0356 | Direct-Reading Weighing  |  |

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HONEYWELL FM&T METROLOGY

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**NVLAP Code: 20/M11**  
Vibration/Acceleration

| Range                              | Best Uncertainty ( $\pm$ ) in $\%_{G_{rms}}$ |
|------------------------------------|----------------------------------------------|
| 0.3 g @ 10 thru 40 Hz              | 2.5                                          |
| 1 g @ 10 thru 100 Hz               | 2.5                                          |
| 2 g @ 10 thru 100 Hz               | 2.5                                          |
| 5 g @ 100 Hz                       | 2.5                                          |
| 10 g @ 30 thru <100 Hz             | 2.5                                          |
| 10 g @ 100 thru 2000 Hz            | 1.8                                          |
| 10 g @ > 2000 thru 10000 Hz        | 2.5                                          |
| Shock                              |                                              |
| 10 thru 10000 g @ 10 thru 10000 Hz | 3.5                                          |

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NVLAP LAB CODE 200108-0

**RF MICROWAVE**  
**NVLAP Code: 20/R01**  
Coaxial Air Line Standards  
Air Lines (Air-Dielectric)

| Connector Type | Quantity          | Quantity Range | Best Uncertainty ( $\pm$ ) in $\%_{G_{rms}}$ | Frequency (GHz) |
|----------------|-------------------|----------------|----------------------------------------------|-----------------|
| GR-900         | Impedance         | 50 $\Omega$    | 0.028 - 0.050 $\Omega$                       | 8.5 to 18.0     |
| APC-7          | Impedance         | 50 $\Omega$    | 0.044 - 0.080 $\Omega$                       | 18.0 to 26.5    |
| N              | Impedance         | 50 $\Omega$    | 0.044 - 0.080 $\Omega$                       | ---             |
| APC-3.5        | Impedance         | 50 $\Omega$    | 0.115 - 0.165 $\Omega$                       | ---             |
| GR-900         | Electrical Length | 3 to 30 cm     | 0.0019 - 0.0081 cm                           | ---             |
| APC-7          | Electrical Length | 3 to 30 cm     | 0.0021 - 0.028 cm                            | ---             |
| N              | Electrical Length | 3 to 15 cm     | 0.0021 - 0.014 cm                            | ---             |
| APC-3.5        | Electrical Length | 5 to 15 cm     | 0.0026 - 0.028 cm                            | ---             |

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**CALIBRATION LABORATORIES**

**HONEYWELL FM&T METROLOGY**

NVLAP Code: 20/R02  
Coaxial/Waveguide Terminations  
Reflection Coefficient (Scattering Parameter  $S_{11}$ ) on the HP8510 Vector Automatic Network Analyzer

| Connector Type | Quantity         | Quantity Range                   | Best Uncertainty ( $\pm$ year <sup>-1</sup> )<br>Frequency (GHz) |                |               |
|----------------|------------------|----------------------------------|------------------------------------------------------------------|----------------|---------------|
|                |                  |                                  | 0.05 to 8.5                                                      | 8.5 to 18.0    | 18.0 to 26.5  |
| GR-900         | $ S_{11} $       | 0 to 1                           | 0.002 - 0.005                                                    | ---            | ---           |
| APC-7          | $ S_{11} $       | 0 to 1                           | 0.0025 - 0.004                                                   | 0.004 - 0.006  | ---           |
| N              | $ S_{11} $       | 0 to 1                           | 0.0045 - 0.018                                                   | 0.012 - 0.030  | ---           |
| APC-3.5        | $ S_{11} $       | 0 to 1                           | 0.0045 - 0.0055                                                  | 0.0055 - 0.008 | 0.008 - 0.009 |
| GR-900         | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.35 - 180°                                                      | ---            | ---           |
| APC-7          | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.35 - 180°                                                      | 0.50 - 180°    | ---           |
| N              | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 1.0 - 180°                                                       | 6.50 - 180°    | ---           |
| APC-3.5        | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.40 - 180°                                                      | 0.55 - 180°    | 1.15 - 180°   |

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**HONEYWELL FM&T METROLOGY**

NVLAP Code: 20/R02  
Coaxial/Waveguide Terminations  
Reflection Coefficient (Scattering Parameter  $S_{11}$ ) on the HP8753 Vector Automatic Network Analyzer

| Connector Type | Quantity         | Quantity Range                   | Best Uncertainty ( $\pm$ year <sup>-1</sup> )<br>Frequency (MHz) |                 |     |
|----------------|------------------|----------------------------------|------------------------------------------------------------------|-----------------|-----|
|                |                  |                                  | 0.30 to 100                                                      | 100 to 3000     | --- |
| GR-900         | $ S_{11} $       | 0 to 1                           | 0.004 - 0.005                                                    | 0.005 - 0.035   | --- |
| APC-7          | $ S_{11} $       | 0 to 1                           | 0.0025 - 0.0075                                                  | 0.0025 - 0.0075 | --- |
| N              | $ S_{11} $       | 0 to 1                           | 0.0045 - 0.012                                                   | 0.0055 - 0.015  | --- |
| APC-3.5        | $ S_{11} $       | 0 to 1                           | ---                                                              | 0.0045 - 0.018  | --- |
| GR-900         | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.50 - 180°                                                      | 0.55 - 180°     | --- |
| APC-7          | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.50 - 180°                                                      | 0.50 - 180°     | --- |
| N              | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | 0.50 - 180°                                                      | 3.0 - 180°      | --- |
| APC-3.5        | ARG ( $S_{11}$ ) | -180 to 180°, $0 <  S_{11}  < 1$ | ---                                                              | 0.50 - 180°     | --- |

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NVLAP Code: 20/R12  
RF/Microwave Bolometer Units

Thermistor Mounts at Type N Connector

| Quantity           | Power Level Range | Quantity Range | Best Uncertainty ( $\pm y_{95\%}$ )<br>Frequency |
|--------------------|-------------------|----------------|--------------------------------------------------|
| Calibration Factor | -10 to 10 dB      | 0.9 to 1.0     | 1.0 to 8.5 GHz                                   |
|                    |                   |                | 0.75 - 2.3%                                      |
|                    |                   |                | 1.0 - 3.1%                                       |

NVLAP Code: 20/R13  
RF/Microwave Attenuators

Attenuation (Scattering Parameter  $S_{11}$ ) on the HP8510 Vector Automatic Network Analyzer

| Connector Type | Quantity   | Quantity Range | Best Uncertainty ( $\pm y_{95\%}$ )<br>Frequency (GHz) |
|----------------|------------|----------------|--------------------------------------------------------|
| APC-7          | $ S_{11} $ | 0 to 60 dB     | 0.05 to 8.5                                            |
| APC-3.5        | $ S_{11} $ | 0 to 60 dB     | 8.5 to 18.0                                            |
|                |            |                | 18.0 to 26.5                                           |
|                |            |                | 0.02 - 0.50 dB                                         |
|                |            |                | 0.034 - 0.30 dB                                        |
|                |            |                | ...                                                    |
|                |            |                | 0.031 - 0.29 dB                                        |
|                |            |                | 0.044 - 0.37 dB                                        |

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HONEYWELL FM&T METROLOGY

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NVLAP Code: 20/R13  
RF/Microwave Attenuators

Attenuation (Scattering Parameter  $S_{11}$ ) on the HP8753 Vector Automatic Network Analyzer

| Connector Type | Quantity   | Quantity Range | Best Uncertainty ( $\pm y_{95\%}$ )<br>Frequency (MHz) |
|----------------|------------|----------------|--------------------------------------------------------|
| APC-7          | $ S_{11} $ | 0 to 60 dB     | 0.30 to 3000                                           |
|                |            |                | 0.02 - 0.40 dB                                         |

NVLAP Code: 20/R16  
Group Delay

Attenuation (Scattering Parameter  $S_{11}$ ) on the HP8753 Vector Automatic Network Analyzer

| Connector Type            | Quantity | Delay (ns) | Best Uncertainty ( $\pm y_{95\%}$ )<br>Frequency (GHz) |
|---------------------------|----------|------------|--------------------------------------------------------|
| GR-900, APC-7, N, APC-3.5 |          | 1 to 1200  | 0.05 to 2.0                                            |
|                           |          |            | 0.005 - 0.5                                            |

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HONEYWELL FM&T METROLOGY

NVLAP Code: 20/R17  
RF/Microwave Power Meters

CW Microwave Power Meter Calibration at Type N Connector

| Quantity | Quantity Range (dBm) | Best Uncertainty ( $\pm$ ) <sup>1</sup><br>Frequency |
|----------|----------------------|------------------------------------------------------|
| Power    | -60 to -20 dBm       | 0.01 to 3.0 GHz                                      |
| Power    | -20 to +20 dBm       | 0.1 to 10 MHz                                        |
|          |                      | 0.11 dB                                              |
|          |                      | 0.10 - 0.15 dB                                       |
|          |                      | 0.16 - 0.18 dB                                       |
|          |                      | 0.10 - 0.16 dB                                       |

NVLAP Code: 20/R17  
RF/Microwave Power Meters

Peak Power Meter Calibration at Type N Connector

| Quantity | Quantity Range (dBm) | Best Uncertainty ( $\pm$ ) <sup>1</sup><br>Frequency (GHz) |
|----------|----------------------|------------------------------------------------------------|
| Power    | -20 to +20 dBm       | 1.0 to 2.0 GHz                                             |
|          |                      | 0.2 dB                                                     |

\*Power System Calibration Procedure is MW-085

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NVLAP Code: 20/R17  
RF/Microwave Power Wattmeters

| Quantity | Quantity Range (Watts) | Best Uncertainty ( $\pm$ ) <sup>1</sup><br>Frequency |
|----------|------------------------|------------------------------------------------------|
| Power    | 0.1 to 1.0 k           | 2 MHz to 1.2 GHz                                     |
|          |                        | 3.4%                                                 |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

2. L is in inches.

3. L is in meters.

4. Best uncertainty is for steel blades.

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BECHTEL BWXT IDAHO, STANDARDS AND CALIBRATION LAB

P.O. Box 1625  
Idaho Falls, ID 83415-4137  
Mr. Harry J. Moody  
Phone: 208-526-2656 Fax: 208-526-5462  
E-Mail: moodhj@nrel.gov

NVLAP LAB CODE 200115-0

**DIMENSIONAL**  
NVLAP Code: 20/D03  
Gage Blocks

| Range    | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> |
|----------|----------------------------------------------|
| 0-4 in   | 3.4 - 4.5 $\mu$ in                           |
| 5-8 in   | 4.5 - 5.9 $\mu$ in                           |
| 10-12 in | 6.9 - 7.8 $\mu$ in                           |
| 16 in    | 9.8 $\mu$ in                                 |
| 20 in    | 11.8 $\mu$ in                                |

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ELECTROMAGNETICS -DC/LOW FREQUENCY  
NVLAP Code: 20/E05  
Resistance

| Range in Ohms | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> |
|---------------|----------------------------------------------|
| 0.1           | 0.35 ppm                                     |
| 1.0           | 0.3 ppm                                      |
| 10.0          | 0.35 ppm                                     |
| 100           | 0.5 ppm                                      |
| 1 k           | 0.6 ppm                                      |
| 10 k          | 0.5 ppm                                      |
| 100 k         | 1.0 ppm                                      |
| 1 M           | 5.0 ppm                                      |

NVLAP Code: 20/E06  
DC Voltage

| Range                   | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> |
|-------------------------|----------------------------------------------|
| 10 volt Zener Reference | 0.3 ppm                                      |

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| TIME AND FREQUENCY                                | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks                        |
|---------------------------------------------------|-----------------------------------------|--------------------------------|
| <i>NVLAP Code: 20/F01</i>                         |                                         |                                |
| Frequency Dissemination                           |                                         |                                |
| <i>Range</i>                                      |                                         |                                |
| 0.1 MHz, 1 MHz, 5 MHz, 10 MHz                     | $1 \times 10^{-11}/24$ hours            | NIST FMS System                |
| <i>NVLAP Code: 20/F03</i>                         |                                         |                                |
| Oscillator Characterization (Electronic Counters) |                                         |                                |
| <i>Range</i>                                      |                                         |                                |
| 0.1 MHz, 1 MHz, 5 MHz, 10 MHz                     | $5 \times 10^{-10}/24$ hours            | NIST FMS System                |
| <i>NVLAP Code: 20/M03</i>                         |                                         |                                |
| Mass                                              |                                         |                                |
| <i>Range</i>                                      |                                         |                                |
| 1 kg                                              | 115.67                                  | Repetitive Double Substitution |
| 500 g                                             | 66.46                                   | Repetitive Double Substitution |
| 200 g                                             | 54.37                                   | Repetitive Double Substitution |
| 100 g                                             | 29.80                                   | Repetitive Double Substitution |
| 50 g                                              | 7.22                                    | Repetitive Double Substitution |

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|         |      |                                |
|---------|------|--------------------------------|
| 20 g    | 6.02 | Repetitive Double Substitution |
| 10 g    | 2.65 | Repetitive Double Substitution |
| 5 g     | 4.19 | Repetitive Double Substitution |
| 2 g     | 4.92 | Repetitive Double Substitution |
| 1 g     | 3.87 | Repetitive Double Substitution |
| 0.5 g   | 3.27 | Repetitive Double Substitution |
| 0.2 g   | 1.59 | Repetitive Double Substitution |
| 0.1 g   | 1.51 | Repetitive Double Substitution |
| 0.05 g  | 0.81 | Repetitive Double Substitution |
| 0.02 g  | 0.77 | Repetitive Double Substitution |
| 0.01 g  | 0.21 | Repetitive Double Substitution |
| 0.005 g | 3.01 | Repetitive Double Substitution |
| 0.002 g | 0.98 | Repetitive Double Substitution |
| 0.001 g | 0.71 | Repetitive Double Substitution |

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NVLAP Code: 20/M06  
Force

| Range in lbf     | Best Uncertainty ( $\pm$ ) % of F/S | Remarks                             |
|------------------|-------------------------------------|-------------------------------------|
| 10 - 100         | 0.0063                              | Primary Standard (Deadweight)       |
| 101 - 200        | 0.0062                              | Primary Standard (Deadweight)       |
| 201 - 1000       | 0.0061                              | Primary Standard (Deadweight)       |
| 1000 - 5000      | 0.020                               | Secondary Standards (Proving Rings) |
| 5001 - 10,000    | 0.021                               | Secondary Standards (Proving Rings) |
| 10,001 - 30,000  | 0.026                               | Secondary Standards (Proving Rings) |
| 30,001 - 50,000  | 0.023                               | Secondary Standards (Proving Rings) |
| 50,001 - 100,000 | 0.042                               | Secondary Standards (Proving Rings) |
| 100 - 1000       | 0.073                               | Secondary Standards (Load Cells)    |
| 1001 - 3000      | 0.062                               | Secondary Standards (Load Cells)    |
| 3001 - 10,000    | 0.058                               | Secondary Standards (Load Cells)    |
| 10,001 - 30,000  | 0.060                               | Secondary Standards (Load Cells)    |
| 30,001 - 50,000  | 0.063                               | Secondary Standards (Load Cells)    |
| 50,001 - 100,000 | 0.144                               | Secondary Standards (Load Cells)    |

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THERMODYNAMICS  
NVLAP Code: 20/T05  
Pressure

| Range in psi  | Best Uncertainty ( $\pm$ ) $\mu$ sec <sup>1</sup> in ppm | Remarks  |
|---------------|----------------------------------------------------------|----------|
| 0 - 18        | 41.0                                                     | Nitrogen |
| 18 - 700      | 56.0                                                     | Nitrogen |
| 700 - 4000    | 54.0                                                     | Oil      |
| 4000 - 40,000 | 73.0                                                     | Oil      |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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NVLAP Code: 20/T05  
Pressure

| Range in psi  | Best Uncertainty ( $\pm$ ) $\mu$ sec <sup>1</sup> in ppm | Remarks  |
|---------------|----------------------------------------------------------|----------|
| 0 - 18        | 41.0                                                     | Nitrogen |
| 18 - 700      | 56.0                                                     | Nitrogen |
| 700 - 4000    | 54.0                                                     | Oil      |
| 4000 - 40,000 | 73.0                                                     | Oil      |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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THERMODYNAMICS  
NVLAP Code: 20/T05  
Pressure

| Range in psi  | Best Uncertainty ( $\pm$ ) $\mu$ sec <sup>1</sup> in ppm | Remarks  |
|---------------|----------------------------------------------------------|----------|
| 0 - 18        | 41.0                                                     | Nitrogen |
| 18 - 700      | 56.0                                                     | Nitrogen |
| 700 - 4000    | 54.0                                                     | Oil      |
| 4000 - 40,000 | 73.0                                                     | Oil      |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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|                                               |              |            |                          |
|-----------------------------------------------|--------------|------------|--------------------------|
| Log-Periodic Antennas (such as the EMCO 3146) | 200-1000 MHz | 1.0        | Vertical                 |
|                                               | 200-1000 MHz | 1.1        | Horizontal               |
|                                               | 200-1000 MHz | 1.0 to 2.2 | Fixed Heights            |
|                                               |              |            |                          |
| BiLog Antennas (such as the Chase CBL6111)    | 20-1000 MHz  | 0.9        |                          |
|                                               |              |            |                          |
| Dipole Antennas (such as the EMCO 3121)       | 30-1000 MHz  | 0.6        |                          |
|                                               |              |            |                          |
| DRWG Horn Antennas (such as the EMCO 3115)    | 1-18 GHz     | 1.1        | 3 Ant. Method, OATS      |
|                                               | 1-18 GHz     | 1.2        | Standard Field, OATS     |
|                                               |              |            |                          |
| Horn Antennas (above 18 GHz)                  | 18-40 GHz    | 1.2        | Standard Field, Anechoic |

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NVLAP LAB CODE 200123-0

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LIBERTY LABS, INC.

CALIBRATION LABORATORIES

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|                                 |     |                            |  |
|---------------------------------|-----|----------------------------|--|
| LISN's                          |     |                            |  |
| 10 kHz to 100 MHz               | 0.4 | Insertion Loss             |  |
| 10 kHz to 100 MHz               | 0.4 | Impedance                  |  |
| Current Probes/Injection Probes |     |                            |  |
| 5 Hz - 500 MHz                  | 0.3 | Insertion Loss             |  |
| Absorbing Clamps                |     |                            |  |
| 30 to 1000 MHz                  | 2.3 |                            |  |
| CDN'S & 150-50 Ohm Adapters     |     |                            |  |
| 10 kHz to 230 MHz               | 0.4 | Impedance & Insertion Loss |  |
| Isotropic Probes                |     |                            |  |
| 10 kHz-1 GHz                    | 2.4 | GTEM, Broomton MV          |  |
| 100 MHz - 18 GHz                | 2.4 | GTEM, PWR Sensors          |  |
| 10 kHz - 1 GHz                  | 1.3 | Stripline                  |  |
| 18-40 GHz                       | 1.9 | Standard Field             |  |

December 31, 2001

Effective through

*David Z. Alderman*

For the National Institute of Standards and Technology

NVLP-02S (11-95)



National Institute  
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ISO/IEC GUIDE 25:1990  
ANSI/NCSL Z540-1:1994  
ISO 9002:1987

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DEPARTMENT OF COMMERCE  
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## Scope of Accreditation

LIBERTY LABS, INC.

CALIBRATION LABORATORIES

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LIBERTY LABS, INC.

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|                    |     |                                                |  |
|--------------------|-----|------------------------------------------------|--|
| RF Pre-amps & Amps |     |                                                |  |
| 10 kHz to 18 GHz   | 0.4 | GAIN Cal                                       |  |
| Loop Antennas      |     |                                                |  |
| 1kHz - 30 MHz      | 1.1 | Vacuo Junction                                 |  |
| 20 Hz - 1 kHz      | 1.1 | Series Resistor                                |  |
| Rod Antennas       |     |                                                |  |
| 100 Hz to 30 MHz   | 0.5 | Using ECSM (Insertion Loss with Mfr's Fixture) |  |
| 100 Hz to 10 kHz   | 1.0 | Using NIST 1347                                |  |
| 10 kHz to 30 MHz   | 0.9 | Using NIST 1347                                |  |
| RF Insertion Loss  |     |                                                |  |
| 10 kHz to 18 GHz   | 0.4 |                                                |  |

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## Scope of Accreditation

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NVLAP LAB CODE 200123-0

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CALIBRATION LABORATORIES

LIBERTY LABS, INC.

ESD Simulators/Surge Generators

|                    |        |
|--------------------|--------|
| 0 to 15 kV ESD Gun | 0.3 dB |
| 0 to 6 kV Surge    | 0.3 dB |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

---

December 31, 2001

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## Scope of Accreditation

**CALIBRATION LABORATORIES**

**DAVID L. ELLIS CO., INCORPORATED**  
310 Old High Street, P.O. Box 592  
Acton, MA 01720-0010  
Mr. Robert A. Ellis  
Phone: 978-897-1795 Fax: 978-897-0844

**NVLAP LAB CODE 200127-0**

**MECHANICAL**

**NVLAP Code:** 20/M13  
Calibration of Test Blocks

| Hardness Scale and Range | Best Uncertainty (±) in Rockwell Points <sup>note 1</sup> | Remarks |
|--------------------------|-----------------------------------------------------------|---------|
| HRC 25 level             | 0.31                                                      |         |
| HRC 45 level             | 0.29                                                      |         |
| HRC 63 level             | 0.31                                                      |         |

Field Service Indirect Verification of Hardness of Testing Machines

|              |      |  |
|--------------|------|--|
| HRC 20 to 65 | 0.64 |  |
|--------------|------|--|

1 Represents an expanded uncertainty using a coverage factor, k=2.

September 30, 2001

*David F. Alderman*

For the National Institute of Standards and Technology

Effective through

48,025 (11,95)

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**Scope of Accreditation**

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**CALIBRATION LABORATORIES**

**COMPAQ CORPORATE METROLOGY**  
20555 SH 249 (MS 070110)  
P.O. Box 692000 (MS 070110)  
Houston, TX 77269-2000  
Mr. David H. Shumway  
Phone: 281-514-5787 Fax: 281-518-7275  
E-Mail: dave.shumway@compaq.com

NVLAP LAB CODE 200154-0

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UNITED STATES OF AMERICA

National Voluntary  
Laboratory Accreditation Program

| <p><b>DC/LOW FREQUENCY</b></p> <p>NVLAP Code: 20/E17<br/>Pulse Waveform</p> <table border="0"> <tr> <th>Parameter</th> <th>Range</th> <th>Best Uncertainty (<math>\pm</math>)<sup>95%</sup></th> <th>Remarks</th> </tr> <tr> <td>Risetime (Generate)</td> <td>&lt; 20 ps</td> <td>14.43%</td> <td></td> </tr> <tr> <td>Risetime (Measure)</td> <td>&lt; 1 ns to 100 ps</td> <td>5.78%</td> <td>Single Shot</td> </tr> </table><br><p><b>Impulse Spectral Amplitude</b></p> <table border="0"> <tr> <td>Impulse Noise (Source)</td> <td>10 kHz to 150 kHz</td> <td>14.21%</td> <td>Band A</td> </tr> <tr> <td>Impulse Noise (Source)</td> <td>150 kHz to 30 MHz</td> <td>14.21%</td> <td>Band B</td> </tr> <tr> <td>Impulse Noise (Source)</td> <td>30 MHz to 1 GHz</td> <td>23.43%</td> <td>Band C &amp; D</td> </tr> </table><br><p><b>HV (Measure)</b></p> <table border="0"> <tr> <td>1 kV to 60 kV</td> <td>0.13%</td> <td>with IIVD</td> </tr> <tr> <td>1 kV to 40 kV</td> <td>2.33%</td> <td>with HV Probe</td> </tr> </table> | Parameter         | Range                                     | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks | Risetime (Generate) | < 20 ps | 14.43% |  | Risetime (Measure) | < 1 ns to 100 ps | 5.78% | Single Shot | Impulse Noise (Source) | 10 kHz to 150 kHz | 14.21% | Band A | Impulse Noise (Source) | 150 kHz to 30 MHz | 14.21% | Band B | Impulse Noise (Source) | 30 MHz to 1 GHz | 23.43% | Band C & D | 1 kV to 60 kV | 0.13% | with IIVD | 1 kV to 40 kV | 2.33% | with HV Probe | <p>March 31, 2001</p> <p>Effective through</p> <p><i>David F. Alderman</i></p> <p>For the National Institute of Standards and Technology</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------|-------------------------------------------|---------|---------------------|---------|--------|--|--------------------|------------------|-------|-------------|------------------------|-------------------|--------|--------|------------------------|-------------------|--------|--------|------------------------|-----------------|--------|------------|---------------|-------|-----------|---------------|-------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Range             | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks                                   |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| Risetime (Generate)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | < 20 ps           | 14.43%                                    |                                           |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| Risetime (Measure)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | < 1 ns to 100 ps  | 5.78%                                     | Single Shot                               |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| Impulse Noise (Source)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 kHz to 150 kHz | 14.21%                                    | Band A                                    |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| Impulse Noise (Source)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 150 kHz to 30 MHz | 14.21%                                    | Band B                                    |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| Impulse Noise (Source)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 30 MHz to 1 GHz   | 23.43%                                    | Band C & D                                |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| 1 kV to 60 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.13%             | with IIVD                                 |                                           |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |
| 1 kV to 40 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.33%             | with HV Probe                             |                                           |         |                     |         |        |  |                    |                  |       |             |                        |                   |        |        |                        |                   |        |        |                        |                 |        |            |               |       |           |               |       |               |                                                                                                                                              |

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**Scope of Accreditation**

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**CALIBRATION LABORATORIES**

**COMPAQ CORPORATE METROLOGY**

DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

National Voluntary  
Laboratory Accreditation Program

| <p><b>TIME AND FREQUENCY</b></p> <p>NVLAP Code: 20/F03<br/>Oscillator Characterization</p> <table border="0"> <tr> <th>Parameter</th> <th>Nominal</th> <th>Best Uncertainty (<math>\pm</math>)<sup>95%</sup></th> <th>Remarks</th> </tr> <tr> <td>Frequency/Period</td> <td>10 MHz</td> <td><math>2.82 \times 10^{-9}</math></td> <td></td> </tr> <tr> <td>Frequency (Source)</td> <td>10 MHz, 1 Vrms</td> <td><math>1.34 \times 10^{-7}</math></td> <td></td> </tr> <tr> <td>Frequency (Measure)</td> <td>10 MHz, 1 Vrms</td> <td><math>1.34 \times 10^{-9}</math></td> <td>1 second</td> </tr> </table><br><p><b>Duty Cycle/Duration</b></p> <table border="0"> <tr> <td>@ 1 s Time Interval</td> <td>10 MHz, 1 Vrms</td> <td>0.61%</td> </tr> <tr> <td>@ 100 mV p-p</td> <td>2 GHz</td> <td>6.24%</td> </tr> <tr> <td>Jitter</td> <td></td> <td></td> </tr> <tr> <td>@ 200 mV p-p</td> <td>2 GHz</td> <td>1.38%</td> </tr> <tr> <td>@ 1 Vrms</td> <td>10 MHz</td> <td>1.71%</td> </tr> </table> | Parameter      | Nominal                                   | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks | Frequency/Period | 10 MHz | $2.82 \times 10^{-9}$ |  | Frequency (Source) | 10 MHz, 1 Vrms | $1.34 \times 10^{-7}$ |  | Frequency (Measure) | 10 MHz, 1 Vrms | $1.34 \times 10^{-9}$ | 1 second | @ 1 s Time Interval | 10 MHz, 1 Vrms | 0.61% | @ 100 mV p-p | 2 GHz | 6.24% | Jitter |  |  | @ 200 mV p-p | 2 GHz | 1.38% | @ 1 Vrms | 10 MHz | 1.71% | <p>March 31, 2001</p> <p>Effective through</p> <p><i>David F. Alderman</i></p> <p>For the National Institute of Standards and Technology</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|-------------------------------------------|---------|------------------|--------|-----------------------|--|--------------------|----------------|-----------------------|--|---------------------|----------------|-----------------------|----------|---------------------|----------------|-------|--------------|-------|-------|--------|--|--|--------------|-------|-------|----------|--------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nominal        | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks                                   |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| Frequency/Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10 MHz         | $2.82 \times 10^{-9}$                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| Frequency (Source)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 MHz, 1 Vrms | $1.34 \times 10^{-7}$                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| Frequency (Measure)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 MHz, 1 Vrms | $1.34 \times 10^{-9}$                     | 1 second                                  |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| @ 1 s Time Interval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 MHz, 1 Vrms | 0.61%                                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| @ 100 mV p-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2 GHz          | 6.24%                                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| Jitter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                                           |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| @ 200 mV p-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2 GHz          | 1.38%                                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |
| @ 1 Vrms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 MHz         | 1.71%                                     |                                           |         |                  |        |                       |  |                    |                |                       |  |                     |                |                       |          |                     |                |       |              |       |       |        |  |  |              |       |       |          |        |       |                                                                                                                                              |

NVLAP-025 (11-95)



## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |                       | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Scope of Accreditation</b><br>ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                             |                       |                                                                                                                                           |                        |
| Revised 3/3/2000                                                                                                                                                                             |                       | Page 3 of 10                                                                                                                              |                        |
| CALIBRATION LABORATORIES                                                                                                                                                                     |                       | NVLAP LAB CODE 200154-0                                                                                                                   |                        |
| COMPAQ CORPORATE METROLOGY                                                                                                                                                                   |                       |                                                                                                                                           |                        |
| Drift                                                                                                                                                                                        | @ 100 s Time Interval | 10 MHz                                                                                                                                    | 5.7 x 10 <sup>-9</sup> |
| Spectral Purity                                                                                                                                                                              |                       |                                                                                                                                           |                        |
| Phase Noise                                                                                                                                                                                  |                       | 10 MHz to 18 GHz                                                                                                                          | 34.3 %                 |
| Single Sideband Phase Noise (SSB)                                                                                                                                                            |                       |                                                                                                                                           |                        |
| @ +30 to -20 dBm                                                                                                                                                                             |                       | 10 MHz to 1300 MHz                                                                                                                        | 15.10 %                |
| @ 0 $\geq$ -22 dBm                                                                                                                                                                           |                       | 1 GHz                                                                                                                                     | 15.10 %                |
| Harmonic Distortion                                                                                                                                                                          |                       |                                                                                                                                           |                        |
| @ 0 dBm                                                                                                                                                                                      |                       | 0.2 Hz to 100 Hz                                                                                                                          | 5.44 %                 |
| @ 0 dBm                                                                                                                                                                                      |                       | 1 GHz                                                                                                                                     | 15.10 %                |
| @ -22 dBm                                                                                                                                                                                    |                       | 10 Hz to 100 kHz                                                                                                                          | 29.91 %                |
| Noise Test Set                                                                                                                                                                               |                       |                                                                                                                                           |                        |
|                                                                                                                                                                                              |                       |                                                                                                                                           | with receiver          |
|                                                                                                                                                                                              |                       |                                                                                                                                           | with spectrum analyzer |

|                   |                                                        |
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| March 31, 2001    | David F. Alderman                                      |
| Effective through | For the National Institute of Standards and Technology |

NVLAP-Q2S (11-95)

NVLAP 2001 DIRECTORY

(See 'How To Use This Directory' on page 7.)

| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |  | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Scope of Accreditation</b><br>ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                           |  |                                                                                                                                         |         |
| Revised 3/3/2000                                                                                                                                                                           |  | Page 4 of 10                                                                                                                            |         |
| CALIBRATION LABORATORIES                                                                                                                                                                   |  | NVLAP LAB CODE 200154-0                                                                                                                 |         |
| COMPAQ CORPORATE METROLOGY                                                                                                                                                                 |  |                                                                                                                                         |         |
| 2nd Order Harmonic/Intermodulation Distortion                                                                                                                                              |  |                                                                                                                                         |         |
| @ 0 dBm                                                                                                                                                                                    |  | 0.24 Hz to 100 Hz                                                                                                                       | 5.44 %  |
| @ 0 dBm                                                                                                                                                                                    |  | 1 GHz                                                                                                                                   | 15.10 % |
| AM Modulation                                                                                                                                                                              |  |                                                                                                                                         |         |
| AM (Source)                                                                                                                                                                                |  | 50 Hz to 50 kHz Rates                                                                                                                   | 0.18 %  |
| AM (Measure)                                                                                                                                                                               |  | 50 Hz to 50 kHz Rates                                                                                                                   | 1.41 %  |
| AM (Source)                                                                                                                                                                                |  | 33.33 % of depth                                                                                                                        | 0.12 %  |
| FM Modulation                                                                                                                                                                              |  |                                                                                                                                         |         |
| FM (Source)                                                                                                                                                                                |  | DC to 100 kHz Rates                                                                                                                     | 0.16 %  |
| FM (Measure)                                                                                                                                                                               |  | 50 Hz to 100 kHz Rates                                                                                                                  | 1.72 %  |
| FM (Source)                                                                                                                                                                                |  | 34 kHz Peak Deviation                                                                                                                   | 0.12 %  |
| PM Modulation                                                                                                                                                                              |  |                                                                                                                                         |         |
| PM (Measure)                                                                                                                                                                               |  | 150 kHz to 1300 MHz                                                                                                                     | 4.77 %  |
| Spurious Content                                                                                                                                                                           |  |                                                                                                                                         |         |
| @ 0 dBm                                                                                                                                                                                    |  | 0.2 Hz to 100 Hz                                                                                                                        | 5.44 %  |

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| March 31, 2001    | David F. Alderman                                      |
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CALIBRATION LABORATORIES

NVLAP LAB CODE 200154-0

COMPAQ CORPORATE METROLOGY

| @ 0 dBm                                 | 1 GHz              | 15.10%                                   |         |
|-----------------------------------------|--------------------|------------------------------------------|---------|
| <b>RF/MICROWAVE</b>                     |                    |                                          |         |
| NVLAP Code: 20/R13                      |                    |                                          |         |
| Attenuators                             |                    |                                          |         |
| Relative RF Power (Attenuation-Measure) |                    |                                          |         |
| Frequency                               | Nominal            | Best Uncertainty ( $\pm$ , $y_{worst}$ ) | Remarks |
| 100 kHz to 2.6 GHz                      | 0 dB to -20 dB     | M + 0.02 dB                              |         |
| 100 kHz to 2.6 GHz                      | -20 dB to -40 dB   | M + 0.03 dB                              |         |
| 100 kHz to 2.6 GHz                      | -40 dB to -60 dB   | M + 0.04 dB                              |         |
| 100 kHz to 2.6 GHz                      | -60 dB to -80 dB   | M + 0.05 dB                              |         |
| 100 kHz to 2.6 GHz                      | -80 dB to -100 dB  | M + 0.06 dB                              |         |
| 100 kHz to 2.6 GHz                      | -100 dB to -110 dB | M + 0.12 dB                              |         |
| 100 kHz to 2.6 GHz                      | -110 dB to -120 dB | M + 0.17 dB                              |         |
|                                         |                    |                                          |         |
| 2.5 GHz to 26.5 GHz                     | -0 dB to -10 dB    | M + 0.22 dB                              |         |
| 2.5 GHz to 26.5 GHz                     | -10 dB to -20 dB   | M + 0.09 dB                              |         |
| 2.5 GHz to 26.5 GHz                     | -20 dB to -30 dB   | M + 0.10 dB                              |         |
| 2.5 GHz to 26.5 GHz                     | -30 dB to -40 dB   | M + 0.13 dB                              |         |

March 31, 2001

David F. Alderman

Effective through

For the National Institute of Standards and Technology



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DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

National Voluntary  
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## Scope of Accreditation

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ANSI/NCSL Z540-1:1994  
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CALIBRATION LABORATORIES

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COMPAQ CORPORATE METROLOGY

|                                     |                    |             |                            |
|-------------------------------------|--------------------|-------------|----------------------------|
| 2.5 GHz to 26.5 GHz                 | -40 dB to -50 dB   | M + 0.14 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -50 dB to -60 dB   | M + 0.16 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -60 dB to -70 dB   | M + 0.18 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -70 dB to -80 dB   | M + 0.20 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -80 dB to -90 dB   | M + 0.31 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -90 dB to -100 dB  | M + 0.32 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -100 dB to -110 dB | M + 0.34 dB |                            |
| 2.5 GHz to 26.5 GHz                 | -110 dB to -120 dB | M + 0.36 dB |                            |
| 30 MHz                              | 0 dB to 50 dB      | M + 0.07 dB |                            |
|                                     |                    |             |                            |
| Attenuation High Power (Generate)   |                    |             |                            |
| DC to 2 GHz                         | 20 dB              | M + 0.44 dB | with Narda 766-20<br>ATTN. |
| DC to 2 GHz                         | 20 dB              | M + 0.80 dB | with Narda 769-20<br>ATTN. |
|                                     |                    |             |                            |
| Attenuation High Voltage (Generate) |                    |             |                            |
| DC to 1 GHz                         | 20 dB              | M + 0.30 dB |                            |

March 31, 2001

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**CALIBRATION LABORATORIES**

NVLAP LAB CODE 200154-0

**COMPAQ CORPORATE METROLOGY**

| Frequency          | Nominal             | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks              |
|--------------------|---------------------|-----------------------------------------|----------------------|
| Return Loss        |                     |                                         |                      |
| 10 MHz to 12.4 GHz | 0 to -10 dB         | M + 14.75%                              | Scalar Analyzer      |
| 12.4 GHz to 18 GHz | 0 to -10 dB         | M + 14.39%                              | Scalar Analyzer      |
| 30 kHz to 6.0 GHz  | 0 to -10 dB         | M + 14.25%                              | Vector Analyzer      |
| Insertion Loss     |                     |                                         |                      |
| 10 MHz to 18 GHz   | 0 to -30 dB         | M + 2.96%                               | Scalar Analyzer      |
| 10 MHz to 18 GHz   | -30 dB to -60 dB    | M + 28.52%                              | Scalar Analyzer      |
| 30 kHz to 6.0 GHz  | 0 to -60 dB         | M + 5.44%                               | Vector Analyzer      |
| Phase (Measure)    |                     |                                         |                      |
| 30 kHz to 6.0 GHz  | 0 to 360 degrees    | 2.08 degrees                            | Vector Analyzer      |
| 0.01 Hz to 160 MHz | -180 to 360 degrees | 2.96%                                   | with Series Counters |

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## Scope of Accreditation

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200154-0

COMPAQ CORPORATE METROLOGY

| NVLAP Code: 20/R17<br>Power Meters | Frequency | Nominal | Best Uncertainty ( $\pm$ ) <sup>1,2</sup> | Remarks |
|------------------------------------|-----------|---------|-------------------------------------------|---------|
| RF Power Sensor Transfer           |           |         |                                           |         |
| 10 MHz to 18 GHz                   |           |         | M + 1.54 %                                |         |
| 50 MHz to 26.5 GHz                 |           |         | M + 2.90 %                                |         |
| RF Power Absolute                  |           |         |                                           |         |
| 10 MHz to 18 GHz                   |           |         | M + 1.52 %                                |         |
| 50 MHz to 26.5 GHz                 |           |         | M + 2.89 %                                |         |
| 10 kHz to 100 MHz                  | 0.5 mV    |         | M + 0.20 dB                               |         |
| 100 MHz to 300 MHz                 | 0.5 mV    |         | M + 0.24 dB                               |         |
| 300 MHz to 1 GHz                   | 0.5 mV    |         | M + 0.28 dB                               |         |
| 1 GHz to 1.2 GHz                   | 0.5 mV    |         | M + 0.43 dB                               |         |
| 10 kHz to 100 MHz                  | 1.0 mV    |         | M + 0.14 dB                               |         |
| 100 MHz to 1 GHz                   | 1.0 mV    |         | M + 0.20 dB                               |         |
| 300 MHz to 1 GHz                   | 1.0 mV    |         | M + 0.24 dB                               |         |
| 1 GHz to 1.2 GHz                   | 1.0 mV    |         | M + 0.42 dB                               |         |

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COMPAQ CORPORATE METROLOGY

| 10 kHz to 100 MHz         | 10 mV to 1000 mV     | M + 0.11 dB |
|---------------------------|----------------------|-------------|
| 100 MHz to 300 MHz        | 10 mV to 1000 mV     | M + 0.11 dB |
| 300 MHz to 1 GHz          | 10 mV to 1000 mV     | M + 0.22 dB |
| 1 GHz to 1.2 GHz          | 10 mV to 1000 mV     | M + 0.41 dB |
| Tuned RF Power - Absolute |                      |             |
| 100 kHz to 2.6 GHz        | 0 dBm to -100 dBm    | M + 0.28 dB |
| 100 kHz to 2.6 GHz        | -100 dBm to -110 dBm | M + 0.30 dB |
| 100 kHz to 2.6 GHz        | -110 dBm to -120 dBm | M + 0.32 dB |
| 2.5 GHz to 26.5 GHz       | 0 dBm to -10 dBm     | M + 0.64 dB |
| 2.5 GHz to 26.5 GHz       | -10 dBm to -40 dBm   | M + 0.61 dB |
| 2.5 GHz to 26.5 GHz       | -40 dBm to -60 dBm   | M + 0.62 dB |
| 2.5 GHz to 26.5 GHz       | -60 dBm to -80 dBm   | M + 0.63 dB |
| 2.5 GHz to 26.5 GHz       | -80 dBm to -90 dBm   | M + 0.67 dB |
| 2.5 GHz to 26.5 GHz       | -90 dBm to -110 dBm  | M + 0.68 dB |
| 2.5 GHz to 26.5 GHz       | -110 dBm to -120 dBm | M + 0.69 dB |

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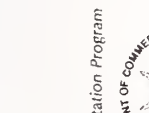
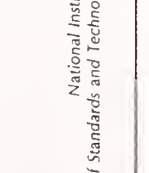
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|                                                                                                                                                                                                                                      |                                                                                                                  |                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;">  </p> <p style="text-align: center;">             National Institute<br/>of Standards and Technology         </p> | <p style="text-align: center;">             National Voluntary<br/>Laboratory Accreditation Program         </p> | <div style="text-align: center;">  <p>DEPARTMENT OF COMMERCE<br/>UNITED STATES OF AMERICA</p> </div>                        |
| <h1 style="margin: 0;">Scope of Accreditation</h1>                                                                                                                                                                                   |                                                                                                                  |                                                                                                                                                                                                                |
| <p>             ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL Z540-1:1994<br/>ISO 9002:1987         </p>                                                                                                                                       | <p>             CALIBRATION LABORATORIES         </p>                                                            | <p>             STERIS-ISONEDIX SERVICES<br/>7828 Nagle Avenue<br/>Morton Grove, IL 60053<br/>Mr. Glenn W. Calvert<br/>Phone: 847-247-0970 Fax: 847-247-0882<br/>E-Mail: glenn_calvert@steris.com         </p> |
| <p>             IONIZING RADIATION<br/>NVLAP Code: 20/102<br/>High Dose Dosimetry         </p>                                                                                                                                       |                                                                                                                  | <p>             NVLAP LAB CODE 200235-0         </p>                                                                                                                                                           |
| <p>             Source<br/><sup>60</sup>Co Gamma Rays         </p>                                                                                                                                                                   |                                                                                                                  | <p>             Page 1 of 1         </p>                                                                                                                                                                       |
| <p>             Range<br/>100 grays or more at a rate of<br/>approximately 1 to 20 kGy/hour         </p>                                                                                                                             |                                                                                                                  | <p>             Best Uncertainty (<math>\pm</math> years)<br/>2.5%         </p>                                                                                                                                |
| <p>             1. Represents an expanded uncertainty using a coverage factor, <math>k=2</math>.         </p>                                                                                                                        |                                                                                                                  |                                                                                                                                                                                                                |
| <p>             December 31, 2001         </p>                                                                                                                                                                                       |                                                                                                                  | <p>             David Z. Alderman         </p>                                                                                                                                                                 |
| <p>             Effective through         </p>                                                                                                                                                                                       |                                                                                                                  | <p>             for the National Institute of Standards and Technology         </p>                                                                                                                            |

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## Scope of Accreditation

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200262-0

#### METROPLEX METROLOGY LAB, INC.

2309 E. Loop 820 North  
Fort Worth, TX 76118-7103

Mr. James L. Johnson

Phone: 817-589-8300 Fax: 817-589-8311

E-Mail: [jjohnson@metroplexmetrology.com](mailto:jjohnson@metroplexmetrology.com)

### DIMENSIONAL

NVLAP Code: 20/D03  
Gage Blocks

| Range          | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sub>95%</sub> | Remarks              |
|----------------|-------------------------------------------------------------|----------------------|
| to 1 in        | 2.5                                                         | Comparison to Master |
| > 1 in to 4 in | 2.5 + 0.5L <sub>95%</sub>                                   | Comparison to Master |

NVLAP Code: 20/D05  
Length and Diameter

| Range                           | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sub>95%</sub> | Remarks                      |
|---------------------------------|-------------------------------------------------------------|------------------------------|
| Calipers<br>to 72 in            | 500 + 12L <sub>95%</sub>                                    | Gage Blocks                  |
| OD Micrometers<br>to 36 in      | 66 + 11L <sub>95%</sub>                                     | Gage Blocks                  |
| ID Micrometer Head<br>to 1.0 in | 66                                                          | Comparison to<br>Gage Blocks |

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NVLAP LAB CODE 200262-0

## Scope of Accreditation

**CALIBRATION LABORATORIES**

METROPLEX METROLOGY LAB, INC.

NVLAP Code: 20/D07  
Measuring Wires

NVLAP Code: 20/D11  
Plug/Ring Gages

|                      |           |                          |                              |  |  |
|----------------------|-----------|--------------------------|------------------------------|--|--|
| ID Micrometer Rods   | to 30 in  | 34 + 2L <sub>nom</sub> ± | Comparison to<br>Gage Blocks |  |  |
| Micrometer End Stds. | to 30 in  | 34 + 2L <sub>nom</sub> ± | Comparison to<br>Gage Blocks |  |  |
| Dial Indicators      |           |                          |                              |  |  |
| Resolution           | 0.0010 in | 580                      | Comparison to<br>ULM         |  |  |
|                      | 0.0005 in | 290                      | Comparison to<br>ULM         |  |  |
|                      | 0.0001 in | 64                       | Comparison to<br>ULM         |  |  |
| Radius Gages         | All Sizes | 180                      | Optical<br>Comparator        |  |  |
| Optical Comparators  |           |                          |                              |  |  |
| Linear Travel        | to 4 in   | 224                      |                              |  |  |

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## Scope of Accreditation

**CALIBRATION LABORATORIES**

METROPLEX METROLOGY LAB, INC.

NVLAP Code: 20/D07  
Measuring Wires

NVLAP Code: 20/D11  
Plug/Ring Gages

|                               |                |                                                               |                                      |  |  |
|-------------------------------|----------------|---------------------------------------------------------------|--------------------------------------|--|--|
| Thread Wires                  | 29 ° and 60 °  | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sub>nom</sub> ± | Remarks                              |  |  |
|                               |                | 13                                                            | In accordance with<br>ANSI/ASME B1.2 |  |  |
| Plain Plug Gages              | to 12 in       | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sub>nom</sub> ± | Comparison to Gage<br>Blocks         |  |  |
|                               |                | 16 + 4L <sub>nom</sub> ±                                      |                                      |  |  |
| Plain Ring Gages              | to 7 in        | 22 + 4L <sub>nom</sub> ±                                      | Comparison to<br>Master Ring         |  |  |
| NVLAP Code: 20/D12<br>Surface |                |                                                               |                                      |  |  |
| Surface Plates                | to 72 X 144 in | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sub>nom</sub> ± | Remarks                              |  |  |
|                               |                | 10 + 13D <sub>nom</sub> ±                                     | Measured in lab @ 68 °F ±2           |  |  |

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## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

|                                                                                                                                  |          |                                                                                     |                       |
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|                                               |          |  |                       |
| National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program                            |          |                                                                                     |                       |
| <b>Scope of Accreditation</b>                                                                                                    |          |                                                                                     |                       |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCCL Z540-1-1994<br>ISO 9002:1987                                                                  |          |                                                                                     |                       |
| CALIBRATION LABORATORIES                                                                                                         |          | NVLAP LAB CODE 200262-0                                                             |                       |
| METROPLEX METROLOGY LAB, INC.                                                                                                    |          |                                                                                     |                       |
| NVLAP Code: 20/D14<br>Threaded Plug and Ring Gages                                                                               |          | Best Uncertainty in $\mu\text{in}$ ( $\pm$ ) <sup>1</sup>                           |                       |
| Threaded Plug Gages                                                                                                              |          | Remarks                                                                             |                       |
| Pitch Diameter                                                                                                                   | to 17 in | 73 + 3L <sup>100</sup> 2                                                            | Over wire measurement |
| Major Diameter                                                                                                                   | to 17 in | 16 + 4L <sup>100</sup> 2                                                            | Direct Measurement    |
| Threaded Ring Gages                                                                                                              |          | Functional                                                                          |                       |
| Pitch Diameter                                                                                                                   | to 8 in  | 184 to 16L <sup>100</sup> 2                                                         |                       |
| Minor Diameter                                                                                                                   | to 3 in  | 120                                                                                 |                       |
|                                                                                                                                  | to 8 in  | 200                                                                                 |                       |
| 1. Represents an expanded uncertainty using a coverage factor, k=2.<br>2. L = Length in inches<br>3. D = Diagonal Length in feet |          |                                                                                     |                       |
| March 31, 2001                                                                                                                   |          | David F. Alderman                                                                   |                       |
| Effective through                                                                                                                |          | For the National Institute of Standards and Technology                              |                       |

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|                                                                                                                                                                                                                   |  |                                                                                   |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|
|                                                                                                                                  |  |  |  |
| National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program                                                                                                             |  |                                                                                   |  |
| <b>Scope of Accreditation</b>                                                                                                                                                                                     |  |                                                                                   |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCCL Z540-1-1994<br>ISO 9002:1987                                                                                                                                                   |  |                                                                                   |  |
| CALIBRATION LABORATORIES                                                                                                                                                                                          |  | NVLAP LAB CODE 200301-0                                                           |  |
| INSTRON FIELD CALIBRATION LABORATORY<br>100 Royall Street<br>Canton, MA 02021<br>Dr. Anatoly Perlov<br>Phone: 781-575-5479 Fax: 781-575-5767<br>E-Mail: anatoly_perlov@instron.com<br>URL: http://www.instron.com |  |                                                                                   |  |
| DIMENSIONAL<br>NVLAP Code: 20/D05<br>Length                                                                                                                                                                       |  | Best Uncertainty ( $\pm$ ) <sup>1</sup>                                           |  |
| Range                                                                                                                                                                                                             |  | Remarks                                                                           |  |
| Field Service Calibration of Strain:<br>0.5 in (12.5 mm) to 4.0 in (100 mm)                                                                                                                                       |  | 0.5% of measured value but not less than 50 $\mu\text{in}$                        |  |
| > 0 to 10 in (254 mm)                                                                                                                                                                                             |  | 0.5% of measured value but not less than 50 $\mu\text{in}$                        |  |
| March 31, 2001                                                                                                                                                                                                    |  | David F. Alderman                                                                 |  |
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CALIBRATION LABORATORIES

MECHANICAL

NVLAP Code: 20/M06  
Field Service Calibration of Force

| Range                                | Best Uncertainty ( $\pm$ ) <sup>1,2</sup> | Remarks     |
|--------------------------------------|-------------------------------------------|-------------|
| 1 gram to 500 ton (0.01 N to 5MN)    | 0.125% of applied force                   | Compression |
| 1 gram to 150 ton (0.01 N to 1.5 MN) | 0.125% of applied force                   | Tension     |

NVLAP Code: 20/M13  
Field Service indirect verification of hardness testing machines.

Hardness Scale and Range      Best Uncertainty ( $\pm$ ) in Rockwell Points<sup>1,2</sup>      Remarks

|                 |      |  |
|-----------------|------|--|
| HRA Steel Scale |      |  |
| 80 & Above      | 0.25 |  |
| Below 80        | 0.42 |  |
| HRB Scale       |      |  |
| 45 & Above      | 0.57 |  |
| Below 45        | 0.83 |  |
| HRC Scale       |      |  |
| 60 & Above      | 0.26 |  |
| Below 60        | 0.33 |  |
| HRD Scale       |      |  |
| 70.7 & Above    | 0.26 |  |
| Below 70.7      | 0.42 |  |

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INSTRON FIELD CALIBRATION LABORATORY

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|              |      |
|--------------|------|
| HRE Scale    | 0.58 |
| 57-100       |      |
| HRF Scale    | 0.60 |
| 57-100       |      |
| HRG Scale    | 0.45 |
| 82.5 & Above |      |
| Below 82.5   | 0.61 |
| HRH Scale    | 0.58 |
| 87-100       |      |
| HRK Scale    | 0.58 |
| 21-100       |      |
| HRL Scale    | 0.61 |
| 100-130      |      |
| HRM Scale    | 0.60 |
| 80-130       |      |
| HR15N Scale  | 0.45 |
| 90 & Above   |      |
| Below 90     | 0.53 |
| HR30N Scale  | 0.42 |
| 77.5 & Above |      |
| Below 77.5   | 0.51 |

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## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

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| Scope of Accreditation                                                                                                                                                                       |              |                                                                                                    |  |
| Revised 1/26/2001                                                                                                                                                                            |              | Page 4 of 6                                                                                        |  |
| CALIBRATION LABORATORIES                                                                                                                                                                     |              | NVLAP LAB CODE 200301-0                                                                            |  |
| INSTRON FIELD CALIBRATION LABORATORY                                                                                                                                                         |              |                                                                                                    |  |
| HR45N Scale<br>66.5 & Above<br>Below 66.5                                                                                                                                                    | 0.48<br>0.48 |                                                                                                    |  |
| HRP Scale<br>57-100                                                                                                                                                                          | 0.60         |                                                                                                    |  |
| IIR Scale<br>100-125                                                                                                                                                                         | 0.42         |                                                                                                    |  |
| IHS Scale<br>100-125                                                                                                                                                                         | 0.45         |                                                                                                    |  |
| HR15T Scale<br>75.3 & Above<br>Below 75.3                                                                                                                                                    | 0.60<br>0.60 |                                                                                                    |  |
| HRT30T Scale<br>46.2 & Above<br>Below 17.6                                                                                                                                                   | 0.58<br>0.58 |                                                                                                    |  |
| HR45T Scale<br>17.6 & Above<br>Below 17.6                                                                                                                                                    | 0.61<br>0.61 |                                                                                                    |  |
| IIRV Scale<br>90-110                                                                                                                                                                         | 0.42         |                                                                                                    |  |
| HR15W Scale<br>70-100                                                                                                                                                                        | 0.61         |                                                                                                    |  |

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| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                                                              |      |                                                                                                    |  |
| Scope of Accreditation                                                                                                                                                                       |      |                                                                                                    |  |
| Revised 1/26/2001                                                                                                                                                                            |      | Page 5 of 6                                                                                        |  |
| CALIBRATION LABORATORIES                                                                                                                                                                     |      | NVLAP LAB CODE 200301-0                                                                            |  |
| INSTRON FIELD CALIBRATION LABORATORY                                                                                                                                                         |      |                                                                                                    |  |
| HR30W Scale<br>45-96                                                                                                                                                                         | 0.60 |                                                                                                    |  |
| HR45W Scale<br>25-91                                                                                                                                                                         | 0.60 |                                                                                                    |  |
| HR15X Scale<br>80-100                                                                                                                                                                        | 0.58 |                                                                                                    |  |
| HR30X Scale<br>65-100                                                                                                                                                                        | 0.60 |                                                                                                    |  |
| HR45X Scale<br>50-95                                                                                                                                                                         | 0.61 |                                                                                                    |  |
| HR15Y Scale<br>85-100                                                                                                                                                                        | 0.58 |                                                                                                    |  |
| HR30Y Scale<br>80-100                                                                                                                                                                        | 0.60 |                                                                                                    |  |
| HR45Y Scale<br>66-106                                                                                                                                                                        | 0.58 |                                                                                                    |  |

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INSTRON FIELD CALIBRATION LABORATORY

NVLAP LAB CODE 200301-0

1. The standardized test blocks used for verification are calibrated at the Wilson Hardness Calibration Laboratory in accordance with ASTM E18-00 section C using N.I.S.T. Rockwell HRC standard reference materials (SRM) 2810, 2811, and 2812. All other Rockwell scales are traceable to Wilson hardness levels thru laboratory standardizing machines. The standardizing machines are directly verified according to ASTM E18-00 using devices that are traceable to N.I.S.T. either directly or through a NVLAP approved laboratory.

2. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

March 31, 2001

Effective through

*David F. Alderman*

For the National Institute of Standards and Technology

NVLAP-025 (11-95)



National Institute  
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National Voluntary  
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## Scope of Accreditation

ISO/IEC GUIDE 25:1990  
ANS/INCSL 7540-1-1994  
ISO 9002:1987

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CALIBRATION LABORATORIES

VLSI STANDARDS, INC.  
3087 North First Street  
San Jose, CA 95134-2006  
Ms. Charma Daniel  
Phone: 408-428-1800 x151 Fax: 408-428-9555  
E-Mail: charma.daniel@visistd.com  
URL: http://www.visistd.com

NVLAP LAB CODE 200302-0

**DIMENSIONAL**

NVLAP Code: 20/D12  
Surface Texture

**STEP HEIGHT STANDARDS (SHS) - Thin**

| Nominal Height | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Percentage Uncertainty ( $\pm$ ) <sup>year 2</sup> |
|----------------|----------------------------------------------|----------------------------------------------------|
| 8 nm           | 0.7 nm                                       | 8.7                                                |
| 18 nm          | 0.7 nm                                       | 3.8                                                |
| 44 nm          | 0.8 nm                                       | 1.8                                                |
| 88 nm          | 1.1 nm                                       | 1.2                                                |
| 180 nm         | 1.8 nm                                       | 1.0                                                |
| 450 nm         | 2.7 nm                                       | 0.6                                                |
| 940 nm         | 5.5 nm                                       | 0.5                                                |

June 30, 2001

Effective through

*David F. Alderman*

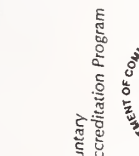
For the National Institute of Standards and Technology

NVLAP-025 (11-95)

## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

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ISO/IEC GUIDE 25:1990  
ANSI/NCSL Z540-1:1994  
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## Scope of Accreditation

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|                          |        |                         |
|--------------------------|--------|-------------------------|
| CALIBRATION LABORATORIES |        | Page 3 of 3             |
| VLSI STANDARDS, INC.     |        | NVLAP LAB CODE 200302-0 |
| 200 nm                   | 0.5 nm | 0.25                    |
| 285 nm                   | 0.5 nm | 0.18                    |
| 400 nm                   | 0.5 nm | 0.13                    |
| 675 nm                   | 0.6 nm | 0.09                    |
| 940 nm                   | 0.6 nm | 0.06                    |
| 1010 nm                  | 0.6 nm | 0.06                    |

1. Represents an expanded uncertainty using a coverage factor,  $k = 2$ .

2. Normalized to the nominal value.

June 30, 2001

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**Scope of Accreditation**

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NVLAP LAB CODE 200311-0

CALIBRATION LABORATORIES

UNITED TESTING SYS. CANADA, LTD. DYNAMIC TESTING SYS. INT. INC.

225 Bradwick Drive, #21  
Concord Ontario L4K 1K7  
CANADA  
Mr. Arno M. Dickertmann  
Phone: 905-669-5327 Fax: 905-738-5051  
E-Mail: arno@uscncanada.com

| Range                          | Best Uncertainty ( $\pm y_{\text{max}}$ ) | Remarks                    |
|--------------------------------|-------------------------------------------|----------------------------|
| <b>DIMENSIONAL</b>             |                                           |                            |
| NVLAP Code: 20/D05             |                                           |                            |
| Length                         |                                           |                            |
| Extensometer Linear Calibrator |                                           |                            |
| 0 to 25.4 mm (0 to 1.0 in)     | 0.33 $\mu\text{m}$                        | Heidenhain MT25            |
| Extensometer Gage Length       |                                           |                            |
| 0 to 4.0 in                    | 0.00137 in                                | Mitutoyo Digimatic Caliper |
| 0 to 12.0 in                   | 0.00177 in                                | Mitutoyo Digimatic Caliper |
| Crosshead Travel               |                                           |                            |
| 0 to 24.0 in                   | 0.00206 in                                | Mitutoyo Digimatic         |

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NVLAP LAB CODE 200311-0

CALIBRATION LABORATORIES

UNITED TESTING SYS. CANADA, LTD. DYNAMIC TESTING SYS. INT. INC.

Field Service Calibration or Extensometers

0 to 1 in 0.000034" ASTM E83

**MECHANICAL**

NVLAP Code: 20/M06

Force

| Range in lbs   | Best Uncertainty ( $\pm y_{\text{max}}$ ) | Remarks  |
|----------------|-------------------------------------------|----------|
| 1 to 300,000   | 0.05 %                                    | ASTM E74 |
| 1 to 1,000,000 | 0.25 %                                    | ASTM E4  |

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1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .



  
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CALIBRATION LABORATORIES

SE LABORATORIES

1065 Comstock Street  
 Santa Clara, CA 95054  
 Mr. Anil R. Singh  
 Phone: 408-727-3286 Fax: 408-988-6186  
 URL: <http://www.se-labs.com>

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NVLAP LAB CODE 200338-0

**ELECTROMAGNETIC - DC/LOW FREQUENCY**

NVLAP Code: 20/E02  
 AC Current

| Range       | Best Uncertainty ( $\pm$ ) in ppm of output + $nA^{max 1,3}$<br>Frequency in Hertz |           |           |            |             |
|-------------|------------------------------------------------------------------------------------|-----------|-----------|------------|-------------|
|             | 10 to 20                                                                           | 20 to 40  | 40 to 1 k | 1 k to 5 k | 5 k to 10 k |
| 220 $\mu A$ | 250 + 16                                                                           | 160 + 10  | 120 + 8   | 280 + 12   | 1100 + 65   |
| 2.2 mA      | 250 + 40                                                                           | 160 + 35  | 120 + 35  | 200 + 110  | 1100 + 650  |
| 22 mA       | 250 + 400                                                                          | 160 + 350 | 120 + 350 | 200 + 550  | 1100 + 5000 |

| Best Uncertainty ( $\pm$ ) in ppm of output + $\mu A^{max 1,3}$ |            |
|-----------------------------------------------------------------|------------|
| 220 mA                                                          | 250 + 4    |
| 2.2 A                                                           | 160 + 3.5  |
|                                                                 | 120 + 2.5  |
|                                                                 | 200 + 3.5  |
|                                                                 | 1100 + 10  |
|                                                                 | 240 + 35   |
|                                                                 | 260 + 35   |
|                                                                 | 450 + 80   |
|                                                                 | 7000 + 160 |

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NVLAP Code: 20/E05  
 DC Resistance

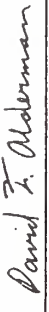
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NVLAP LAB CODE 200338-0

| Range in ohms | Best Uncertainty ( $\pm$ ) in ppm of output <sup>max 1</sup> | Remarks           |
|---------------|--------------------------------------------------------------|-------------------|
| 19 k          | 8.5                                                          | Meter Calibration |
| 100 k         | 11                                                           | Meter Calibration |
| 190 k         | 11                                                           | Meter Calibration |
| 1 M           | 20                                                           | Meter Calibration |
| 1.9 M         | 21                                                           | Meter Calibration |
| 10 M          | 40                                                           | Meter Calibration |
| 19 M          | 47                                                           | Meter Calibration |
| 100 M         | 100                                                          | Meter Calibration |

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|                                                                                     |                                                               |                                                                                                                          |  |
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| <p>ISO/IEC GUIDE 25:1990<br/>ANS/INCSL Z540-1-1994<br/>ISO 9002:1987</p>            |                                                               | <p>Scope of Accreditation</p>                                                                                            |  |
| <p>Revised 1/26/2001</p>                                                            |                                                               | <p>Page 3 of 10</p>                                                                                                      |  |
| <p>CALIBRATION LABORATORIES</p>                                                     |                                                               | <p>NVLAP LAB CODE 200338-0</p>                                                                                           |  |
| <p>SE LABORATORIES</p>                                                              |                                                               |                                                                                                                          |  |
| <p>NVLAP Code: 20/E05<br/>DC Resistance</p>                                         |                                                               |                                                                                                                          |  |
| Range in ohms                                                                       | Best Uncertainty ( $\pm$ ) in ppm of output <sup>1</sup>      | Remarks                                                                                                                  |  |
| 1                                                                                   | 95                                                            | Meter Calibration                                                                                                        |  |
| 1.9                                                                                 | 95                                                            | Meter Calibration                                                                                                        |  |
| 10                                                                                  | 23                                                            | Meter Calibration                                                                                                        |  |
| 19                                                                                  | 23                                                            | Meter Calibration                                                                                                        |  |
| 100                                                                                 | 10                                                            | Meter Calibration                                                                                                        |  |
| 190                                                                                 | 10                                                            | Meter Calibration                                                                                                        |  |
| 1 k                                                                                 | 8.5                                                           | Meter Calibration                                                                                                        |  |
| 1.9 k                                                                               | 8.5                                                           | Meter Calibration                                                                                                        |  |
| 10 k                                                                                | 8.5                                                           | Meter Calibration                                                                                                        |  |
| <p>NVLAP Code: 20/E05<br/>DC Current</p>                                            |                                                               |                                                                                                                          |  |
| Range                                                                               | Best Uncertainty ( $\pm$ ) in ppm of output + nA <sup>1</sup> | Remarks                                                                                                                  |  |
| 220 $\mu$ A                                                                         | 40 + 6                                                        | Meter Calibration                                                                                                        |  |
| 2.2 mA                                                                              | 35 + 7                                                        | Meter Calibration                                                                                                        |  |
| 22 mA                                                                               | 35 + 40                                                       | Meter Calibration                                                                                                        |  |
| <p>March 31, 2001</p>                                                               |                                                               | <p>David F. Alderman</p>                                                                                                 |  |
| <p>Effective through</p>                                                            |                                                               | <p>For the National Institute of Standards and Technology</p>                                                            |  |
| <p>NVLAP-Q25 (11-95)</p>                                                            |                                                               |                                                                                                                          |  |

|                                                                                   |                                                                    |                                                                                                                          |  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--|
|  |                                                                    | <p>National Institute<br/>of Standards and Technology</p> <p>National Voluntary<br/>Laboratory Accreditation Program</p> |  |
| <p>ISO/IEC GUIDE 25:1990<br/>ANS/INCSL Z540-1-1994<br/>ISO 9002:1987</p>          |                                                                    | <p>Scope of Accreditation</p>                                                                                            |  |
| <p>Revised 1/26/2001</p>                                                          |                                                                    | <p>Page 4 of 10</p>                                                                                                      |  |
| <p>CALIBRATION LABORATORIES</p>                                                   |                                                                    | <p>NVLAP LAB CODE 200338-0</p>                                                                                           |  |
| <p>SE LABORATORIES</p>                                                            |                                                                    |                                                                                                                          |  |
| <p>NVLAP Code: 20/E06<br/>DC Voltage</p>                                          |                                                                    |                                                                                                                          |  |
| Range                                                                             | Best Uncertainty ( $\pm$ ) in ppm of output + $\mu$ A <sup>1</sup> | Remarks                                                                                                                  |  |
| 220 mA                                                                            | 45 + 7                                                             | add ( $\pm$ ) 200 x 1 <sup>2</sup> in ppm                                                                                |  |
| 2.2 A                                                                             | 80 + 12                                                            | add ( $\pm$ ) 10 x 1 <sup>2</sup> in ppm                                                                                 |  |
| <p>NVLAP Code: 20/E06<br/>DC Voltage</p>                                          |                                                                    |                                                                                                                          |  |
| Range in volts                                                                    | Best Uncertainty ( $\pm$ ) in ppm of output <sup>1,2</sup>         | Remarks                                                                                                                  |  |
| <p>Reference Standards</p>                                                        |                                                                    |                                                                                                                          |  |
| 1.0                                                                               | 1.68                                                               | Zener Reference <sup>2</sup>                                                                                             |  |
| 1.018                                                                             | 2.13                                                               | Zener Reference <sup>2</sup>                                                                                             |  |
| 10                                                                                | 3.54                                                               | Zener Reference <sup>2</sup>                                                                                             |  |
| <p>Range in volts</p>                                                             |                                                                    |                                                                                                                          |  |
| 220 m                                                                             | 7.5 + 0.4                                                          | Best Uncertainty ( $\pm$ ) in ppm of output + $\mu$ V <sup>1</sup>                                                       |  |
| 2.2                                                                               | 5 + .07                                                            | Meter Calibration                                                                                                        |  |
| 11                                                                                | 3.5 + 2.5                                                          | Meter Calibration                                                                                                        |  |
| 22                                                                                | 3.5 + 4                                                            | Meter Calibration                                                                                                        |  |
| 220                                                                               | 5 + 40                                                             | Meter Calibration                                                                                                        |  |
| 1100                                                                              | 6.5 + 400                                                          | Meter Calibration                                                                                                        |  |
| <p>March 31, 2001</p>                                                             |                                                                    | <p>David F. Alderman</p>                                                                                                 |  |
| <p>Effective through</p>                                                          |                                                                    | <p>For the National Institute of Standards and Technology</p>                                                            |  |
| <p>NVLAP-Q25 (11-95)</p>                                                          |                                                                    |                                                                                                                          |  |

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NVLAP Code: 20/E09  
LF AC Voltage

| Range | 10 to 20  | 20 to 40 | 40 to 20 k | 20 k to 50 k | 50 k to 100 k | 100 k to 300 k | 300 k to 500 k | 500 k to 1 MHz |
|-------|-----------|----------|------------|--------------|---------------|----------------|----------------|----------------|
| 2.2 m | 240 + 4   | 90 + 4   | 80 + 4     | 200 + 4      | 500 + 5       | 1050 + 10      | 1400 + 20      | 2700 + 20      |
| 22 m  | 240 + 4   | 90 + 4   | 80 + 4     | 200 + 4      | 500 + 5       | 1050 + 10      | 1400 + 20      | 2700 + 20      |
| 220 m | 240 + 12  | 90 + 7   | 80 + 7     | 200 + 7      | 460 + 17      | 900 + 20       | 1400 + 25      | 2700 + 45      |
| 2.2   | 240 + 40  | 90 + 15  | 45 + 8     | 75 + 10      | 110 + 300     | 420 + 80       | 1000 + 200     | 1700 + 300     |
| 22    | 240 + 400 | 90 + 150 | 45 + 50    | 75 + 100     | 100 + 200     | 275 + 600      | 1000 + 2000    | 1500 + 3200    |

*Best Uncertainty (±) in ppm of output +  $\mu V_{\text{meas}}$  1,3*

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NVLAP Code: 20/F01  
Frequency Dissemination

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS

NVLAP Code: 20/F03  
Oscillator Characterization

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS

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NVLAP Code: 20/F01  
Frequency Dissemination

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS

NVLAP Code: 20/F03  
Oscillator Characterization

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
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NVLAP Code: 20/F01  
Frequency Dissemination

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS

NVLAP Code: 20/F03  
Oscillator Characterization

| Range in MHz                                  | 0.1                  | 1                    | 5                    | 10                   |
|-----------------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Best Uncertainty (±) $\gamma_{\text{meas}}$ t | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ | 4 parts in $10^{12}$ |

*Remarks*

Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS  
Cesium Beam GPS

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200338-0

#### SE LABORATORIES

#### ELECTROMAGNETIC - RF/MICROWAVE

NVLAP Code: 20/R08  
Microwave Antenna Parameters

##### Range in MHz

Best Uncertainty ( $\pm$ )<sup>year 1</sup>

Remarks

LISN's

0.010 to 100

0.3 dB

Insertion Loss

0.010 to 100

3.4 % of reading

Impedance

4 to 65 Ohms

CDN's

0.010 to 230

0.3 dB

Insertion Loss

0.010 to 230

3.4 % of reading

Impedance

Nominal 150 Ohms

NVLAP Code: 20/R12  
RF Microwave Bolometer Units

##### Power Level Range

Best Uncertainty ( $\pm$ )<sup>year 1</sup>

Frequency<sup>year 5</sup>

1 microwatt to 10 milliwatts

0.5 % of reading

0.01 to 0.04 GHz

0.3 % of reading

0.05 to 1.0 GHz

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## CALIBRATION LABORATORIES

NVLAP LAB CODE 200338-0

## SE LABORATORIES

**NVLAP Code:** 20/R13  
RF Microwave Attenuators

Reflection Coefficient (or Scattering Parameters S<sub>n</sub>)

HP8510 Vector Network Analyzer Uncertainties

- Expanded Uncertainties on one or two port devices

| <i>Connector Type</i> | <i>Quantity</i>      | <i>Quantity Range</i>                       | <i>.01-.45</i> | <i>45-2000</i> | <i>Frequency (MHz)</i> |                   |                    |
|-----------------------|----------------------|---------------------------------------------|----------------|----------------|------------------------|-------------------|--------------------|
|                       |                      |                                             |                |                | <i>2000-8000</i>       | <i>8000-18000</i> | <i>20000-26500</i> |
| N                     | S <sub>n</sub>       | 0 - 1                                       | .0063 -.0204   | .0063 -.0204   | .0102 -.0340           | .0136 -.0479      |                    |
| APC-7                 | S <sub>n</sub>       | 0 - 1                                       | .0114-.0261    | .0114-.0261    | .0114-.0325            | .0148-.0467       |                    |
| APC-3.5               | S <sub>n</sub>       | 0 - 1                                       | .0054-.0174    | .0064-.0228    | .0056-.0149            | .0088-.0182***†   | .0090-.0185        |
| N                     | Avg(S <sub>n</sub> ) | 0 <  S <sub>n</sub>   ≤ 1<br>-180 + 180 deg | 1.7-180        | 1.48-180       | 6.73-180               | 8.21-180          |                    |
| APC-7                 | Avg(S <sub>n</sub> ) | 0 <  S <sub>n</sub>   ≤ 1<br>-180 + 180 deg | 1.4-180        | 2.08-180       | 6.93-180               | 8.41-180          |                    |
| APC-3.5               | Avg(S <sub>n</sub> ) | 0 <  S <sub>n</sub>   ≤ 1<br>-180 + 180 deg | 1.6-180        | 1.73-180       | 5.59-180               | 6.65-180***†      | 7.91-180           |

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NVLAP LAB CODE 200348-0

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**CALIBRATION LABORATORIES**

**HART SCIENTIFIC CALIBRATION LABORATORY**

799 E. Utah Valley Drive  
American Fork, UT 84003-9775  
Mr. Thomas J. Wiandt  
Phone: 801-763-1600 Fax: 801-763-1010  
E-Mail: tom\_wiandt@hartscientific.com  
URL: <http://www.hartscientific.com/product/cal-service.htm>

September 30, 2001

Effective through

*David F. Alderman*

For the National Institute of Standards and Technology

**ELECTROMAGNETICS - DC/LOW FREQUENCY**

NVLAP Labcode: 20/E05

| Range                           | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Remarks       |
|---------------------------------|----------------------------------------------|---------------|
| 1 $\Omega$ to 10 $\Omega$       | 0.35 ppm                                     | DC Resistance |
| 10 $\Omega$ to 100 $\Omega$     | 0.45 ppm                                     | DC Resistance |
| 100 $\Omega$ to 1000 $\Omega$   | 0.60 ppm                                     | DC Resistance |
| 1000 $\Omega$ to 10000 $\Omega$ | 0.70 ppm                                     | DC Resistance |

NVLAP 02S (11-95)



National Institute  
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ISO/IEC GUIDE 25:1990  
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ISO 9002:1987



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UNITED STATES OF AMERICA

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NVLAP LAB CODE 200348-0

## Scope of Accreditation

**CALIBRATION LABORATORIES**

**HART SCIENTIFIC CALIBRATION LABORATORY**

**THERMODYNAMICS**

NVLAP Code: 20/T07

Resistance Thermometry - Calibration of Thermometric Devices

| Range                                             | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Remarks             |
|---------------------------------------------------|----------------------------------------------|---------------------|
| -197 °C (LN <sub>2</sub> )<br>(TPAR substitution) | 0.5 mK                                       | Direct Comparison   |
| -38.8344 °C (TPHg)                                | 0.4 mK                                       | Fixed Point         |
| 0.010 °C (TPW)                                    | 0.2 mK                                       | Fixed Point         |
| 29.7646 °C (MPCa)                                 | 0.4 mK                                       | Fixed Point         |
| 156.599 °C (FPIn)                                 | 0.9 mK                                       | Fixed Point         |
| 231.928 °C (FPSn)                                 | 0.9 mK                                       | Fixed Point         |
| 419.527 °C (FPZn)                                 | 1.1 mK                                       | Fixed Point         |
| 660.323 °C (FPAI)                                 | 2.1 mK                                       | Fixed Point         |
| 961.78 °C (FPAg)                                  | 10.0 mK                                      | Fixed Point         |
| -200 °C                                           | 10 mK                                        | Comparison Method 1 |
| -100 °C to -50 °C                                 | 10 mK                                        | Comparison Method 1 |
| -50 °C to 0 °C                                    | 8 mK                                         | Comparison Method 1 |

September 30, 2001

Effective through

*David F. Alderman*

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NVLAP 02S (11-95)

## 2001 DIRECTORY

ZVLAF 2001 DIRECTORY

(See 'How To Use This Directory' on page 7.)

|                                                                                                                                                                                                   |         |                                                                                                                                                |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  <p>National Institute of Standards and Technology<br/>National Voluntary Laboratory Accreditation Program</p> |         |  <p>DEPARTMENT OF COMMERCE<br/>UNITED STATES OF AMERICA</p> |  |
| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL Z540-1-1994<br/>ISO 9002:1987</p>                                                                                                                          |         | <p>Page 5 of 7</p>                                                                                                                             |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                              |         | <p>NVLAP LAB CODE 200348-0</p>                                                                                                                 |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                   |         | <p>HART SCIENTIFIC CALIBRATION LABORATORY</p>                                                                                                  |  |
| MPGa                                                                                                                                                                                              | 0.08 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| FPIn                                                                                                                                                                                              | 0.50 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| FPSn                                                                                                                                                                                              | 0.60 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| FPZn                                                                                                                                                                                              | 0.80 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| FPAI                                                                                                                                                                                              | 1.50 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| FPAg                                                                                                                                                                                              | 3.50 mK | Direct Comparison To Reference Cells                                                                                                           |  |
| TPHg                                                                                                                                                                                              | 0.25 mK | Direct Comparison to Working Cells                                                                                                             |  |
| TPW                                                                                                                                                                                               | 0.10 mK | Direct Comparison to Working Cells                                                                                                             |  |
| MPGa                                                                                                                                                                                              | 0.10 mK | Direct Comparison to Working Cells                                                                                                             |  |
| FPIn                                                                                                                                                                                              | 0.70 mK | Direct Comparison to Working Cells                                                                                                             |  |
| FPSu                                                                                                                                                                                              | 0.80 mK | Direct Comparison to Working Cells                                                                                                             |  |
| FPZn                                                                                                                                                                                              | 1.00 mK | Direct Comparison to Working Cells                                                                                                             |  |
| FPAI                                                                                                                                                                                              | 1.80 mK | Direct Comparison to Working Cells                                                                                                             |  |
| FPAg                                                                                                                                                                                              | 4.50 mK | Direct Comparison to Working Cells                                                                                                             |  |
| <p>September 30, 2001</p>                                                                                                                                                                         |         | <p>David F. Alderman</p>                                                                                                                       |  |
| <p>Effective through</p>                                                                                                                                                                          |         | <p>For the National Institute of Standards and Technology</p>                                                                                  |  |
| <p>NVLAP-02S (11-95)</p>                                                                                                                                                                          |         |                                                                                                                                                |  |

|                                                                                                                                                                                                 |          |                                                                                                                                              |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------|--|
|  <p>National Institute of Standards and Technology<br/>National Voluntary Laboratory Accreditation Program</p> |          |  <p>DEPARTMENT OF COMMERCE<br/>UNITED STATES OF AMERICA</p> |  |
| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL Z540-1-1994<br/>ISO 9002:1987</p>                                                                                                                        |          | <p>Page 6 of 7</p>                                                                                                                           |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                            |          | <p>NVLAP LAB CODE 200348-0</p>                                                                                                               |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                 |          | <p>HART SCIENTIFIC CALIBRATION LABORATORY</p>                                                                                                |  |
| <p>Digital Thermometry (readout devices that actually measure resistance)</p>                                                                                                                   |          |                                                                                                                                              |  |
| 0.25 to 4.0                                                                                                                                                                                     | 0.20 ppm | Ratio Function                                                                                                                               |  |
| 1 $\Omega$                                                                                                                                                                                      | 5 ppm    | Resistance Function                                                                                                                          |  |
| 10 $\Omega$                                                                                                                                                                                     | 4 ppm    | Resistance Function                                                                                                                          |  |
| 100 $\Omega$                                                                                                                                                                                    | 1 ppm    | Resistance Function                                                                                                                          |  |
| 10000 $\Omega$                                                                                                                                                                                  | 2 ppm    | Resistance Function                                                                                                                          |  |
| 0 $\Omega$ to 400 $\Omega$                                                                                                                                                                      | 4 ppm    | Resistance Function                                                                                                                          |  |
| 400 $\Omega$ to 10 k $\Omega$                                                                                                                                                                   | 8 ppm    | Resistance Function                                                                                                                          |  |
| 10 k $\Omega$ to 100 k $\Omega$                                                                                                                                                                 | 8 ppm    | Resistance Function                                                                                                                          |  |
| 100 k $\Omega$ to 1 M $\Omega$                                                                                                                                                                  | 25 ppm   | Resistance Function                                                                                                                          |  |
| <p>September 30, 2001</p>                                                                                                                                                                       |          | <p>David F. Alderman</p>                                                                                                                     |  |
| <p>Effective through</p>                                                                                                                                                                        |          | <p>For the National Institute of Standards and Technology</p>                                                                                |  |
| <p>NVLAP-02S (11-95)</p>                                                                                                                                                                        |          |                                                                                                                                              |  |





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DEPARTMENT OF COMMERCE  
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**Scope of Accreditation**

ISO/IEC GUIDE 25:1990  
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NVLAP LAB CODE 200348-0

CALIBRATION LABORATORIES

HART SCIENTIFIC CALIBRATION LABORATORY

NVLAP Code: 20/T08  
Thermocouples

| Range                                                                | Best Uncertainty ( $\pm y_{\text{max}}$ ) | Remarks                                  |
|----------------------------------------------------------------------|-------------------------------------------|------------------------------------------|
| Type S & Type R                                                      | 100 mK                                    | Fixed Point                              |
| Au/Pt                                                                | 20 mK                                     | Fixed Point                              |
| Digital Thermometers                                                 |                                           |                                          |
| 0 °C to 25.0 °C                                                      | 10 mK                                     | Internal Reference Junction Compensation |
| Digital Thermometers (readout devices that actually measure voltage) |                                           |                                          |
| 0 mV to 50 mV                                                        | 0.45 $\mu$ V                              | Voltage Function                         |
| 50 mV to 100 mV                                                      | 0.75 $\mu$ V                              | Voltage Function                         |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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September 30, 2001

*David F. Alderman*

For the National Institute of Standards and Technology

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Effective through

NVLAP-Q25 (11-95)



National Institute  
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DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

**Scope of Accreditation**

ISO/IEC GUIDE 25:1990  
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NVLAP LAB CODE 200352-0

CALIBRATION LABORATORIES

GTE SUPPLY ELECTRONIC REPAIR SERVICES

3301 Wayne Trace  
Fort Wayne, IN 46806-1400  
Mr. Jeff C. Gust  
Phone: 219-428-6504 Fax: 219-424-1031  
E-Mail: jeff.gust@supply.gie.com

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E05  
DC Resistance

| Range          | Best Uncertainty ( $\pm y_{\text{max}}$ ) | Remarks |
|----------------|-------------------------------------------|---------|
| 0.001 ohm      | 1.5 ppm                                   |         |
| 0.01 ohm       | 1 ppm                                     |         |
| 0.1 ohm        | 1 ppm                                     |         |
| 1 ohm          | 0.5 ppm                                   |         |
| 10 ohm         | 2.5 ppm                                   |         |
| 100 ohm        | 3.5 ppm                                   |         |
| 1,000 ohm      | 4.5 ppm                                   |         |
| 10,000 ohm     | 0.5 ppm                                   |         |
| 100,000 ohm    | 2.5 ppm                                   |         |
| 1,000,000 ohm  | 7 ppm                                     |         |
| 10,000,000 ohm | 15 ppm                                    |         |

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June 30, 2001

*David F. Alderman*

For the National Institute of Standards and Technology

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Effective through

NVLAP-Q25 (11-95)

|                                                                                     |                                                         |                                                                                                             |  |
|-------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--|
|  |                                                         | National Institute<br>of Standards and Technology<br>National Voluntary<br>Laboratory Accreditation Program |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                     |                                                         |                                                                                                             |  |
| <b>Scope of Accreditation</b>                                                       |                                                         | Page 2 of 2<br>NVLAP LAB CODE 200352-0                                                                      |  |
| CALIBRATION LABORATORIES                                                            |                                                         | GTE ELECTRONIC REPAIR SERVICE                                                                               |  |
| 100,000,000 ohm<br>1,000,000,000 ohm                                                | -35 ppm<br>125 ppm                                      |                                                                                                             |  |
| NVLAP Code: 20/E06<br>DC Voltage                                                    |                                                         |                                                                                                             |  |
| Range<br>10 V Zener Ref                                                             | Best Uncertainty ( $\pm$ ) <sup>year 1</sup><br>0.5 ppm | Remarks                                                                                                     |  |
| 1. Represents an expanded uncertainty using a coverage factor, k=2.                 |                                                         |                                                                                                             |  |
| June 30, 2001                                                                       |                                                         | David F. Alderman                                                                                           |  |
| Effective through                                                                   |                                                         | For the National Institute of Standards and Technology                                                      |  |
| NVLAP 02S (11-95)                                                                   |                                                         |                                                                                                             |  |

|                                                                                              |                                                       |                                                                                                                                                           |  |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|             |                                                       | National Institute<br>of Standards and Technology<br>National Voluntary<br>Laboratory Accreditation Program                                               |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                              |                                                       |                                                                                                                                                           |  |
| <b>Scope of Accreditation</b>                                                                |                                                       | Page 1 of 2<br>NVLAP LAB CODE 200370-0                                                                                                                    |  |
| CALIBRATION LABORATORIES                                                                     |                                                       | MDS NORDION DOSIMETRY LABORATORY<br>447 March Road<br>Kanata Ontario K2K 1X8<br>Canada<br>Mr. David Sidney<br>Phone: 613-592-3400 x2242 Fax: 613-592-2006 |  |
| IONIZING RADIATION DOSIMETRY<br>NVLAP Code: 20/I02<br>High-Dose Dosimetry                    |                                                       |                                                                                                                                                           |  |
| Evaluation of Transfer-standard and Reference-standard Dosimeters for Production Irradiators |                                                       |                                                                                                                                                           |  |
| Range<br>.5 to 50 kGy                                                                        | Best Uncertainty ( $\pm$ ) <sup>year 1</sup><br>4.0 % | Remarks<br>Results reported as absorbed dose.                                                                                                             |  |
| Evaluation of Transfer-standard and Reference-standard Dosimeters for Research Irradiators   |                                                       |                                                                                                                                                           |  |
| Range<br>20 to 400 Gy                                                                        | Best Uncertainty ( $\pm$ ) <sup>year 1</sup><br>2.0 % | Remarks<br>Results reported as absorbed dose or absorbed-dose rate.                                                                                       |  |
| March 31, 2001                                                                               |                                                       | David F. Alderman                                                                                                                                         |  |
| Effective through                                                                            |                                                       | For the National Institute of Standards and Technology                                                                                                    |  |
| NVLAP 02S (11-95)                                                                            |                                                       |                                                                                                                                                           |  |

## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

| <br>National Institute<br>of Standards and Technology |                                                                 | National Voluntary<br>Laboratory Accreditation Program                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                          |                                                                 | <b>Scope of Accreditation</b>                                                                                                             |  |
| <b>CALIBRATION LABORATORIES</b>                                                                                                          |                                                                 | <b>NVLAP LAB CODE 200370-0</b>                                                                                                            |  |
| <b>MDS NORDION DOSIMETRY LABORATORY</b>                                                                                                  |                                                                 |                                                                                                                                           |  |
| Irradiation of Dosimeters for Known Absorbed-dose Levels                                                                                 |                                                                 |                                                                                                                                           |  |
| <b>Range</b><br>Specified by the needs of the customer.                                                                                  | <b>Best Uncertainty (<math>\pm</math>)<sup>1</sup></b><br>2.3 % | <b>Remarks</b><br>Results reported as absorbed-dose values or may be analyzed for dosimeter response and reported as a calibration curve. |  |
| Calibration of Routine Dosimeters using Reference-standard or Transfer-standard Dosimeters                                               |                                                                 |                                                                                                                                           |  |
| <b>Range</b><br>0.5 to 50 kGy                                                                                                            | <b>Best Uncertainty (<math>\pm</math>)<sup>1</sup></b><br>4.0 % | <b>Remarks</b><br>Results reported as absorbed-dose values or may be analyzed for dosimeter response and reported as a calibration curve. |  |
| 1. Represents an expanded uncertainty using a coverage factor, $k=2$ .                                                                   |                                                                 |                                                                                                                                           |  |
| March 31, 2001                                                                                                                           |                                                                 | David F. Alderman                                                                                                                         |  |
| Effective through                                                                                                                        |                                                                 | For the National Institute of Standards and Technology                                                                                    |  |
| NVLAP-025 (11-95)                                                                                                                        |                                                                 |                                                                                                                                           |  |

NVLAP 2001 DIRECTORY

(See 'How To Use This Directory' on page 7.)

| <br>National Institute<br>of Standards and Technology                                                                                                                         |                                                                  | National Voluntary<br>Laboratory Accreditation Program |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------|--|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                                                                                                                                |                                                                  | <b>Scope of Accreditation</b>                          |  |
| <b>CALIBRATION LABORATORIES</b>                                                                                                                                                                                                                                |                                                                  | <b>NVLAP LAB CODE 200396-0</b>                         |  |
| <b>OKLAHOMA BUREAU OF STANDARDS</b><br>2800 North Lincoln Boulevard<br>Oklahoma City, OK 73105<br>Mr. Ken Fraley<br>Phone: 405-521-3864 Fax: 405-521-4912<br>E-Mail: kfraley@odagis.oklaosf.state.ok.us<br>URL: http://www.state.ok.us/~okag/aglab.bureau.html |                                                                  |                                                        |  |
| <b>DIMENSIONAL</b>                                                                                                                                                                                                                                             |                                                                  |                                                        |  |
| NVLAP Code: 20/D13<br>Surveying Rods and Tapes                                                                                                                                                                                                                 |                                                                  |                                                        |  |
| <b>Interval in inches</b>                                                                                                                                                                                                                                      | <b>Best Uncertainty (<math>\pm</math>) in inches<sup>1</sup></b> | <b>Remarks</b>                                         |  |
| 0 to 12                                                                                                                                                                                                                                                        | 0.00230                                                          | Rigid Rules                                            |  |
| 0 to 24                                                                                                                                                                                                                                                        | 0.00297                                                          | Rigid Rules                                            |  |
| 0 to 36                                                                                                                                                                                                                                                        | 0.00351                                                          | Rigid Rules                                            |  |
| 0 to 48                                                                                                                                                                                                                                                        | 0.00398                                                          | Rigid Rules                                            |  |
| <b>Tape Interval in feet</b>                                                                                                                                                                                                                                   | <b>Best Uncertainty (<math>\pm</math>) in inches<sup>1</sup></b> | <b>Remarks</b>                                         |  |
| 0 to 1                                                                                                                                                                                                                                                         | 0.0037                                                           | Steel Tapes                                            |  |
| 0 to 2                                                                                                                                                                                                                                                         | 0.0038                                                           | Steel Tapes                                            |  |
| 0 to 3                                                                                                                                                                                                                                                         | 0.0038                                                           | Steel Tapes                                            |  |
| 0 to 4                                                                                                                                                                                                                                                         | 0.0038                                                           | Steel Tapes                                            |  |
| December 31, 2001                                                                                                                                                                                                                                              |                                                                  | David F. Alderman                                      |  |
| Effective through                                                                                                                                                                                                                                              |                                                                  | For the National Institute of Standards and Technology |  |
| NVLAP-025 (11-95)                                                                                                                                                                                                                                              |                                                                  |                                                        |  |

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## Scope of Accreditation

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200396-0

#### OKLAHOMA BUREAU OF STANDARDS

|          |        |             |
|----------|--------|-------------|
| 0 to 5   | 0.0039 | Steel Tapes |
| 0 to 6   | 0.0039 | Steel Tapes |
| 0 to 7   | 0.0039 | Steel Tapes |
| 0 to 8   | 0.0039 | Steel Tapes |
| 0 to 9   | 0.0041 | Steel Tapes |
| 0 to 10  | 0.0041 | Steel Tapes |
| 0 to 20  | 0.0048 | Steel Tapes |
| 0 to 30  | 0.0054 | Steel Tapes |
| 0 to 40  | 0.0060 | Steel Tapes |
| 0 to 50  | 0.0065 | Steel Tapes |
| 0 to 60  | 0.0069 | Steel Tapes |
| 0 to 70  | 0.0074 | Steel Tapes |
| 0 to 80  | 0.0078 | Steel Tapes |
| 0 to 90  | 0.0082 | Steel Tapes |
| 0 to 100 | 0.0087 | Steel Tapes |
| 0 to 110 | 0.0090 | Steel Tapes |
| 0 to 120 | 0.0094 | Steel Tapes |
| 0 to 130 | 0.0098 | Steel Tapes |

December 31, 2001

Effective through

*David F. Alderman*

For the National Institute of Standards and Technology

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## Scope of Accreditation

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200396-0

#### OKLAHOMA BUREAU OF STANDARDS

|          |        |                          |
|----------|--------|--------------------------|
| 0 to 140 | 0.0102 | Steel Tapes              |
| 0 to 150 | 0.0105 | Steel Tapes              |
| 0 to 1   | 0.0043 | Fiberglass/Plastic Tapes |
| 0 to 2   | 0.0043 | Fiberglass/Plastic Tapes |
| 0 to 3   | 0.0044 | Fiberglass/Plastic Tapes |
| 0 to 4   | 0.0044 | Fiberglass/Plastic Tapes |
| 0 to 5   | 0.0046 | Fiberglass/Plastic Tapes |
| 0 to 6   | 0.0047 | Fiberglass/Plastic Tapes |
| 0 to 7   | 0.0048 | Fiberglass/Plastic Tapes |
| 0 to 8   | 0.0049 | Fiberglass/Plastic Tapes |
| 0 to 9   | 0.0051 | Fiberglass/Plastic Tapes |
| 0 to 10  | 0.0052 | Fiberglass/Plastic Tapes |
| 0 to 20  | 0.0075 | Fiberglass/Plastic Tapes |
| 0 to 30  | 0.0100 | Fiberglass/Plastic Tapes |
| 0 to 40  | 0.0125 | Fiberglass/Plastic Tapes |
| 0 to 50  | 0.0150 | Fiberglass/Plastic Tapes |
| 0 to 60  | 0.0175 | Fiberglass/Plastic Tapes |

December 31, 2001

Effective through

David F. Alderman

For the National Institute of Standards and Technology



## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

| <br>National Institute<br>of Standards and Technology |                          | National Voluntary<br>Laboratory Accreditation Program                                                                                   |  |
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| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                          |                          | <br>DEPARTMENT OF COMMERCE • UNITED STATES OF AMERICA |  |
| Scope of Accreditation                                                                                                                   |                          |                                                                                                                                          |  |
| CALIBRATION LABORATORIES                                                                                                                 |                          | NVLAP LAB CODE 200396-0                                                                                                                  |  |
| OKLAHOMA BUREAU OF STANDARDS                                                                                                             |                          | Page 4 of 14                                                                                                                             |  |
| 0 to 70                                                                                                                                  | Fiberglass/Plastic Tapes | 0.0200                                                                                                                                   |  |
| 0 to 80                                                                                                                                  | Fiberglass/Plastic Tapes | 0.0225                                                                                                                                   |  |
| 0 to 90                                                                                                                                  | Fiberglass/Plastic Tapes | 0.0251                                                                                                                                   |  |
| 0 to 100                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0276                                                                                                                                   |  |
| 0 to 110                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0301                                                                                                                                   |  |
| 0 to 120                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0327                                                                                                                                   |  |
| 0 to 130                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0352                                                                                                                                   |  |
| 0 to 140                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0378                                                                                                                                   |  |
| 0 to 150                                                                                                                                 | Fiberglass/Plastic Tapes | 0.0403                                                                                                                                   |  |
| 0 to 1                                                                                                                                   | Cloth Tapes              | 0.0054                                                                                                                                   |  |
| 0 to 2                                                                                                                                   | Cloth Tapes              | 0.0055                                                                                                                                   |  |
| 0 to 3                                                                                                                                   | Cloth Tapes              | 0.0055                                                                                                                                   |  |
| 0 to 4                                                                                                                                   | Cloth Tapes              | 0.0056                                                                                                                                   |  |
| 0 to 5                                                                                                                                   | Cloth Tapes              | 0.0057                                                                                                                                   |  |
| 0 to 6                                                                                                                                   | Cloth Tapes              | 0.0057                                                                                                                                   |  |
| 0 to 7                                                                                                                                   | Cloth Tapes              | 0.0058                                                                                                                                   |  |
| 0 to 8                                                                                                                                   | Cloth Tapes              | 0.0059                                                                                                                                   |  |

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*David F. Alderman*

For the National Institute of Standards and Technology

NVLAP-02S (11-95)

| <br>National Institute<br>of Standards and Technology |             | National Voluntary<br>Laboratory Accreditation Program                                                                                 |  |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------|--|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                        |             | <br>DEPARTMENT OF COMMERCE • UNITED STATES OF AMERICA |  |
| Scope of Accreditation                                                                                                                 |             |                                                                                                                                        |  |
| CALIBRATION LABORATORIES                                                                                                               |             | NVLAP LAB CODE 200396-0                                                                                                                |  |
| OKLAHOMA BUREAU OF STANDARDS                                                                                                           |             | Page 5 of 14                                                                                                                           |  |
| 0 to 9                                                                                                                                 | Cloth Tapes | 0.0061                                                                                                                                 |  |
| 0 to 10                                                                                                                                | Cloth Tapes | 0.0062                                                                                                                                 |  |
| 0 to 20                                                                                                                                | Cloth Tapes | 0.0089                                                                                                                                 |  |
| 0 to 30                                                                                                                                | Cloth Tapes | 0.0116                                                                                                                                 |  |
| 0 to 40                                                                                                                                | Cloth Tapes | 0.0142                                                                                                                                 |  |
| 0 to 50                                                                                                                                | Cloth Tapes | 0.0167                                                                                                                                 |  |
| 0 to 60                                                                                                                                | Cloth Tapes | 0.0193                                                                                                                                 |  |
| 0 to 70                                                                                                                                | Cloth Tapes | 0.0219                                                                                                                                 |  |
| 0 to 80                                                                                                                                | Cloth Tapes | 0.0245                                                                                                                                 |  |
| 0 to 90                                                                                                                                | Cloth Tapes | 0.0270                                                                                                                                 |  |
| 0 to 100                                                                                                                               | Cloth Tapes | 0.0296                                                                                                                                 |  |
| 0 to 110                                                                                                                               | Cloth Tapes | 0.0321                                                                                                                                 |  |
| 0 to 120                                                                                                                               | Cloth Tapes | 0.0347                                                                                                                                 |  |
| 0 to 130                                                                                                                               | Cloth Tapes | 0.0372                                                                                                                                 |  |
| 0 to 140                                                                                                                               | Cloth Tapes | 0.0398                                                                                                                                 |  |
| 0 to 150                                                                                                                               | Cloth Tapes | 0.0424                                                                                                                                 |  |

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| <br>National Institute<br>of Standards and Technology |                                                                                                                                 | National Voluntary<br>Laboratory Accreditation Program                                                                                                                                                         |                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                          |                                                                                                                                 | Scope of Accreditation                                                                                                                                                                                         |                                                                                                                                                                                                                                                                    |
| CALIBRATION LABORATORIES                                                                                                                 |                                                                                                                                 | Page 6 of 14<br>NVLAP LAB CODE 200396-0                                                                                                                                                                        |                                                                                                                                                                                                                                                                    |
| OKLAHOMA BUREAU OF STANDARDS                                                                                                             |                                                                                                                                 |                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                    |
| <b>MECHANICAL</b><br>NVLAP Code: 20/M08<br>Mass - Metric                                                                                 | <b>Range</b><br>30 kg<br>20 kg<br>10 kg<br>5 kg<br>3 kg<br>2 kg<br><br>1 kg<br>500 g<br>300 g<br>200 g<br>100 g<br>50 g<br>30 g | <b>Best Uncertainty (<math>\pm</math>)<sup>1</sup></b><br>22.9 mg<br>13.4 mg<br>8.0 mg<br>2.02 mg<br>1.02 mg<br>0.76 mg<br><br>0.10 mg<br>0.076 mg<br>0.045 mg<br>0.045 mg<br>0.048 mg<br>0.023 mg<br>0.014 mg | <b>Remarks</b><br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br><br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I |

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| <br>National Institute<br>of Standards and Technology               |                                                                                                                                                                                                                                        | National Voluntary<br>Laboratory Accreditation Program                                                                                                                                                                                                                                                                                           |                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                      |                                                                                                                                                                                                                                        | Scope of Accreditation                                                                                                                                                                                                                                                                                                                           |                                                                                                                       |
| CALIBRATION LABORATORIES                                                                                                                             |                                                                                                                                                                                                                                        | Page 7 of 14<br>NVLAP LAB CODE 200396-0                                                                                                                                                                                                                                                                                                          |                                                                                                                       |
| OKLAHOMA BUREAU OF STANDARDS                                                                                                                         |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                       |
| 20 g<br>10 g<br>5 g<br>3 g<br>2 g<br>1 g<br>500 mg<br>300 mg<br>200 mg<br>100 mg<br>50 mg<br>30 mg<br>20 mg<br>10 mg<br>5 mg<br>3 mg<br>2 mg<br>1 mg | 0.0109 mg<br>0.0071 mg<br>0.0037 mg<br>0.0026 mg<br>0.0022 mg<br>0.0016 mg<br>0.0010 mg<br>0.0007 mg<br>0.0005 mg<br>0.0008 mg<br>0.0003 mg<br>0.0002 mg<br>0.0002 mg<br>0.0002 mg<br>0.0001 mg<br>0.0002 mg<br>0.0001 mg<br>0.0002 mg | Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I<br>Accuracy Class I | December 31, 2001<br>Effective through<br>David T. Alderman<br>For the National Institute of Standards and Technology |

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OKLAHOMA BUREAU OF STANDARDS

| CALIBRATION LABORATORIES | OKLAHOMA BUREAU OF STANDARDS | Accuracy Class    |
|--------------------------|------------------------------|-------------------|
| 450 kg                   | 1.3 g                        | Accuracy Class II |
| 227 kg                   | 703.1 mg                     | Accuracy Class II |
| 30 kg                    | 24.4 mg                      | Accuracy Class II |
| 20 kg                    | 14.7 mg                      | Accuracy Class II |
| 10 kg                    | 8.9 mg                       | Accuracy Class II |
| 5 kg                     | 2.85 mg                      | Accuracy Class II |
| 3 kg                     | 1.76 mg                      | Accuracy Class II |
| 2 kg                     | 1.69 mg                      | Accuracy Class II |
| 1 kg                     | 0.200 mg                     | Accuracy Class II |
| 500 g                    | 0.198 mg                     | Accuracy Class II |
| 300 g                    | 0.155 mg                     | Accuracy Class II |
| 200 g                    | 0.143 mg                     | Accuracy Class II |
| 100 g                    | 0.058 mg                     | Accuracy Class II |
| 50 g                     | 0.030 mg                     | Accuracy Class II |
| 30 g                     | 0.027 mg                     | Accuracy Class II |
| 20 g                     | 0.017 mg                     | Accuracy Class II |
| 10 g                     | 0.008 mg                     | Accuracy Class II |
| 5 g                      | 0.0042 mg                    | Accuracy Class II |

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OKLAHOMA BUREAU OF STANDARDS

| CALIBRATION LABORATORIES | OKLAHOMA BUREAU OF STANDARDS | Accuracy Class     |
|--------------------------|------------------------------|--------------------|
| 3 g                      | 0.0031 mg                    | Accuracy Class II  |
| 2 g                      | 0.0027 mg                    | Accuracy Class II  |
| 1 g                      | 0.0018 mg                    | Accuracy Class II  |
| 500 mg                   | 0.0017 mg                    | Accuracy Class II  |
| 300 mg                   | 0.0012 mg                    | Accuracy Class II  |
| 200 mg                   | 0.0009 mg                    | Accuracy Class II  |
| 100 mg                   | 0.0009 mg                    | Accuracy Class II  |
| 50 mg                    | 0.0005 mg                    | Accuracy Class II  |
| 30 mg                    | 0.0004 mg                    | Accuracy Class II  |
| 20 mg                    | 0.0004 mg                    | Accuracy Class II  |
| 10 mg                    | 0.0003 mg                    | Accuracy Class II  |
| 5 mg                     | 0.0003 mg                    | Accuracy Class II  |
| 3 mg                     | 0.0003 mg                    | Accuracy Class II  |
| 2 mg                     | 0.0003 mg                    | Accuracy Class II  |
| 1 mg                     | 0.0003 mg                    | Accuracy Class II  |
| 500 kg                   | 4.0 g                        | Accuracy Class III |
| 300 kg                   | 3.2 g                        | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

| CALIBRATION LABORATORIES | OKLAHOMA BUREAU OF STANDARDS | Accuracy           | Class |
|--------------------------|------------------------------|--------------------|-------|
| 200 kg                   | 2.1 g                        | Accuracy Class III |       |
| 100 kg                   | 1.8 g                        | Accuracy Class III |       |
| 50 kg                    | 1.6 g                        | Accuracy Class III |       |
| 30 kg                    | 1.89 mg                      | Accuracy Class III |       |
| 25 kg                    | 182 mg                       | Accuracy Class III |       |
| 20 kg                    | 175 mg                       | Accuracy Class III |       |
| 10 kg                    | 151 mg                       | Accuracy Class III |       |
| 5 kg                     | 18.0 mg                      | Accuracy Class III |       |
| 3 kg                     | 7.54 mg                      | Accuracy Class III |       |
| 2 kg                     | 6.84 mg                      | Accuracy Class III |       |
| 1 kg                     | 6.08 mg                      | Accuracy Class III |       |
| 500 g                    | 5.996 mg                     | Accuracy Class III |       |
| 300 g                    | 5.932 mg                     | Accuracy Class III |       |
| 200 g                    | 5.910 mg                     | Accuracy Class III |       |
| 100 g                    | 0.258 mg                     | Accuracy Class III |       |
| 50 g                     | 0.244 mg                     | Accuracy Class III |       |
| 30 g                     | 0.239 mg                     | Accuracy Class III |       |
| 20 g                     | 0.236 mg                     | Accuracy Class III |       |

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OKLAHOMA BUREAU OF STANDARDS

| CALIBRATION LABORATORIES | OKLAHOMA BUREAU OF STANDARDS | Accuracy           | Class |
|--------------------------|------------------------------|--------------------|-------|
| 10 g                     | 0.122 mg                     | Accuracy Class III |       |
| 5 g                      | 0.121 mg                     | Accuracy Class III |       |
| 3 g                      | 0.121 mg                     | Accuracy Class III |       |
| 2 g                      | 0.121 mg                     | Accuracy Class III |       |
| 1 g                      | 0.119 mg                     | Accuracy Class III |       |
| 500 mg                   | 0.022 mg                     | Accuracy Class III |       |
| 300 mg                   | 0.015 mg                     | Accuracy Class III |       |
| 200 mg                   | 0.013 mg                     | Accuracy Class III |       |
| 100 mg                   | 0.011 mg                     | Accuracy Class III |       |
| 50 mg                    | 0.010 mg                     | Accuracy Class III |       |
| 30 mg                    | 0.010 mg                     | Accuracy Class III |       |
| 20 mg                    | 0.010 mg                     | Accuracy Class III |       |
| 10 mg                    | 0.010 mg                     | Accuracy Class III |       |
| 5 mg                     | 0.010 mg                     | Accuracy Class III |       |
| 3 mg                     | 0.010 mg                     | Accuracy Class III |       |
| 2 mg                     | 0.010 mg                     | Accuracy Class III |       |
| 1 mg                     | 0.010 mg                     | Accuracy Class III |       |

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OKLAHOMA BUREAU OF STANDARDS

CALIBRATION LABORATORIES

| Range              | Best Uncertainty ( $\pm y_{95\%}$ ) | Remarks            |
|--------------------|-------------------------------------|--------------------|
| Mass A voidupoints |                                     |                    |
| 1000 lb            | 4.0 g                               | Accuracy Class III |
| 500 lb             | 3.2 g                               | Accuracy Class III |
| 250 lb             | 2.1 g                               | Accuracy Class III |
| 200 lb             | 1.8 g                               | Accuracy Class III |
| 100 lb             | 1.59 g                              | Accuracy Class III |
| 50 lb              | 0.178 g                             | Accuracy Class III |
| 25 lb              | 0.151 g                             | Accuracy Class III |
| 20 lb              | 0.150 g                             | Accuracy Class III |
| 12 lb              | 0.148 g                             | Accuracy Class III |
| 10 lb              | 11.31 mg                            | Accuracy Class III |
| 5 lb               | 6.90 mg                             | Accuracy Class III |
| 4 lb               | 6.59 mg                             | Accuracy Class III |
| 3 lb               | 6.36 mg                             | Accuracy Class III |
| 2 lb               | 6.06 mg                             | Accuracy Class III |
| 1 lb               | 5.95 mg                             | Accuracy Class III |
| 0.5 lb             | 5.91 mg                             | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

CALIBRATION LABORATORIES

|           |          |                    |
|-----------|----------|--------------------|
| 0.3 lb    | 0.269 mg | Accuracy Class III |
| 0.2 lb    | 0.251 mg | Accuracy Class III |
| 0.1 lb    | 0.239 mg | Accuracy Class III |
| 0.05 lb   | 0.236 mg | Accuracy Class III |
| 0.03 lb   | 0.235 mg | Accuracy Class III |
| 0.02 lb   | 0.123 mg | Accuracy Class III |
| 0.01 lb   | 0.123 mg | Accuracy Class III |
| 0.005 lb  | 0.152 mg | Accuracy Class III |
| 0.003 lb  | 0.134 mg | Accuracy Class III |
| 0.002 lb  | 0.128 mg | Accuracy Class III |
| 0.001 lb  | 0.124 mg | Accuracy Class III |
| 4 oz      | 0.260 mg | Accuracy Class III |
| 2 oz      | 0.242 mg | Accuracy Class III |
| 1 oz      | 0.237 mg | Accuracy Class III |
| 0.5 oz    | 0.235 mg | Accuracy Class III |
| 0.25 oz   | 0.123 mg | Accuracy Class III |
| 0.125 oz  | 0.123 mg | Accuracy Class III |
| 0.0625 oz | 0.123 mg | Accuracy Class III |

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**CALIBRATION LABORATORIES**

OKLAHOMA BUREAU OF STANDARDS

|             |          |                    |
|-------------|----------|--------------------|
| 0.03125 oz  | 0.123 mg | Accuracy Class III |
| 0.015625 oz | 0.123 mg | Accuracy Class III |

NVLAP Code: 20/M12  
Volume

NVLAP LAB CODE 200396-0

| Range   | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks                 |
|---------|-----------------------------------------|-------------------------|
| 5 gal   | 0.30 in <sup>3</sup>                    | Small Volume Volumetric |
| 10 gal  | 0.60 in <sup>3</sup>                    | Small Volume Volumetric |
| 20 gal  | 1.23 in <sup>3</sup>                    | Small Volume Volumetric |
| 25 gal  | 1.53 in <sup>3</sup>                    | Small Volume Volumetric |
| 30 gal  | 1.83 in <sup>3</sup>                    | Small Volume Volumetric |
| 50 gal  | 3.06 in <sup>3</sup>                    | Small Volume Volumetric |
| 100 gal | 6.1 in <sup>3</sup>                     | Small Volume Volumetric |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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**CALIBRATION LABORATORIES**

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

P.O. Box 47299  
Kings Bay, GA 31547  
Mr. Dave M. Catalano  
Phone: 912-673-2927 x1850 Fax: 912-673-3609

NVLAP LAB CODE 200403-0

**DIMENSIONAL**

NVLAP Code: 20/D03  
Gage Blocks - Steel and Chrome Carbide

| Range in inches | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>nom 1,2</sup> | Remarks               |
|-----------------|---------------------------------------------------------------|-----------------------|
| 0.01 to 0.09375 | 4.6                                                           | Mechanical Comparison |
| 0.1 to 0.100025 | 3.9                                                           | Mechanical Comparison |
| 0.10005 to 1.0  | 3.6                                                           | Mechanical Comparison |
| 2.0 to 4.0      | 3.0 + 0.6 x 10 <sup>-4</sup> L                                | Mechanical Comparison |
| 5.0 to 20.0     | 8.8 + 0.2 x 10 <sup>-4</sup> L                                | Mechanical Comparison |

Gage Blocks - Ceramic and Tungsten Carbide

|                 |     |                       |
|-----------------|-----|-----------------------|
| 0.01 to 0.09375 | 5.6 | Mechanical Comparison |
| 0.1 to 0.100025 | 4.9 | Mechanical Comparison |

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## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |                                                                                     | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA       |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Scope of Accreditation</b>                                                                                                                                                                |                                                                                     |                                                                                                                                                 |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                                                              |                                                                                     |                                                                                                                                                 |  |
| Revised 11/14/2000                                                                                                                                                                           |                                                                                     | Page 2 of 11                                                                                                                                    |  |
| CALIBRATION LABORATORIES                                                                                                                                                                     |                                                                                     | NVLAP LAB CODE 200403-0                                                                                                                         |  |
| SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN                                                                                                                                   |                                                                                     |                                                                                                                                                 |  |
| 0.10005 to 1.0                                                                                                                                                                               | 4.6                                                                                 | Mechanical Comparison                                                                                                                           |  |
| 2.0 to 4.0                                                                                                                                                                                   | 4.0 + 0.6 x 10 <sup>-6</sup> L                                                      | Mechanical Comparison                                                                                                                           |  |
| <b>NVLAP Code: 20/D07</b><br>Measuring Wires                                                                                                                                                 |                                                                                     |                                                                                                                                                 |  |
| <b>Range in inches</b>                                                                                                                                                                       | <b>Best Uncertainty (<math>\pm</math>) in <math>\mu</math> inches<sup>95%</sup></b> | <b>Remarks</b>                                                                                                                                  |  |
| 0.007227 (80 TPI) to 0.14434 (4 TPI)                                                                                                                                                         | 13                                                                                  | Universal Measuring Machine                                                                                                                     |  |
| <b>NVLAP Code: 20/D11</b><br>Spherical Diameter, Plug/Ring Gages                                                                                                                             |                                                                                     |                                                                                                                                                 |  |
| <b>Range in inches</b>                                                                                                                                                                       | <b>Best Uncertainty (<math>\pm</math>) in <math>\mu</math> inches<sup>95%</sup></b> | <b>Remarks</b>                                                                                                                                  |  |
| Ring Gages                                                                                                                                                                                   |                                                                                     |                                                                                                                                                 |  |
| 0.25 to 4.99                                                                                                                                                                                 | 5.6 + 0.5 x 10 <sup>-6</sup> L                                                      | Comparison to Gage Blocks                                                                                                                       |  |
| 5.0 to 12.0                                                                                                                                                                                  | 8.8 + 0.6 x 10 <sup>-6</sup> L                                                      | Comparison to Gage Blocks                                                                                                                       |  |
| March 31, 2001                                                                                                                                                                               |                                                                                     | <br>For the National Institute of Standards and Technology |  |
| Effective through                                                                                                                                                                            |                                                                                     | NVLAP-02S (11-95)                                                                                                                               |  |

NVLAP 2001 DIRECTORY

(See 'How To Use This Directory' on page 7.)

| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |                                | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA       |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Scope of Accreditation</b>                                                                                                                                                              |                                |                                                                                                                                               |                               |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                                                            |                                |                                                                                                                                               |                               |
| Revised 11/14/2000                                                                                                                                                                         |                                | Page 3 of 11                                                                                                                                  |                               |
| CALIBRATION LABORATORIES                                                                                                                                                                   |                                | NVLAP LAB CODE 200403-0                                                                                                                       |                               |
| SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN                                                                                                                                 |                                |                                                                                                                                               |                               |
| Plug Gages                                                                                                                                                                                 | 6.0 + 0.6 x 10 <sup>-6</sup> L | Comparison to Gage Blocks                                                                                                                     |                               |
| > 0 to 4.99                                                                                                                                                                                | 8.8 + 0.6 x 10 <sup>-6</sup> L | Comparison to Gage Blocks                                                                                                                     |                               |
| 5.0 to 12.0                                                                                                                                                                                |                                |                                                                                                                                               |                               |
| <b>NVLAP Code: 20/D14</b><br>Threaded Plug and Ring Gages                                                                                                                                  |                                |                                                                                                                                               |                               |
| Threaded Plug Gages, 60° Unified                                                                                                                                                           | <b>Range</b>                   | <b>Best Uncertainty (<math>\pm</math>) <math>\mu</math>in<sup>95%</sup></b>                                                                   | <b>Remarks</b>                |
| Pitch Diameter                                                                                                                                                                             | > 0 to 6.0 in                  | (61 + 0.7 x 10 <sup>-6</sup> L) $\mu$ in                                                                                                      | Three Wire Method             |
| Major Diameter                                                                                                                                                                             | 1.0 to 6.0 in                  | (35 + 1.1 x 10 <sup>-6</sup> L) $\mu$ in                                                                                                      | Universal Measuring Machine   |
| Half Angle                                                                                                                                                                                 | 60°                            | 3 arc minutes                                                                                                                                 | Optical Comparator Inspection |
| Pitch                                                                                                                                                                                      | 4 to 80 TPI                    | 28 $\mu$ in                                                                                                                                   | Universal Measuring Machine   |
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CALIBRATION LABORATORIES

NVLAP LAB CODE 200403-0

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

Threaded Ring Gages, Solid, 60° Unified

|                | Range             | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Remarks                              |
|----------------|-------------------|----------------------------------------------|--------------------------------------|
| Pitch Diameter | > 0 to 3.1 in     | 55 $\mu$ in                                  | Universal Measuring Machine          |
| Minor Diameter | > 0 to 0.272 in   | 55 $\mu$ in                                  | Compared to Go/NoGo Plugs            |
| Minor Diameter | 0.273 to 0.499 in | 150 $\mu$ in                                 | Measured with Bore Micrometers       |
| Minor Diameter | 0.5 to 3.999 in   | 250 $\mu$ in                                 | Measured with Bore Micrometers       |
| Minor Diameter | 4.0 to 8.0 in     | 600 $\mu$ in                                 | Measured with Bore Micrometers       |
| Half Angle     | 60°               | 4 arc minutes                                | Optical Inspection of Thread Casting |

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200403-0

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

Threaded Ring Gages, Split, 60° Unified

|                     | Range                    | Best Uncertainty ( $\pm$ ) <sup>year 1</sup> | Remarks                           |
|---------------------|--------------------------|----------------------------------------------|-----------------------------------|
| Functional Diameter | > 0 to 6 in, 4 to 80 TPI | 83 $\mu$ in                                  | Fit Test with Class W Thread Plug |
| Minor Diameter      | > 0 to 0.272 in          | 55 $\mu$ in                                  | Compared to Go/NoGo Plugs         |
| Minor Diameter      | 0.273 to 0.499 in        | 150 $\mu$ in                                 | Measured with Bore Micrometers    |
| Minor Diameter      | 0.5 to 3.999 in          | 250 $\mu$ in                                 | Measured with Bore Micrometers    |
| Minor Diameter      | 4.0 to 8.0 in            | 600 $\mu$ in                                 | Measured with Bore Micrometers    |

March 31, 2001

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For the National Institute of Standards and Technology

NVLAP-025 (11-95)



## NVLAP 2001 DIRECTORY

(See 'How To Use This Directory' on page 7.)

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The NVLAP logo features the word "NVLAP" in large, bold, sans-serif capital letters. A registered trademark symbol (®) is located at the top right of the letter "P". To the left of the main text, there is a stylized graphic element consisting of three curved lines that sweep upwards from left to right, resembling a signal or a stylized wave.

National Voluntary  
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ISO/IEC GUIDE 25:1990  
ANSI/NCSL Z540-1-1994  
ISO 9002:1987

## Scope of Accreditation

The seal of the United States Department of Commerce. It features an eagle with wings spread, perched atop a shield. The shield contains various symbols representing commerce, including a ship and a plow. Above the eagle are the words "DEPARTMENT OF COMMERCE" and below it are the words "UNITED STATES OF AMERICA".

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200403-0

#### SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

##### *NVLAP Code:* 20/E05

DC Resistance

| <i>Range in ohms</i> | <i>Best Uncertainty (<math>\pm</math>) in ppm<sup>max</sup></i> | <i>Remarks</i>         |
|----------------------|-----------------------------------------------------------------|------------------------|
| 1.0                  | 2                                                               | Using Guideline Bridge |
| 10.0                 | 2                                                               | Using Guideline Bridge |
| 100.0                | 2                                                               | Using Guideline Bridge |
| 1000.0               | 2                                                               | Using Guideline Bridge |
| 10000.0              | 2                                                               | Using Guideline Bridge |
| 100000.0             | 2                                                               | Using Guideline Bridge |
| 0.01                 | 0.2 (in %)                                                      | Using 242D System      |
| 0.1                  | 200                                                             | Using 242D System      |
| 1.0                  | 20                                                              | Using 242D System      |
| 10.0                 | 10                                                              | Using 242D System      |

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**Scope of Accreditation**

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CALIBRATION LABORATORIES

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

NVLAP LAB CODE 200403-0

| Range (±) | Best Uncertainty (±) in ppm <sup>max. 1</sup> | Remarks           |
|-----------|-----------------------------------------------|-------------------|
| 100.0     | 10                                            | Using 242D System |
| 1000.0    | 10                                            | Using 242D System |
| 10000.0   | 10                                            | Using 242D System |
| 100000.0  | 10                                            | Using 242D System |
| 1.0 M     | 10                                            | Using 242D System |
| 10.0 M    | 10                                            | Using 242D System |
| 100.0 M   | 15                                            | Using 242D System |

NVLAP Code: 20/E06  
DC Voltage - Generation

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**Scope of Accreditation**

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CALIBRATION LABORATORIES

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

NVLAP LAB CODE 200403-0

| Range (±) | Best Uncertainty (±) in ppm <sup>max. 1</sup> | Remarks |
|-----------|-----------------------------------------------|---------|
| 200.0 V   | 2.0                                           |         |
| 1000.0 V  | 2.0                                           |         |

DC Voltage - Measurement

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200403-0

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

NVLAP Code: 20/E09  
LF AC Voltage

*Best Uncertainty ( $\pm$ ) in  $\mu\text{ppm}^{100\text{Hz}}$   
Frequency in Hertz*

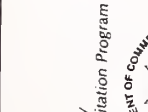
| Range  | 10  | 20  | 40  | 50  | 300 | 1 k | 20 k | 50 k | 100 k | 300 k | 500 k | 1 M |
|--------|-----|-----|-----|-----|-----|-----|------|------|-------|-------|-------|-----|
| 20 mV  | 110 | 100 | 100 | 100 | 100 | 100 | 100  | 200  | 310   | 410   | 580   | 580 |
| 200 mV | 50  | 50  | 30  | 30  | 30  | 30  | 30   | 50   | 90    | 150   | 150   | 240 |
| 2 V    | 100 | 40  | 30  | 20  | 20  | 20  | 20   | 40   | 50    | 120   | 120   | 120 |
| 20 V   | 40  | 40  | 30  | 20  | 20  | 20  | 20   | 40   | 50    | 120   | 130   | 130 |
| 200 V  | 40  | 45  | 25  | 25  | 25  | 25  | 25   | 50   | 60    |       |       |     |
| 300 V  |     |     |     |     |     |     | 40   |      |       |       |       |     |
| 600 V  |     |     |     |     |     |     |      |      |       | 60    | 80    |     |
| 1000 V |     |     | 35  | 35  | 30  | 30  | 40   | 40   |       |       |       |     |

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## Scope of Accreditation

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CALIBRATION LABORATORIES

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

NVLAP LAB CODE 200403-0

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| TIME AND FREQUENCY                            | Best Uncertainty ( $\pm$ ) in $\text{Hz}_{\text{true}}$ | Remarks               |
|-----------------------------------------------|---------------------------------------------------------|-----------------------|
| NVLAP Code: 20/F01<br>Frequency Dissemination | $5.0 \times 10^{12}$                                    | Comparison using FMAS |
| <b>Range</b><br>1 MHz, 5 MHz, 10 MHz          |                                                         |                       |
| NVLAP Code: 20/F02<br>Time Dissemination      |                                                         |                       |
| <b>Range</b><br>n/a                           |                                                         |                       |
|                                               | Best Uncertainty ( $\pm$ ) in $\text{Hz}_{\text{true}}$ | Remarks               |
|                                               | 1 $\mu$ second                                          | UTC(USNO) Transfer    |

---

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

2. L is length or diameter in inches.

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|                                                                                                                                                                                                                                   |                                                                |                                                                                                                                                |  |
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| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL Z540-1-1994<br/>ISO 9002:1987</p>                                                                                                                                                          |                                                                |                                                                                                                                                |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                                                              |                                                                |                                                                                                                                                |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                                                   |                                                                | <p>NVLAP LAB CODE 200405-0</p>                                                                                                                 |  |
| <p>DWIGHT D.I.C., INC.<br/>10 Stuyvesant Avenue, P.O. Box 909<br/>Lyndhurst, NJ 07071-0909<br/>Mr. Daniel Manning<br/>Phone: 1-800-635-2910 Fax: 201-438-0594<br/>E-Mail: dwight@comcat.com<br/>URL: http://www.dwightdic.com</p> |                                                                |                                                                                                                                                |  |
| <p>Page 1 of 3</p>                                                                                                                                                                                                                |                                                                |                                                                                                                                                |  |
| <p><b>DIMENSIONAL</b></p>                                                                                                                                                                                                         |                                                                |                                                                                                                                                |  |
| <p>NVLAP Code: 20/D03<br/>Gage Blocks - Steel only</p>                                                                                                                                                                            |                                                                |                                                                                                                                                |  |
| Range                                                                                                                                                                                                                             | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>asme 1,2</sup> | Remarks                                                                                                                                        |  |
| >0 to 20 in                                                                                                                                                                                                                       | (3.5 + 2L)                                                     | Comparison                                                                                                                                     |  |
| <p>NVLAP Code: 20/D05<br/>Length</p>                                                                                                                                                                                              |                                                                |                                                                                                                                                |  |
| <p>Micrometers - in lab and field service</p>                                                                                                                                                                                     |                                                                |                                                                                                                                                |  |
| Range                                                                                                                                                                                                                             | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>asme 1,2</sup> | Remarks                                                                                                                                        |  |
| >0 to 24 in                                                                                                                                                                                                                       | (100 + 2L)                                                     |                                                                                                                                                |  |
| <p>Dial Indicators - in lab and field service</p>                                                                                                                                                                                 |                                                                |                                                                                                                                                |  |
| >0 to 2 in                                                                                                                                                                                                                        | 50                                                             |                                                                                                                                                |  |
| <p>Calipers - in lab and field service</p>                                                                                                                                                                                        |                                                                |                                                                                                                                                |  |
| >0 to 36 in                                                                                                                                                                                                                       | (1000 + 20L)                                                   |                                                                                                                                                |  |
| <p>September 30, 2001</p>                                                                                                                                                                                                         |                                                                | <p>David T. Alderman</p>                                                                                                                       |  |
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| <p>NVLAP-025 (11-95)</p>                                                                                                                                                                                                          |                                                                |                                                                                                                                                |  |

|                                                                                                                                                                                                 |                                                                |                                                                                                                                              |  |
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| <p>ISO/IEC GUIDE 25:1990<br/>ANSI/NCSL Z540-1-1994<br/>ISO 9002:1987</p>                                                                                                                        |                                                                |                                                                                                                                              |  |
| <p><b>Scope of Accreditation</b></p>                                                                                                                                                            |                                                                |                                                                                                                                              |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                 |                                                                | <p>NVLAP LAB CODE 200405-0</p>                                                                                                               |  |
| <p>DWIGHT D.I.C., INC.</p>                                                                                                                                                                      |                                                                |                                                                                                                                              |  |
| <p>Page 2 of 3</p>                                                                                                                                                                              |                                                                |                                                                                                                                              |  |
| <p>NVLAP Code: 20/D07<br/>Thread Measuring Wires</p>                                                                                                                                            |                                                                |                                                                                                                                              |  |
| Range                                                                                                                                                                                           | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>asme 1,2</sup> | Remarks                                                                                                                                      |  |
| Up to 80 pitch                                                                                                                                                                                  | 20                                                             | Light Wave Micrometer                                                                                                                        |  |
| <p>NVLAP Code: 20/D11<br/>Spherical Diameter - Plain Rings</p>                                                                                                                                  |                                                                |                                                                                                                                              |  |
| Range                                                                                                                                                                                           | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>asme 1,2</sup> | Remarks                                                                                                                                      |  |
| >0 to 8 in                                                                                                                                                                                      | (50 + 5L)                                                      |                                                                                                                                              |  |
| <p>NVLAP Code: 20/D12<br/>Granite Surface Plates - in lab and field service</p>                                                                                                                 |                                                                |                                                                                                                                              |  |
| Range                                                                                                                                                                                           | Best Uncertainty ( $\pm$ ) in $\mu$ inches <sup>asme 1,2</sup> | Remarks                                                                                                                                      |  |
| Up to 12 ft                                                                                                                                                                                     | 50 per ft                                                      | Moody Method                                                                                                                                 |  |
| <p>September 30, 2001</p>                                                                                                                                                                       |                                                                | <p>David T. Alderman</p>                                                                                                                     |  |
| <p>Effective through</p>                                                                                                                                                                        |                                                                | <p>For the National Institute of Standards and Technology</p>                                                                                |  |
| <p>NVLAP-025 (11-95)</p>                                                                                                                                                                        |                                                                |                                                                                                                                              |  |





|                                                                                                                                                                                                   |      |                                                                                                                                                |  |
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| <p>Scope of Accreditation</p>                                                                                                                                                                     |      | <p>Page 2 of 12</p>                                                                                                                            |  |
| <p>Revised 11/13/2000</p>                                                                                                                                                                         |      | <p>NVLAP LAB CODE 200406-0</p>                                                                                                                 |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                   |      | <p>STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN</p>                                                                       |  |
| 5.0                                                                                                                                                                                               | 9.7  | Mechanical Comparison                                                                                                                          |  |
| 6.0                                                                                                                                                                                               | 10.0 | Mechanical Comparison                                                                                                                          |  |
| 7.0                                                                                                                                                                                               | 10.3 | Mechanical Comparison                                                                                                                          |  |
| 8.0                                                                                                                                                                                               | 10.6 | Mechanical Comparison                                                                                                                          |  |
| 10.0                                                                                                                                                                                              | 11.3 | Mechanical Comparison                                                                                                                          |  |
| 12.0                                                                                                                                                                                              | 12.1 | Mechanical Comparison                                                                                                                          |  |
| 16.0                                                                                                                                                                                              | 14.0 | Mechanical Comparison                                                                                                                          |  |
| 20.0                                                                                                                                                                                              | 16.1 | Mechanical Comparison                                                                                                                          |  |
| <p>Gage Blocks - Ceramic and Tungsten Carbide</p>                                                                                                                                                 |      |                                                                                                                                                |  |
| 0.01 to 0.09375 (except 0.05)                                                                                                                                                                     | 4.7  | Mechanical Comparison                                                                                                                          |  |
| 0.05                                                                                                                                                                                              | 5.4  | Mechanical Comparison                                                                                                                          |  |
| 0.1 to 0.95 (except 0.35 and 0.85)                                                                                                                                                                | 4.0  | Mechanical Comparison                                                                                                                          |  |
| 0.35                                                                                                                                                                                              | 4.2  | Mechanical Comparison                                                                                                                          |  |
| 0.85                                                                                                                                                                                              | 4.3  | Mechanical Comparison                                                                                                                          |  |
| 1.0                                                                                                                                                                                               | 4.3  | Mechanical Comparison                                                                                                                          |  |
| <p>March 31, 2001</p>                                                                                                                                                                             |      | <p>David F. Alderman</p>                                                                                                                       |  |
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| <p>NVLAP-02S (11-95)</p>                                                                                                                                                                          |      |                                                                                                                                                |  |

|                                                                                                                                                                                                 |     |                                                                                                                                              |  |
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| <p>Scope of Accreditation</p>                                                                                                                                                                   |     | <p>Page 3 of 12</p>                                                                                                                          |  |
| <p>Revised 11/13/2000</p>                                                                                                                                                                       |     | <p>NVLAP LAB CODE 200406-0</p>                                                                                                               |  |
| <p>CALIBRATION LABORATORIES</p>                                                                                                                                                                 |     | <p>STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN</p>                                                                     |  |
| 2.0                                                                                                                                                                                             | 5.2 | Mechanical Comparison                                                                                                                        |  |
| 3.0                                                                                                                                                                                             | 6.5 | Mechanical Comparison                                                                                                                        |  |
| 4.0                                                                                                                                                                                             | 8.4 | Mechanical Comparison                                                                                                                        |  |
| <p>NVLAP Code: 20/D11<br/>Spherical Diameter, Plug Ring Gages</p>                                                                                                                               |     |                                                                                                                                              |  |
| <p>Range in inches</p>                                                                                                                                                                          |     | <p>Best Uncertainty (<math>\pm</math>) in <math>\mu</math> inches<sup>new 1</sup></p>                                                        |  |
| Ring Gages                                                                                                                                                                                      |     | Remarks                                                                                                                                      |  |
| > 0 to 8.0                                                                                                                                                                                      | 20  | Comparison to Gage Blocks                                                                                                                    |  |
| Plug Gages                                                                                                                                                                                      |     |                                                                                                                                              |  |
| > 0 to 3.0                                                                                                                                                                                      | 40  | Comparison to Gage Blocks                                                                                                                    |  |
| <p>March 31, 2001</p>                                                                                                                                                                           |     | <p>David F. Alderman</p>                                                                                                                     |  |
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| <p>NVLAP-02S (11-95)</p>                                                                                                                                                                        |     |                                                                                                                                              |  |

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## Scope of Accreditation

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CALIBRATION LABORATORIES

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

NVLAP Code: 20/D14

Threaded Plug and Ring Gages

Threaded Plug Gages, 60°

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|                          | <i>Range</i>  | <i>Best Uncertainty (<math>\pm y_{95\%}</math>)</i> | <i>Remarks</i>                |
|--------------------------|---------------|-----------------------------------------------------|-------------------------------|
| Pitch Diameter           | > 0 to 6.0 in | 90 $\mu$ in                                         | Three Wire Method             |
| Major Diameter           | > 0 to 6.0 in | 40 $\mu$ in                                         | Universal Measuring Machine   |
| Half Angle               | 60°           | 3 arc minutes                                       | Optical Comparator Inspection |
| Pitch                    | 4 to 80 TPI   | 100 $\mu$ in                                        | Universal Measuring Machine   |
| Threaded Ring Gages, 60° |               |                                                     |                               |
| Minor Diameter           | > 0 to 6.0 in | 40 $\mu$ in                                         |                               |

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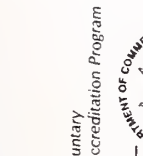
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# Scope of Accreditation



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CALIBRATION LABORATORIES

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NVLAP LAB CODE 200406-0

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

## ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E02  
AC Current

| Range                     | Best Uncertainty ( $\pm$ ) in ppm <sup>note 1</sup> | Frequency Range |
|---------------------------|-----------------------------------------------------|-----------------|
| 10 $\mu$ A to 220 $\mu$ A | 176 to 9100                                         | 10 Hz to 10 kHz |
| 220 $\mu$ A to 2.2 mA     | 148 to 4300                                         | 10 Hz to 10 kHz |
| 2.2 mA to 22 mA           | 148 to 3500                                         | 10 Hz to 10 kHz |
| 22 mA to 220 mA           | 144 to 1580                                         | 10 Hz to 10 kHz |
| 220 mA to 2.2 A           | 318 to 7800                                         | 20 Hz to 10 kHz |
| 2.2 A to 11 A(w/5725A)    | 417 to 3375                                         | 40 Hz to 10 kHz |

NVLAP Code: 20/E05  
DC Current

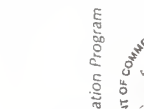
| Range                     | Best Uncertainty ( $\pm$ ) in ppm <sup>note 1</sup> | Remarks |
|---------------------------|-----------------------------------------------------|---------|
| 10 $\mu$ A to 220 $\mu$ A | 74 to 360                                           |         |
| 220 $\mu$ A to 2.2 mA     | 39 to 71                                            |         |
| 2.2 mA to 22 mA           | 37 to 58                                            |         |
| 22 mA to 220 mA           | 59 to 87                                            |         |

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220 mA to 2.2 A

125 to 183

2.2 A to 11 A(w/5725A)

388 to 558

NVLAB Code: 20/E05  
DC Resistance

Using Guideline Bridge

Range in ohms

Using Guideline Bridge

1.0

Using Guideline Bridge

10.0

Using Guideline Bridge

100.0

Using Guideline Bridge

1000.0

Using Guideline Bridge

10000.0

Using Guideline Bridge

100000.0

Using Guideline Bridge

Best Uncertainty ( $\pm$ ) in ppm<sup>one s</sup>

Using Guideline Bridge

Remarks

Using Guideline Bridge

1.0

Using Guideline Bridge

10.0

Using Guideline Bridge

100.0

Using Guideline Bridge

1000.0

Using Guideline Bridge

10000.0

Using Guideline Bridge

100000.0

Using Guideline Bridge

Best Uncertainty ( $\pm$ ) in ppm<sup>one s</sup>

Using Guideline Bridge

Remarks

Using Guideline Bridge

1.0

Using Guideline Bridge

10.0

Using Guideline Bridge

100.0

Using Guideline Bridge

1000.0

Using Guideline Bridge

10000.0

Using Guideline Bridge

100000.0

Using Guideline Bridge

Best Uncertainty ( $\pm$ ) in ppm<sup>one s</sup>

Using Guideline Bridge

Remarks

Using Guideline Bridge

1.0

Using Guideline Bridge

10.0

Using Guideline Bridge

100.0

Using Guideline Bridge

1000.0

Using Guideline Bridge

10000.0

Using Guideline Bridge

100000.0

Using Guideline Bridge

Best Uncertainty ( $\pm$ ) in ppm<sup>one s</sup>

Using Guideline Bridge

Remarks

Using Guideline Bridge

1.0

Using Guideline Bridge

10.0

Using Guideline Bridge

100.0

Using Guideline Bridge

1000.0

Using Guideline Bridge

10000.0

Using Guideline Bridge

100000.0

Using Guideline Bridge

Best Uncertainty ( $\pm$ ) in ppm<sup>one s</sup>

Using Guideline Bridge

Remarks

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**CALIBRATION LABORATORIES**

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**STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN**

**NVLAP Code:** 20/E06  
**DC Voltage**

| Range (±) | Best Uncertainty (±) in ppm <sup>one s</sup> | Remarks                         |
|-----------|----------------------------------------------|---------------------------------|
| 0.1 V     | 8.1                                          | Compared to 10 V Reference Cell |
| 1.0 V     | 1.3                                          | Compared to 10 V Reference Cell |
| 10.0 V    | 1.0                                          | Compared to 10 V Reference Cell |
| 100.0 V   | 1.0                                          | Compared to 10 V Reference Cell |
| 1000.0 V  | 1.1                                          | Compared to 10 V Reference Cell |

**NVLAP Code:** 20/E09  
**LF AC Voltage**

**Range**

**Best Uncertainty (±) in ppm<sup>one s</sup>**

**Frequency Range**

|                           |              |                 |
|---------------------------|--------------|-----------------|
| 1 mV to 220 mV            | 126 to 28000 | 10 Hz to 1 Mhz  |
| 220 mV to 2.2 V           | 52 to 4409   | 10 Hz to 1 Mhz  |
| 2.2 V to 22 V             | 50 to 3200   | 10 Hz to 1 Mhz  |
| 22 V to 220 V             | 63 to 13348  | 10 Hz to 1 Mhz  |
| 220 V to 250 V            | 400 to 410   | 15 Hz to 50 Hz  |
| 220 V to 1100 V           | 79 to 100    | 50 Hz to 1 KHz  |
| 220 V to 1100 V (w/5725A) | 85 to 1360   | 40 Hz to 30 KHz |

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200406-0

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

**MECHANICAL**

NVLAP Code: 20/M06  
Force - Torque

| Range                   | Best Uncertainty ( $\pm$ ) <sup>95%</sup>                                          | Remarks |
|-------------------------|------------------------------------------------------------------------------------|---------|
| 2.0 lb-in to 20 lb-in   | 0.1% of Full Scale (FS) or<br>0.2% of Indicated Value (IV)<br>whichever is greater |         |
| 10 lb-in to 100 lb-in   | 0.1% of Full Scale (FS) or<br>0.2% of Indicated Value (IV)<br>whichever is greater |         |
| 10 lb-ft to 100 lb-ft   | 0.1% of Full Scale (FS) or<br>0.2% of Indicated Value (IV)<br>whichever is greater |         |
| 100 lb-ft to 1000 lb-ft | 0.1% of Full Scale (FS) or<br>0.2% of Indicated Value (IV)<br>whichever is greater |         |

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

**MASS**

NVLAP Code: 20/M08

| Range | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks           |
|-------|-------------------------------------------|-------------------|
| 20 kg | 28.95                                     | Accuracy Class II |
| 10 kg | 5.80                                      | Accuracy Class II |
| 5 kg  | 4.10                                      | Accuracy Class II |
| 3 kg  | 4.10                                      | Accuracy Class II |
| 2 kg  | 4.10                                      | Accuracy Class II |
| 1 kg  | 0.47                                      | Accuracy Class II |
| 500 g | 0.46                                      | Accuracy Class II |
| 300 g | 0.45                                      | Accuracy Class II |
| 200 g | 0.45                                      | Accuracy Class II |
| 100 g | 0.120                                     | Accuracy Class II |
| 50 g  | 0.088                                     | Accuracy Class II |
| 30 g  | 0.087                                     | Accuracy Class II |
| 20 g  | 0.086                                     | Accuracy Class II |
| 10 g  | 0.022                                     | Accuracy Class II |

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The NVLAP logo consists of the letters "NVLAP" in a large, bold, sans-serif font. A registered trademark symbol (®) is located at the top right of the letter "P".

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The seal of the United States Department of Commerce. It features an eagle with wings spread, perched atop a shield. Above the eagle are the words "DEPARTMENT OF COMMERCE" and below it are the words "UNITED STATES OF AMERICA".

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200406-0

#### STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

|        |        |                   |
|--------|--------|-------------------|
| 5 g    | 0.0121 | Accuracy Class II |
| 3 g    | 0.0117 | Accuracy Class II |
| 2 g    | 0.0115 | Accuracy Class II |
| 1 g    | 0.0048 | Accuracy Class II |
| 500 mg | 0.0045 | Accuracy Class II |
| 300 mg | 0.0047 | Accuracy Class II |
| 200 mg | 0.0046 | Accuracy Class II |
| 100 mg | 0.0043 | Accuracy Class II |
| 50 mg  | 0.0046 | Accuracy Class II |
| 30 mg  | 0.0044 | Accuracy Class II |
| 20 mg  | 0.0043 | Accuracy Class II |
| 10 mg  | 0.0040 | Accuracy Class II |
| 5 mg   | 0.0040 | Accuracy Class II |
| 3 mg   | 0.0041 | Accuracy Class II |
| 2 mg   | 0.0041 | Accuracy Class II |
| 1 mg   | 0.0040 | Accuracy Class II |

I. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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**CALIBRATION LABORATORIES**      NVLAP LAB CODE 200408-0

MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

|        |           |             |
|--------|-----------|-------------|
| 1 kg   | 0.21 mg   | Echelon III |
| 500 g  | 0.18 mg   | Echelon III |
| 300 g  | 0.18 mg   | Echelon III |
| 200 g  | 0.18 mg   | Echelon III |
| 100 g  | 0.060 mg  | Echelon III |
| 50 g   | 0.032 mg  | Echelon III |
| 30 g   | 0.025 mg  | Echelon III |
| 20 g   | 0.020 mg  | Echelon III |
| 10 g   | 0.021 mg  | Echelon III |
| 5 g    | 0.0054 mg | Echelon III |
| 3 g    | 0.0037 mg | Echelon III |
| 2 g    | 0.0045 mg | Echelon III |
| 1 g    | 0.0037 mg | Echelon III |
| 500 mg | 0.0027 mg | Echelon III |
| 300 mg | 0.0026 mg | Echelon III |
| 200 mg | 0.0028 mg | Echelon III |
| 100 mg | 0.0020 mg | Echelon III |

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**CALIBRATION LABORATORIES**      NVLAP LAB CODE 200408-0

MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

|                    |           |             |
|--------------------|-----------|-------------|
| 50 mg              | 0.0020 mg | Echelon III |
| 30 mg              | 0.0020 mg | Echelon III |
| 20 mg              | 0.0020 mg | Echelon III |
| 10 mg              | 0.0020 mg | Echelon III |
| 5 mg               | 0.0020 mg | Echelon III |
| 3 mg               | 0.0020 mg | Echelon III |
| 2 mg               | 0.0020 mg | Echelon III |
| 1 mg               | 0.0020 mg | Echelon III |
| 1000 lb            | 3100.0 mg | Echelon III |
| 500 lb             | 2500.0 mg | Echelon III |
| 100 lb             | 220.0 mg  | Echelon III |
| 50 lb              | 170.0 mg  | Echelon III |
| 25 lb to 20 lb     | 74.0 mg   | Echelon III |
| 10 lb to 3 lb      | 7.6 mg    | Echelon III |
| 2 lb to 0.3 lb     | 2.6 mg    | Echelon III |
| 0.2 lb to 0.001 lb | 0.22 mg   | Echelon III |
| 0.02 lb to 0.03 lb | 0.047 mg  | Echelon III |

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MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

| Range                 | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks            |
|-----------------------|-------------------------------------------|--------------------|
| 0.02 lb               | 0.028 mg                                  | Echelon III        |
| 0.01 lb to 0.002 lb   | 0.035 mg                                  | Echelon III        |
| 0.001 lb to 0.0001 lb | 0.025 mg                                  | Echelon III        |
| NVLAP Code: 20/M12    |                                           |                    |
| Density               |                                           |                    |
| 1500 gallon           | 40.0 in <sup>3</sup>                      | Volume Transfer    |
| 1000 gallon           | 67.0 in <sup>3</sup>                      | Volume Transfer    |
| 750 gallon            | 25.0 in <sup>3</sup>                      | Volume Transfer    |
| 500 gallon            | 13.0 in <sup>3</sup>                      | Volume Transfer    |
| 100 gallon            | 2.8 in <sup>3</sup>                       | Volume Transfer    |
| 50 gallon             | 2.8 in <sup>3</sup>                       | Volume Transfer    |
| 25 gallon             | 2.8 in <sup>3</sup>                       | Volume Transfer    |
| 5 gallon              | 0.43 in <sup>3</sup>                      | Volume Transfer    |
| 100 gallon            | 1.84 in <sup>3</sup>                      | Volume Gravimetric |
| 25 gallon             | 0.46 in <sup>3</sup>                      | Volume Gravimetric |
| 5 gallon              | 0.17 in <sup>3</sup>                      | Volume Gravimetric |

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| Range              | Best Uncertainty ( $\pm$ ) <sup>95%</sup> | Remarks             |
|--------------------|-------------------------------------------|---------------------|
| 1 gallon           | 0.068 in <sup>3</sup>                     | Volume Gravimetric  |
| 1/2 gallon         | 0.024 in <sup>3</sup>                     | Volume Gravimetric  |
| 1 quart            | 0.016 in <sup>3</sup>                     | Volume Gravimetric  |
| 1 pint             | 0.014 in <sup>3</sup>                     | Volume Gravimetric  |
| 1 liter            | 0.039 in <sup>3</sup>                     | Volume Gravimetric  |
| 50 milliliter      | 0.054 in <sup>3</sup>                     | Volume Gravimetric  |
| 120 minim          | 0.051 in <sup>3</sup>                     | Volume Gravimetric  |
| NVLAP Code: 20/M06 |                                           |                     |
| Force              |                                           |                     |
| Range              |                                           |                     |
| < = 20,000 lb      | 40.0 lb                                   | Wheel Load Weighers |

1. Represents an expanded uncertainty using a coverage factor, k = 2.

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ELECTRONIC AUTOMATION INC.

2.5 to 11 A    0.048 % + 1552  $\mu$ A

65 to 500    0.078 % + 1552  $\mu$ A

500 to 1 k    0.256 % + 1552  $\mu$ A

---

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E05  
DC Current

Best Uncertainty ( $\pm$ )<sup>95% 1</sup>

0 to 3.29999 mA    0.0102 % + 0.04  $\mu$ A

0 to 32.9999 mA    0.0078 % + 194  $\mu$ A

0 to 329.999 mA    0.0078 % + 2.6  $\mu$ A

0 to 2.19999 A    0.024 % + 36  $\mu$ A

0 to 11 A    0.048 % + 256  $\mu$ A

Best Uncertainty ( $\pm$ )<sup>95% 1</sup>

0.0094 % + 0.006 ohms

0.0094 % + 0.008 ohms

0.007 % + 0.008 ohms

0.007 % + 0.008 ohms

---

NVLAP Code: 20/E05  
DC Resistance

Range in ohms

0 to 10.99    11 to 32.999    33 to 109.999    110 to 329.999

Best Uncertainty ( $\pm$ )<sup>95% 1</sup>

0.0094 % + 0.006 ohms

0.0094 % + 0.008 ohms

0.007 % + 0.008 ohms

0.007 % + 0.008 ohms

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ELECTRONIC AUTOMATION INC.

|                      |                      |  |
|----------------------|----------------------|--|
| 0.330 k to 1.09999 k | 0.007 % + 0.048 ohms |  |
| 1.1 k to 3.29999 k   | 0.007 % + 0.048 ohms |  |
| 3.3 k to 10.9999 k   | 0.007 % + 0.48 ohms  |  |
| 11 k to 32.9999 k    | 0.007 % + 0.48 ohms  |  |
| 33 k to 109.999 k    | 0.0086 % + 4.8 ohms  |  |
| 110 k to 329.999 k   | 0.0094 % + 4.8 ohms  |  |
| 0.33 M to 1.09999 M  | 0.0118 % + 44 ohms   |  |
| 1.1 M to 3.29999 M   | 0.0118 % + 44 ohms   |  |
| 3.3 M to 10.9999 M   | 0.048 % + 428 ohms   |  |
| 11 M to 32.9999 M    | 0.078 % + 428 ohms   |  |
| 33 M to 109.999 M    | 0.388 % + 4264 ohms  |  |
| 110 M to 330 M       | 0.388 % + 12792 ohms |  |

NVLAP Code: 20/E06  
DC Voltage

**Best Uncertainty ( $\pm y_{new}$ )**

|                  |                        |  |
|------------------|------------------------|--|
| Range            |                        |  |
| 0 to 329.9999 mV | 0.0048 % + 2.4 $\mu$ V |  |
| 0 to 3.299999 V  | 0.004 % + 4 $\mu$ V    |  |

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|                   |                         |  |
|-------------------|-------------------------|--|
| 0 to 32.99999 V   | 0.004 % + 40 $\mu$ V    |  |
| 30 to 329.9999 V  | 0.0044 % + 388 $\mu$ V  |  |
| 100 to 1000.000 V | 0.0044 % + 1164 $\mu$ V |  |

NVLAP Code: 20/E09  
LF AC Voltage

**Best Uncertainty ( $\pm y_{new}$ )**

*Frequency in Hertz*

| Range            | 10 to 45               | 45 to 10 k            | 10 k to 20 k           | 20 k to 50 k           | 50 k to 100 k           | 100 k to 500 k         |
|------------------|------------------------|-----------------------|------------------------|------------------------|-------------------------|------------------------|
| 1.0 to 32.999 mV | 0.274 % + 16 $\mu$ V   | 0.118 % + 16 $\mu$ V  | 0.156 % + 16 $\mu$ V   | 0.194 % + 16 $\mu$ V   | 0.274 % + 26 $\mu$ V    | 0.776 % + 48 $\mu$ V   |
| 33 to 329.999 mV | 0.194 % + 40 $\mu$ V   | 0.040 % + 16 $\mu$ V  | 0.078 % + 16 $\mu$ V   | 0.126 % + 32 $\mu$ V   | 0.188 % + 132 $\mu$ V   | 0.544 % + 256 $\mu$ V  |
| 33 to 329.999 V  | 0.118 % + 194 $\mu$ V  | 0.024 % + 48 $\mu$ V  | 0.064 % + 48 $\mu$ V   | 0.110 % + 234 $\mu$ V  | 0.188 % + 1318 $\mu$ V  | 0.388 % + 2560 $\mu$ V |
| 33 to 329.999 mV | 0.118 % + 1938 $\mu$ V | 0.032 % + 466 $\mu$ V | 0.064 % + 2016 $\mu$ V | 0.148 % + 3876 $\mu$ V | 0.188 % + 13180 $\mu$ V |                        |
| 33 to 329.999 V  | 0.040 % + 5.2 mV       | 0.064 % + 12 mV       | 0.070 % + 26 mV        |                        |                         |                        |
| 330 to 1000 V    | 0.040 % to 64 mV       | 0.156 % + 78 mV       | 0.156 % + 388 mV       |                        |                         |                        |

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| NVLAP Code: 20/E10<br>Capacitance | Range                           | Best Uncertainty ( $\pm y^{95\%}$ ) | Remarks |
|-----------------------------------|---------------------------------|-------------------------------------|---------|
|                                   | 0.33 nF to 0.4999 nF            | 0.388 % + 0.0078 nF                 |         |
|                                   | 0.5 nF to 1.0999 nF             | 0.388 % + 0.0078 nF                 |         |
|                                   | 1.1 nF to 3.2999 nF             | 0.388 % + 0.0078 nF                 |         |
|                                   | 3.3 nF to 10.9999 nF            | 0.388 % + 0.0078 nF                 |         |
|                                   | 11 nF to 32.9999 nF             | 0.194 % + 0.078 nF                  |         |
|                                   | 33 nF to 109.999 nF             | 0.194 % + 0.078 nF                  |         |
|                                   | 110 nF to 329.999 nF            | 0.194 % + 0.234 nF                  |         |
|                                   | 0.33 $\mu$ F to 1.09999 $\mu$ F | 0.194 % + 0.78 nF                   |         |
|                                   | 1.1 $\mu$ F to 3.29999 $\mu$ F  | 0.268 % + 2.34 nF                   |         |
|                                   | 3.3 $\mu$ F to 10.9999 $\mu$ F  | 0.268 % + 7.8 nF                    |         |
|                                   | 11 $\mu$ F to 32.9999 $\mu$ F   | 0.312 % + 23.4 nF                   |         |
|                                   | 33 $\mu$ F to 109.999 $\mu$ F   | 0.388 % + 78 nF                     |         |
|                                   | 110 $\mu$ F to 329.999 $\mu$ F  | 0.544 % + 234 nF                    |         |
|                                   | 0.33 mF to 1.1 mF               | 0.776 % + 234 nF                    |         |

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| NVLAP Code: 20/E12<br>DC Wattage | Range in W        | Best Uncertainty ( $\pm y^{95\%}$ ) | Remarks         |
|----------------------------------|-------------------|-------------------------------------|-----------------|
|                                  | 0.000108 to 330   | 0.03 %                              | 33 mV to 1000 V |
|                                  | 0.01089 to 1004.5 | 0.09 %                              | 33 mV to 1000 V |
|                                  | 0.1485 to 11000   | 0.07 %                              | 33 mV to 1000 V |

| NVLAP Code: 20/E12<br>AC Wattage | Range in W           | Best Uncertainty ( $\pm y^{95\%}$ ) | Remarks            |
|----------------------------------|----------------------|-------------------------------------|--------------------|
|                                  | 0.0001089 to 0.00297 | 0.312 %                             | 33 mV to 329.999 V |
|                                  | 0.000297 to 0.01089  | 0.194 %                             | 33 mV to 329.999 V |
|                                  | 0.001089 to 0.0297   | 0.272 %                             | 33 mV to 329.999 V |
|                                  | 0.00297 to 0.1089    | 0.194 %                             | 33 mV to 329.999 V |
|                                  | 0.01089 to 0.297     | 0.272 %                             | 33 mV to 329.999 V |
|                                  | 0.0297 to 726        | 0.194 %                             | 33 mV to 329.999 V |
|                                  | 0.0726 to 1.485      | 0.272 %                             | 33 mV to 329.999 V |
|                                  | 0.1485 to 3.63       | 0.194 %                             | 33 mV to 329.999 V |
|                                  | 0.001089 to 8.999    | 0.194 %                             | 0.33 to 1000 V     |

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|                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>TIME AND FREQUENCY</b></p> <p>NVLAP Code: 20/F01</p> <p>Frequency</p> <p>Range in Hz</p> <p>0.01 to 119.99</p> <p>120.00 to 1199.9</p> <p>1.200 to 10.000 k</p> <p>10.001 to 11.999 k</p> <p>12.00 to 119.99 k</p> <p>120.0 to 500.0 k</p> | <p>Best Uncertainty (<math>\pm</math>)<sup>1</sup></p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 11.8 mHz</p> <p>0.00194% + 11.8 mHz</p> <p>0.00194% + 11.8 mHz</p> | <p>Remarks</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(109 ns) Jitter</p> <p>(109 ns) Jitter</p> <p>(109 ns) Jitter</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**OPTICAL RADIATION**

NVLAP Code: 20/O02

Color Temperature

Range in °Kelvin

2300

2856

Best Uncertainty ( $\pm$ ) in °Kelvin<sup>1</sup>

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Laboratory Accreditation Program

## Scope of Accreditation

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CALIBRATION LABORATORIES

ELECTRONIC AUTOMATION INC.

NVLAP LAB CODE 200410-0

|                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>TIME AND FREQUENCY</b></p> <p>NVLAP Code: 20/F01</p> <p>Frequency</p> <p>Range in Hz</p> <p>0.01 to 119.99</p> <p>120.00 to 1199.9</p> <p>1.200 to 10.000 k</p> <p>10.001 to 11.999 k</p> <p>12.00 to 119.99 k</p> <p>120.0 to 500.0 k</p> | <p>Best Uncertainty (<math>\pm</math>)<sup>1</sup></p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 0.78 mHz</p> <p>0.00194% + 11.8 mHz</p> <p>0.00194% + 11.8 mHz</p> <p>0.00194% + 11.8 mHz</p> | <p>Remarks</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(1.6 <math>\mu</math>s) Jitter</p> <p>(109 ns) Jitter</p> <p>(109 ns) Jitter</p> <p>(109 ns) Jitter</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**OPTICAL RADIATION**

NVLAP Code: 20/O02

Color Temperature

Range in °Kelvin

2300

2856

Best Uncertainty ( $\pm$ ) in °Kelvin<sup>1</sup>

8

9

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For the National Institute of Standards and Technology

NVLAP 02S (11-95)

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**CALIBRATION LABORATORIES**

**ELECTRONIC AUTOMATION INC.**

**THERMODYNAMIC**

NVLAP Code: 20/T07

Temperature RTD, °C

Simulated output in ohms

| Range in °C | Best Uncertainty (±) in °C <sub>max</sub> 1, 6 | Type             |
|-------------|------------------------------------------------|------------------|
| -200 to -80 | 0.040                                          | Pt385, 100 ohm   |
| -80 to 0    | 0.040                                          | Pt385, 100 ohm   |
| 0 to 100    | 0.056                                          | Pt385, 100 ohm   |
| 100 to 300  | 0.070                                          | Pt385, 100 ohm   |
| 300 to 400  | 0.078                                          | Pt385, 100 ohm   |
| 400 to 630  | 0.094                                          | Pt385, 100 ohm   |
| 630 to 800  | 0.180                                          | Pt385, 100 ohm   |
| -200 to -80 | 0.040                                          | Pt392.6, 100 ohm |
| -80 to 0    | 0.040                                          | Pt392.6, 100 ohm |
| 0 to 100    | 0.056                                          | Pt392.6, 100 ohm |
| 100 to 300  | 0.070                                          | Pt392.6, 100 ohm |
| 300 to 400  | 0.078                                          | Pt392.6, 100 ohm |

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**CALIBRATION LABORATORIES**

**ELECTRONIC AUTOMATION INC.**

|              |       |                  |
|--------------|-------|------------------|
| 400 to 630   | 0.094 | Pt392.6, 100 ohm |
| -200 to -190 | 0.194 | Pt391.6, 100 ohm |
| -190 to -80  | 0.032 | Pt391.6, 100 ohm |
| -80 to 0     | 0.040 | Pt391.6, 100 ohm |
| 0 to 100     | 0.048 | Pt391.6, 100 ohm |
| 100 to 260   | 0.056 | Pt391.6, 100 ohm |
| 260 to 300   | 0.064 | Pt391.6, 100 ohm |
| 300 to 400   | 0.070 | Pt391.6, 100 ohm |
| 400 to 600   | 0.094 | Pt391.6, 100 ohm |
| 600 to 630   | 0.180 | Pt391.6, 100 ohm |
| -200 to -80  | 0.032 | Pt385, 200 ohm   |
| -80 to 0     | 0.032 | Pt385, 200 ohm   |
| 0 to 100     | 0.032 | Pt385, 200 ohm   |
| 100 to 260   | 0.040 | Pt385, 200 ohm   |
| 260 to 300   | 0.094 | Pt385, 200 ohm   |
| 300 to 400   | 0.102 | Pt385, 200 ohm   |
| 400 to 600   | 0.110 | Pt385, 200 ohm   |

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## Scope of Accreditation

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| CALIBRATION LABORATORIES |       | ELECTRONIC AUTOMATION INC. |
|--------------------------|-------|----------------------------|
| 600 to 630               | 0.126 | Pt385, 200 ohm             |
| -200 to -80              | 0.032 | Pt385, 500 ohm             |
| -80 to 0                 | 0.040 | Pt385, 500 ohm             |
| 0 to 100                 | 0.040 | Pt385, 500 ohm             |
| 100 to 260               | 0.048 | Pt385, 500 ohm             |
| 260 to 300               | 0.064 | Pt385, 500 ohm             |
| 300 to 400               | 0.064 | Pt385, 500 ohm             |
| 400 to 600               | 0.070 | Pt385, 500 ohm             |
| 600 to 630               | 0.086 | Pt385, 500 ohm             |
| -200 to -80              | 0.024 | Pt385, 1000 ohm            |
| -80 to 0                 | 0.024 | Pt385, 1000 ohm            |
| 0 to 100                 | 0.032 | Pt385, 1000 ohm            |
| 100 to 260               | 0.040 | Pt385, 1000 ohm            |
| 260 to 300               | 0.048 | Pt385, 1000 ohm            |
| 300 to 400               | 0.056 | Pt385, 1000 ohm            |
| 400 to 600               | 0.056 | Pt385, 1000 ohm            |

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| CALIBRATION LABORATORIES |                                                     | ELECTRONIC AUTOMATION INC. |
|--------------------------|-----------------------------------------------------|----------------------------|
| 600 to 630               | 0.180                                               | Pt385, 1000 ohm            |
| -80 to 0                 | 0.064                                               | Ni 120 ohm                 |
| 0 to 100                 | 0.064                                               | Ni 120 ohm                 |
| 100 to 260               | 0.110                                               | Ni 120 ohm                 |
| -100 to 260              | 0.234                                               | Cu427, 10 ohm              |
| Temperature, RTD °F      |                                                     |                            |
| <i>Range in °F</i>       | <i>Best Uncertainty (±) in °F<sub>new 1/s</sub></i> | <i>Type</i>                |
| -328 to -112             | 0.072                                               | Pt385, 100 ohm             |
| -112 to 32               | 0.072                                               | Pt385, 100 ohm             |
| 32 to 212                | 0.102                                               | Pt385, 100 ohm             |
| 212 to 572               | 0.126                                               | Pt385, 100 ohm             |
| 572 to 752               | 0.142                                               | Pt385, 100 ohm             |
| 752 to 1166              | 0.170                                               | Pt385, 100 ohm             |
| 1166 to 1472             | 0.324                                               | Pt385, 100 ohm             |
| -328 to -112             | 0.072                                               | Pt392.6, 100 ohm           |

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### CALIBRATION LABORATORIES

NVLAP LAB CODE 200410-0

#### ELECTRONIC AUTOMATION INC.

|              |       |                  |
|--------------|-------|------------------|
| -112 to 32   | 0.072 | Pt392.6, 100 ohm |
| 32 to 212    | 0.102 | Pt392.6, 100 ohm |
| 212 to 572   | 0.126 | Pt392.6, 100 ohm |
| 572 to 752   | 0.142 | Pt392.6, 100 ohm |
| 752 to 1166  | 0.170 | Pt392.6, 100 ohm |
|              |       |                  |
| -328 to -310 | 0.350 | Pt391.6, 100 ohm |
| -310 to -112 | 0.058 | Pt391.6, 100 ohm |
| -112 to 32   | 0.072 | Pt391.6, 100 ohm |
| 32 to 212    | 0.088 | Pt391.6, 100 ohm |
| 212 to 500   | 0.102 | Pt391.6, 100 ohm |
| 500 to 572   | 0.116 | Pt391.6, 100 ohm |
| 572 to 752   | 0.126 | Pt391.6, 100 ohm |
| 752 to 1112  | 0.142 | Pt391.6, 100 ohm |
| 1112 to 1166 | 0.324 | Pt391.6, 100 ohm |
|              |       |                  |
| -328 to -112 | 0.058 | Pt385, 200 ohm   |
| -112 to 32   | 0.058 | Pt385, 200 ohm   |

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### CALIBRATION LABORATORIES

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#### ELECTRONIC AUTOMATION INC.

|              |       |                 |
|--------------|-------|-----------------|
| 32 to 212    | 0.058 | Pt385, 200 ohm  |
| 212 to 500   | 0.072 | Pt385, 200 ohm  |
| 500 to 572   | 0.170 | Pt385, 200 ohm  |
| 572 to 752   | 0.184 | Pt385, 200 ohm  |
| 752 to 1112  | 0.198 | Pt385, 200 ohm  |
| 1112 to 1166 | 0.228 | Pt385, 200 ohm  |
| -328 to -112 | 0.058 | Pt385, 500 ohm  |
| -112 to 32   | 0.072 | Pt385, 500 ohm  |
| 32 to 212    | 0.072 | Pt385, 500 ohm  |
| 212 to 500   | 0.088 | Pt385, 500 ohm  |
| 500 to 572   | 0.116 | Pt385, 500 ohm  |
| 572 to 752   | 0.116 | Pt385, 500 ohm  |
| 752 to 1112  | 0.126 | Pt385, 500 ohm  |
| 1112 to 1166 | 0.156 | Pt385, 500 ohm  |
| -328 to -112 | 0.044 | Pt385, 1000 ohm |
| -112 to 32   | 0.044 | Pt385, 1000 ohm |

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ELECTRONIC AUTOMATION INC.

32 to 212

212 to 500

500 to 572

572 to 752

752 to 1112

1112 to 1166

-112 to 32

32 to 212

212 to 500

-148 to 500

0.058

0.072

0.088

0.102

0.102

0.324

0.116

0.116

0.198

0.422

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## Scope of Accreditation

CALIBRATION LABORATORIES

ELECTRONIC AUTOMATION INC.

NVLAP Code: 20/T08

Temperature

Thermocouple, °C

Simulated output in V

Range in °C

600 to 800

800 to 1000

1000 to 1550

1550 to 1820

0 to 150

150 to 650

650 to 1000

1000 to 1800

1800 to 2316

-250 to -100

-100 to -25

0.342

0.264

0.234

0.256

0.234

0.202

0.242

0.388

0.652

0.388

0.126

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## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |       | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------|--|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                                                              |       |                                                                                                                                           |  |
| <b>Scope of Accreditation</b>                                                                                                                                                                |       |                                                                                                                                           |  |
| CALIBRATION LABORATORIES                                                                                                                                                                     |       | NVLAP LAB CODE 200410-0                                                                                                                   |  |
| ELECTRONIC AUTOMATION INC.                                                                                                                                                                   |       |                                                                                                                                           |  |
| -25 to 350                                                                                                                                                                                   | 0.110 | E                                                                                                                                         |  |
| 350 to 650                                                                                                                                                                                   | 0.126 | E                                                                                                                                         |  |
| 650 to 1000                                                                                                                                                                                  | 0.164 | E                                                                                                                                         |  |
| -210 to -100                                                                                                                                                                                 | 0.210 | J                                                                                                                                         |  |
| -100 to -30                                                                                                                                                                                  | 0.126 | J                                                                                                                                         |  |
| -30 to 150                                                                                                                                                                                   | 0.110 | J                                                                                                                                         |  |
| 150 to 760                                                                                                                                                                                   | 0.132 | J                                                                                                                                         |  |
| 760 to 1200                                                                                                                                                                                  | 0.180 | J                                                                                                                                         |  |
| -200 to -100                                                                                                                                                                                 | 0.256 | K                                                                                                                                         |  |
| -100 to -25                                                                                                                                                                                  | 0.140 | K                                                                                                                                         |  |
| -25 to 120                                                                                                                                                                                   | 0.126 | K                                                                                                                                         |  |
| 120 to 1000                                                                                                                                                                                  | 0.202 | K                                                                                                                                         |  |
| 1000 to 1372                                                                                                                                                                                 | 0.312 | K                                                                                                                                         |  |
| 0 to 250                                                                                                                                                                                     | 0.442 | R                                                                                                                                         |  |
| 250 to 400                                                                                                                                                                                   | 0.272 | R                                                                                                                                         |  |
| December 31, 2001                                                                                                                                                                            |       | David F. Alderman                                                                                                                         |  |
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| <br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program |       | <br>DEPARTMENT OF COMMERCE<br>UNITED STATES OF AMERICA |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------|--|
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1-1994<br>ISO 9002:1987                                                                                                                            |       |                                                                                                                                         |  |
| <b>Scope of Accreditation</b>                                                                                                                                                              |       |                                                                                                                                         |  |
| CALIBRATION LABORATORIES                                                                                                                                                                   |       | NVLAP LAB CODE 200410-0                                                                                                                 |  |
| ELECTRONIC AUTOMATION INC.                                                                                                                                                                 |       |                                                                                                                                         |  |
| 400 to 1000                                                                                                                                                                                | 0.256 | R                                                                                                                                       |  |
| 1000 to 1767                                                                                                                                                                               | 0.312 | R                                                                                                                                       |  |
| 0 to 250                                                                                                                                                                                   | 0.366 | S                                                                                                                                       |  |
| 250 to 1000                                                                                                                                                                                | 0.280 | S                                                                                                                                       |  |
| 1000 to 1400                                                                                                                                                                               | 0.288 | S                                                                                                                                       |  |
| 1400 to 1767                                                                                                                                                                               | 0.358 | S                                                                                                                                       |  |
| -250 to -150                                                                                                                                                                               | 0.490 | T                                                                                                                                       |  |
| -150 to 0                                                                                                                                                                                  | 0.188 | T                                                                                                                                       |  |
| 0 to 120                                                                                                                                                                                   | 0.126 | T                                                                                                                                       |  |
| 120 to 400                                                                                                                                                                                 | 0.110 | T                                                                                                                                       |  |
| Temperature                                                                                                                                                                                |       | Type                                                                                                                                    |  |
| Thermocouple, °F                                                                                                                                                                           |       | Best Uncertainty (±) in °F <sup>max 12.4.5</sup>                                                                                        |  |
| Range in °F                                                                                                                                                                                |       |                                                                                                                                         |  |
| 1112 to 1472                                                                                                                                                                               | 0.616 | B                                                                                                                                       |  |
| 1472 to 1832                                                                                                                                                                               | 0.476 | B                                                                                                                                       |  |
| December 31, 2001                                                                                                                                                                          |       | David F. Alderman                                                                                                                       |  |
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| CALIBRATION LABORATORIES | ELECTRONIC AUTOMATION INC. |
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| 1832 to 2822             | B                          |
| 2822 to 3308             | B                          |
| 32 to 302                | C                          |
| 302 to 1202              | C                          |
| 1202 to 1832             | C                          |
| 1832 to 3272             | C                          |
| 3272 to 4201             | C                          |
| -418 to -148             | E                          |
| -148 to -13              | E                          |
| -13 to 622               | E                          |
| 622 to 1202              | E                          |
| 1202 to 1832             | E                          |
| -346 to -148             | J                          |
| -148 to -22              | J                          |
| -22 to 302               | J                          |

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| 302 to 1400              | J                          |
| 1400 to 2192             | J                          |
| -328 to -148             | K                          |
| -148 to -13              | K                          |
| -13 to 248               | K                          |
| 248 to 1832              | K                          |
| 1832 to 2502             | K                          |
| 32 to 482                | R                          |
| 482 to 752               | R                          |
| 752 to 1832              | R                          |
| 1832 to 3212             | R                          |
| 32 to 482                | S                          |
| 482 to 1832              | S                          |
| 1832 to 2552             | S                          |
| 2552 to 3212             | S                          |

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### CALIBRATION LABORATORIES

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#### ELECTRONIC AUTOMATION INC.

|              |       |   |
|--------------|-------|---|
| -418 to -238 | 0.882 | T |
| -238 to 32   | 0.340 | T |
| 32 to 248    | 0.228 | T |
| 248 to 752   | 0.198 | T |

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .
2. The uncertainties shown are for radiometric reading only.
3. Uncertainty at 45 to 65 Hz, PF-1, only.
4. Best uncertainty does not include thermocouple error.
5. The uncertainties shown are for both generating and reading.
6. The uncertainty shown is for generating RTD equivalence only.
7. Jitter uncertainty will be treated as random and its influence will vary as to counter design.

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**CALIBRATION LABORATORIES**

**OHIO RADIOLOGICAL CALIBRATION FACILITY**

1296 Kinnear Road  
Columbus, OH 43212  
Mr. Daniel Redman  
Phone: 614-688-3363 Fax: 614-688-3362

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NVLAP LAB CODE 200419-0

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**IONIZING RADIATION DOSIMETRY**

NVLAP Code: 20/101  
Dosimetry of X-Rays, Gamma Rays, and Electrons  
Calibration of Survey Instruments

| Calibration Category | Radiation Type or Beam Code | Nominal Intensity Range | Uncertainty of Reference Field ( $\pm$ year <sup>-1</sup> ) | Remarks  |
|----------------------|-----------------------------|-------------------------|-------------------------------------------------------------|----------|
| Gamma                | <sup>137</sup> Cs           | 1 R/hr to 500 R/hr      | 5.0%                                                        | Source 1 |
|                      | <sup>137</sup> Cs           | > 10 mR/hr to 5 R/hr    | 5.0%                                                        | Source 2 |
|                      | <sup>137</sup> Cs           | > 10 mR/hr to 50 mR/hr  | 5.0%                                                        | Source 3 |
|                      | <sup>137</sup> Cs           | 0.1 mR/hr to 10mR/hr    | 7.0%                                                        | Source 3 |

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1. Represents an expanded uncertainty using a coverage factor, k = 2.

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September 30, 2001

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|                                                                                                                                                                                                                                                                                                                      |                                                     |                                                                                                             |  |              |                                                     |                |                |               |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--|--------------|-----------------------------------------------------|----------------|----------------|---------------|--------------|
|                                                                                                                                                                                                                                   |                                                     | National Institute<br>of Standards and Technology<br>National Voluntary<br>Laboratory Accreditation Program |  |              |                                                     |                |                |               |              |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                                                                                                                                                                                                                                                      |                                                     | <b>Scope of Accreditation</b>                                                                               |  |              |                                                     |                |                |               |              |
| CALIBRATION LABORATORIES                                                                                                                                                                                                                                                                                             |                                                     | NVLAP LAB CODE 200421-0                                                                                     |  |              |                                                     |                |                |               |              |
| INDIANA DIVISION OF WEIGHTS AND MEASURES<br>2525 North Shadeland Avenue, Suite D3<br>Indianapolis, IN 46219-1791<br>Mr. Larry J. Stump<br>Phone: 317-356-7078 Fax: 317-351-2877<br>E-Mail: lstump@isdh.state.in.us                                                                                                   |                                                     |                                                                                                             |  |              |                                                     |                |                |               |              |
| Page 1 of 14                                                                                                                                                                                                                                                                                                         |                                                     |                                                                                                             |  |              |                                                     |                |                |               |              |
| <b>DIMENSIONAL</b><br>NVLAP Labcode: 20/D13<br>Surveying Rods and Tapes<br><table border="0"> <tr> <td><b>Range</b></td> <td><b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b></td> <td><b>Remarks</b></td> </tr> <tr> <td>0 - 18"</td> <td><math>\pm 0.0042"</math></td> <td>Rigid Rules</td> </tr> </table>      |                                                     |                                                                                                             |  | <b>Range</b> | <b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b> | <b>Remarks</b> | 0 - 18"        | $\pm 0.0042"$ | Rigid Rules  |
| <b>Range</b>                                                                                                                                                                                                                                                                                                         | <b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b> | <b>Remarks</b>                                                                                              |  |              |                                                     |                |                |               |              |
| 0 - 18"                                                                                                                                                                                                                                                                                                              | $\pm 0.0042"$                                       | Rigid Rules                                                                                                 |  |              |                                                     |                |                |               |              |
| <b>TIME AND FREQUENCY</b><br>NVLAP Code: 20/F02<br>Time Dissemination<br><table border="0"> <tr> <td><b>Range</b></td> <td><b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b></td> <td><b>Remarks</b></td> </tr> <tr> <td><math>\leq 3</math> hours</td> <td>0.214 second</td> <td>Stop Watches</td> </tr> </table> |                                                     |                                                                                                             |  | <b>Range</b> | <b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b> | <b>Remarks</b> | $\leq 3$ hours | 0.214 second  | Stop Watches |
| <b>Range</b>                                                                                                                                                                                                                                                                                                         | <b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b> | <b>Remarks</b>                                                                                              |  |              |                                                     |                |                |               |              |
| $\leq 3$ hours                                                                                                                                                                                                                                                                                                       | 0.214 second                                        | Stop Watches                                                                                                |  |              |                                                     |                |                |               |              |
| December 31, 2001                                                                                                                                                                                                                                                                                                    |                                                     | David F. Alderman                                                                                           |  |              |                                                     |                |                |               |              |
| Effective through                                                                                                                                                                                                                                                                                                    |                                                     | For the National Institute of Standards and Technology                                                      |  |              |                                                     |                |                |               |              |
| NVLAP-02S (11-95)                                                                                                                                                                                                                                                                                                    |                                                     |                                                                                                             |  |              |                                                     |                |                |               |              |

|                                                                                   |                                                     |                                                                                                             |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--|
|  |                                                     | National Institute<br>of Standards and Technology<br>National Voluntary<br>Laboratory Accreditation Program |  |
| ISO/IEC GUIDE 25:1990<br>ANSI/NCSL Z540-1:1994<br>ISO 9002:1987                   |                                                     | <b>Scope of Accreditation</b>                                                                               |  |
| CALIBRATION LABORATORIES                                                          |                                                     | NVLAP LAB CODE 200421-0                                                                                     |  |
| INDIANA DIVISION OF WEIGHTS AND MEASURES                                          |                                                     |                                                                                                             |  |
| <b>MECHANICAL</b><br>NVLAP Code: 20/M08<br>MASS                                   |                                                     |                                                                                                             |  |
| Page 2 of 14                                                                      |                                                     |                                                                                                             |  |
| <b>Range</b>                                                                      | <b>Best Uncertainty (<math>\pm y_{95\%}</math>)</b> | <b>Remarks</b>                                                                                              |  |
| 50 kg                                                                             | 146.7 mg                                            | Double Substitution                                                                                         |  |
| 30 kg                                                                             | 142.6 mg                                            | Double Substitution                                                                                         |  |
| 25 kg                                                                             | 23.4 mg                                             | Double Substitution                                                                                         |  |
| 20 kg                                                                             | 20.3 mg                                             | Double Substitution                                                                                         |  |
| 10 kg                                                                             | 14.23 mg                                            | Double Substitution                                                                                         |  |
| 5 kg                                                                              | 7.84 mg                                             | Double Substitution                                                                                         |  |
| 3 kg                                                                              | 4.27 mg                                             | Double Substitution                                                                                         |  |
| 2 kg                                                                              | 3.92 mg                                             | Double Substitution                                                                                         |  |
| 1 kg                                                                              | 0.75 mg                                             | Double Substitution                                                                                         |  |
| 500 g                                                                             | 0.391 mg                                            | Double Substitution                                                                                         |  |
| 300 g                                                                             | 0.254 mg                                            | Double Substitution                                                                                         |  |
| 200 g                                                                             | 0.184 mg                                            | Double Substitution                                                                                         |  |
| 100 g                                                                             | 0.109 mg                                            | Double Substitution                                                                                         |  |
| December 31, 2001                                                                 |                                                     | David F. Alderman                                                                                           |  |
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|        |           |                     |
|--------|-----------|---------------------|
| 50 g   | 0.066 mg  | Double Substitution |
| 30 g   | 0.056 mg  | Double Substitution |
| 20 g   | 0.028 mg  | Double Substitution |
| 10 g   | 0.020 mg  | Double Substitution |
| 5 g    | 0.0107 mg | Double Substitution |
| 3 g    | 0.0075 mg | Double Substitution |
| 2 g    | 0.0061 mg | Double Substitution |
| 1 g    | 0.0053 mg | Double Substitution |
| 500 mg | 0.0050 mg | Double Substitution |
| 300 mg | 0.0046 mg | Double Substitution |
| 200 mg | 0.0045 mg | Double Substitution |
| 100 mg | 0.0018 mg | Double Substitution |
| 50 mg  | 0.0017 mg | Double Substitution |
| 30 mg  | 0.0018 mg | Double Substitution |
| 20 mg  | 0.0017 mg | Double Substitution |
| 10 mg  | 0.0010 mg | Double Substitution |
| 5 mg   | 0.0009 mg | Double Substitution |

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|         |           |                     |
|---------|-----------|---------------------|
| 3 mg    | 0.0009 mg | Double Substitution |
| 2 mg    | 0.0009 mg | Double Substitution |
| 1 mg    | 0.0010 mg | Double Substitution |
| 100 lb  | 3.40 g    | Double Substitution |
| 50 lb   | 23.06 mg  | Double Substitution |
| 30 lb   | 14.57 mg  | Double Substitution |
| 25 lb   | 12.43 mg  | Double Substitution |
| 20 lb   | 9.56 mg   | Double Substitution |
| 10 lb   | 4.53 mg   | Double Substitution |
| 5 lb    | 4.01 mg   | Double Substitution |
| 3 lb    | 3.76 mg   | Double Substitution |
| 2 lb    | 0.763 mg  | Double Substitution |
| 1 lb    | 0.416 mg  | Double Substitution |
| 0.5 lb  | 0.300 mg  | Double Substitution |
| 0.3 lb  | 0.264 mg  | Double Substitution |
| 0.25 lb | 0.108 mg  | Double Substitution |

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| CALIBRATION LABORATORIES |           | INDIANA DIVISION OF WEIGHTS AND MEASURES |
|--------------------------|-----------|------------------------------------------|
| 0.2 lb                   | 0.094 mg  | Double Substitution                      |
| 0.1 lb                   | 0.060 mg  | Double Substitution                      |
| 0.05 lb                  | 0.025 mg  | Double Substitution                      |
| 0.03 lb                  | 0.021 mg  | Double Substitution                      |
| 0.02 lb                  | 0.019 mg  | Double Substitution                      |
| 0.01 lb                  | 0.008 mg  | Double Substitution                      |
| 0.005 lb                 | 0.006 mg  | Double Substitution                      |
| 0.003 lb                 | 0.005 mg  | Double Substitution                      |
| 0.002 lb                 | 0.005 mg  | Double Substitution                      |
| 0.001 lb                 | 0.005 mg  | Double Substitution                      |
| 500 µlb                  | 0.0051 mg | Double Substitution                      |
| 300 µlb                  | 0.0051 mg | Double Substitution                      |
| 200 µlb                  | 0.0025 mg | Double Substitution                      |
| 100 µlb                  | 0.0024 mg | Double Substitution                      |
| 50 µlb                   | 0.0012 mg | Double Substitution                      |
| 30 µlb                   | 0.0012 mg | Double Substitution                      |
| 20 µlb                   | 0.0012 mg | Double Substitution                      |

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| CALIBRATION LABORATORIES |           | INDIANA DIVISION OF WEIGHTS AND MEASURES |
|--------------------------|-----------|------------------------------------------|
| 10 µlb                   | 0.0012 mg | Double Substitution                      |
| 5 µlb                    | 0.0008 mg | Double Substitution                      |
| 3 µlb                    | 0.0008 mg | Double Substitution                      |
| 2 µlb                    | 0.0008 mg | Double Substitution                      |
| 1 µlb                    | 0.0008 mg | Double Substitution                      |
| 500 kg                   | 11.48 g   | Tolerance Test - Modified Substitution   |
| 300 kg                   | 9.64 g    | Tolerance Test - Modified Substitution   |
| 200 kg                   | 9.48 g    | Tolerance Test - Modified Substitution   |
| 100 kg                   | 14.09 g   | Tolerance Test - Modified Substitution   |
| 50 kg                    | 342.83 mg | Tolerance Test - Modified Substitution   |
| 30 kg                    | 221.68 mg | Tolerance Test - Modified Substitution   |
| 25 kg                    | 220.92 mg | Tolerance Test - Modified Substitution   |
| 20 kg                    | 46.94 mg  | Tolerance Test - Modified Substitution   |
| 10 kg                    | 44.66 mg  | Tolerance Test - Modified Substitution   |
| 5 kg                     | 22.33 mg  | Tolerance Test - Modified Substitution   |
| 3 kg                     | 6.43 mg   | Tolerance Test - Modified Substitution   |

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|           |                                        |  |
|-----------|----------------------------------------|--|
| 2 kg      | Tolerance Test - Modified Substitution |  |
| 1 kg      | Tolerance Test - Modified Substitution |  |
| 500 g     | Tolerance Test - Modified Substitution |  |
| 300 g     | Tolerance Test - Modified Substitution |  |
| 200 g     | Tolerance Test - Modified Substitution |  |
| 100 g     | Tolerance Test - Modified Substitution |  |
| 50 g      | Tolerance Test - Modified Substitution |  |
| 30 g      | Tolerance Test - Modified Substitution |  |
| 20 g      | Tolerance Test - Modified Substitution |  |
| 10 g      | Tolerance Test - Modified Substitution |  |
| 5 g       | Tolerance Test - Modified Substitution |  |
| 3 g       | Tolerance Test - Modified Substitution |  |
| 2 g       | Tolerance Test - Modified Substitution |  |
| 1 g       | Tolerance Test - Modified Substitution |  |
| 500 mg    | Tolerance Test - Modified Substitution |  |
| 300 mg    | Tolerance Test - Modified Substitution |  |
| 200 mg    | Tolerance Test - Modified Substitution |  |
| 6.20 mg   | Tolerance Test - Modified Substitution |  |
| 6.05 mg   | Tolerance Test - Modified Substitution |  |
| 6.01 mg   | Tolerance Test - Modified Substitution |  |
| 6.00 mg   | Tolerance Test - Modified Substitution |  |
| 0.167 mg  | Tolerance Test - Modified Substitution |  |
| 0.100 mg  | Tolerance Test - Modified Substitution |  |
| 0.066 mg  | Tolerance Test - Modified Substitution |  |
| 0.060 mg  | Tolerance Test - Modified Substitution |  |
| 0.025 mg  | Tolerance Test - Modified Substitution |  |
| 0.050 mg  | Tolerance Test - Modified Substitution |  |
| 0.001 mg  | Tolerance Test - Modified Substitution |  |
| 0.007 mg  | Tolerance Test - Modified Substitution |  |
| 0.005 mg  | Tolerance Test - Modified Substitution |  |
| 0.004 mg  | Tolerance Test - Modified Substitution |  |
| 0.0041 mg | Tolerance Test - Modified Substitution |  |
| 0.0037 mg | Tolerance Test - Modified Substitution |  |
| 0.0036 mg | Tolerance Test - Modified Substitution |  |

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|           |                                        |  |
|-----------|----------------------------------------|--|
| 100 mg    | Tolerance Test - Modified Substitution |  |
| 50 mg     | Tolerance Test - Modified Substitution |  |
| 30 mg     | Tolerance Test - Modified Substitution |  |
| 20 mg     | Tolerance Test - Modified Substitution |  |
| 10 mg     | Tolerance Test - Modified Substitution |  |
| 5 mg      | Tolerance Test - Modified Substitution |  |
| 3 mg      | Tolerance Test - Modified Substitution |  |
| 2 mg      | Tolerance Test - Modified Substitution |  |
| 1 mg      | Tolerance Test - Modified Substitution |  |
| 4.80 g    | Tolerance Test - Modified Substitution |  |
| 3.28 g    | Tolerance Test - Modified Substitution |  |
| 1.81 g    | Tolerance Test - Modified Substitution |  |
| 1.58 g    | Tolerance Test - Modified Substitution |  |
| 0.227 g   | Tolerance Test - Modified Substitution |  |
| 231.04 mg | Tolerance Test - Modified Substitution |  |
| 191.51 mg | Tolerance Test - Modified Substitution |  |

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#### INDIANA DIVISION OF WEIGHTS AND MEASURES

|         |           |                                        |
|---------|-----------|----------------------------------------|
| 30 lb   | 155.45 mg | Tolerance Test - Modified Substitution |
| 25 lb   | 155.31 mg | Tolerance Test - Modified Substitution |
| 20 lb   | 7.11 mg   | Tolerance Test - Modified Substitution |
| 10 lb   | 35.519 mg | Tolerance Test - Modified Substitution |
| 5 lb    | 2.830 mg  | Tolerance Test - Modified Substitution |
| 3 lb    | 2.665 mg  | Tolerance Test - Modified Substitution |
| 2 lb    | 2.545 mg  | Tolerance Test - Modified Substitution |
| 1 lb    | 1.713 mg  | Tolerance Test - Modified Substitution |
| 0.5 lb  | 2.665 mg  | Tolerance Test - Modified Substitution |
| 0.3 lb  | 0.118 mg  | Tolerance Test - Modified Substitution |
| 0.25 lb | 0.098 mg  | Tolerance Test - Modified Substitution |
| 0.2 lb  | 0.083 mg  | Tolerance Test - Modified Substitution |
| 0.1 lb  | 0.072 mg  | Tolerance Test - Modified Substitution |
| 0.05 lb | 0.033 mg  | Tolerance Test - Modified Substitution |
| 0.03 lb | 0.047 mg  | Tolerance Test - Modified Substitution |
| 0.02 lb | 0.033 mg  | Tolerance Test - Modified Substitution |
| 0.01 lb | 0.008 mg  | Tolerance Test - Modified Substitution |

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### CALIBRATION LABORATORIES

#### INDIANA DIVISION OF WEIGHTS AND MEASURES

|            |          |                                        |
|------------|----------|----------------------------------------|
| 0.005 lb   | 0.006 mg | Tolerance Test - Modified Substitution |
| 0.003 lb   | 0.005 mg | Tolerance Test - Modified Substitution |
| 0.002 lb   | 0.005 mg | Tolerance Test - Modified Substitution |
| 0.001 lb   | 0.005 mg | Tolerance Test - Modified Substitution |
| 2 oz       | 0.310 mg | Tolerance Test - Modified Substitution |
| 1 oz       | 0.172 mg | Tolerance Test - Modified Substitution |
| 0.5 oz     | 0.114 mg | Tolerance Test - Modified Substitution |
| 0.25 oz    | 0.078 mg | Tolerance Test - Modified Substitution |
| 0.125 oz   | 0.073 mg | Tolerance Test - Modified Substitution |
| 0.0625 oz  | 0.088 mg | Tolerance Test - Modified Substitution |
| 0.03125 oz | 0.088 mg | Tolerance Test - Modified Substitution |
| 3 kg       | 15.60 g  | Tolerance Test - Direct Reading        |
| 2 kg       | 11.32 g  | Tolerance Test - Direct Reading        |
| 1 kg       | 7.68 g   | Tolerance Test - Direct Reading        |
| 500 g      | 6.46 g   | Tolerance Test - Direct Reading        |

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### INDIANA DIVISION OF WEIGHTS AND MEASURES

|        |          |                                 |
|--------|----------|---------------------------------|
| 300 g  | 6.20 g   | Tolerance Test - Direct Reading |
| 200 g  | 0.132 mg | Tolerance Test - Direct Reading |
| 100 g  | 0.101 mg | Tolerance Test - Direct Reading |
| 50 g   | 0.101 mg | Tolerance Test - Direct Reading |
| 30 g   | 0.101 mg | Tolerance Test - Direct Reading |
| 20 g   | 0.101 mg | Tolerance Test - Direct Reading |
| 10 g   | 0.101 mg | Tolerance Test - Direct Reading |
| 5 g    | 0.089 mg | Tolerance Test - Direct Reading |
| 3 g    | 0.089 mg | Tolerance Test - Direct Reading |
| 2 g    | 0.089 mg | Tolerance Test - Direct Reading |
| 1 g    | 0.022 mg | Tolerance Test - Direct Reading |
| 500 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 300 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 200 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 100 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 50 mg  | 0.020 mg | Tolerance Test - Direct Reading |
| 30 mg  | 0.020 mg | Tolerance Test - Direct Reading |

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### INDIANA DIVISION OF WEIGHTS AND MEASURES

|         |           |                                 |
|---------|-----------|---------------------------------|
| 20 mg   | 0.020 mg  | Tolerance Test - Direct Reading |
| 10 mg   | 0.020 mg  | Tolerance Test - Direct Reading |
| 5 mg    | 0.020 mg  | Tolerance Test - Direct Reading |
| 3 mg    | 0.020 mg  | Tolerance Test - Direct Reading |
| 2 mg    | 0.020 mg  | Tolerance Test - Direct Reading |
| 1 mg    | 0.020 mg  | Tolerance Test - Direct Reading |
| 5 lb    | 11.526 mg | Tolerance Test - Direct Reading |
| 3 lb    | 7.118 mg  | Tolerance Test - Direct Reading |
| 2 lb    | 4.904 mg  | Tolerance Test - Direct Reading |
| 1 lb    | 3.103 mg  | Tolerance Test - Direct Reading |
| 0.5 lb  | 3.063 mg  | Tolerance Test - Direct Reading |
| 0.3 lb  | 0.107 mg  | Tolerance Test - Direct Reading |
| 0.25 lb | 0.101 mg  | Tolerance Test - Direct Reading |
| 0.2 lb  | 0.101 mg  | Tolerance Test - Direct Reading |
| 0.1 lb  | 0.101 mg  | Tolerance Test - Direct Reading |
| 0.05 lb | 0.101 mg  | Tolerance Test - Direct Reading |

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### CALIBRATION LABORATORIES

#### INDIANA DIVISION OF WEIGHTS AND MEASURES

| Range      | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks                         |
|------------|-----------------------------------------|---------------------------------|
| 0.03 lb    | 0.101 mg                                | Tolerance Test - Direct Reading |
| 0.02 lb    | 0.101 mg                                | Tolerance Test - Direct Reading |
| 0.01 lb    | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.005 lb   | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.003 lb   | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.002 lb   | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.001 lb   | 0.089 mg                                | Tolerance Test - Direct Reading |
| 2 oz       | 0.101 mg                                | Tolerance Test - Direct Reading |
| 1 oz       | 0.101 mg                                | Tolerance Test - Direct Reading |
| 0.5 oz     | 0.101 mg                                | Tolerance Test - Direct Reading |
| 0.25 oz    | 0.101 mg                                | Tolerance Test - Direct Reading |
| 0.125 oz   | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.0625 oz  | 0.089 mg                                | Tolerance Test - Direct Reading |
| 0.03125 oz | 0.089 mg                                | Tolerance Test - Direct Reading |

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### CALIBRATION LABORATORIES

#### INDIANA DIVISION OF WEIGHTS AND MEASURES

| Range  | Best Uncertainty ( $\pm$ ) <sup>1</sup> | Remarks                    |
|--------|-----------------------------------------|----------------------------|
| 5 gal  | 0.14 in <sup>3</sup>                    | Gravimetric Method         |
| 1 gill | 1.6 mm                                  | Gravimetric Method         |
| 25 ml  | 0.136 ml                                | Gravimetric Method         |
| 50 gal | 2.21 in <sup>3</sup>                    | Volumetric Transfer Method |
| 5 gal  | 0.177 in <sup>3</sup>                   | Volumetric Transfer Method |
| 20 l   | 3.026 ml                                | Volumetric Transfer Method |

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1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .



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**CALIBRATION LABORATORIES**

TECHNI-CAL SERVICES OF ORANGE CTY., INC.

51 Peddler Hill Road  
Monroe, NY 10950  
Mr. John Tasca  
Phone: 845-783-4235 Fax: 845-783-3573  
E-Mail: techni@frontiernet.net

NVLAP LAB CODE 200459-0

---

**OPTICAL RADIATION**

NVLAP Code: 20/002

Color Temperature

*Range in °Kelvin*

|      |    |
|------|----|
| 2300 | 42 |
| 2856 | 54 |

*Best Uncertainty ( $\pm$ ) in °Kelvin<sup>max</sup>*

---

1. Represents an expanded uncertainty using a coverage factor,  $k=2$ .

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*David T. Alderman*

for the National Institute of Standards and Technology

LAB 025 (11, 96)



## **INDEX**

# **F**

**LISTING OF  
CHEMICAL  
CALIBRATION  
LABORATORIES  
BY NVLAP  
LAB CODE**





**INDEX F. LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE****NVLAP LAB CODE 200379-0****Ultra Scientific, Inc.**

250 Smith Street  
North Kingstown, RI 02852-7723  
Contact: Mr. Edward F. Martz  
Phone: 401-294-9400  
Fax: 401-295-2330  
E-Mail: emartz@ultrasci.com  
URL: www.ultrasci.com

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43 | Total Hardness (as CaCO subscript 3)                    |
| 20/U44 | Total Dissolved Solids                                  |
| 20/U48 | Specific Conductance                                    |

**USEPA WPCHEM/DMRQACHEM**

|        |                                             |
|--------|---------------------------------------------|
| 20/U28 | Trace Metals                                |
| 20/U31 | Nutrients                                   |
| 20/U32 | Total Residual Chlorine                     |
| 20/U33 | Cyanide                                     |
| 20/U40 | Total Phenolics                             |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue                      |
| 20/U46 | Oil and Grease                              |
| 20/U47 | pH                                          |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U09 | Volatile Organic Compounds (VOCs) Group 1      |
| 20/U10 | Volatile Organic Compounds (VOCs) Group 11     |
| 20/U11 | Insecticides (Pesticides)                      |
| 20/U12 | Herbicides (Pesticides)                        |
| 20/U13 | Carbamate Pesticides                           |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)          |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors)      |
| 20/U16 | Toxaphene and Chlordane                        |
| 20/U17 | Dioxin (2, 3, 7, 8-TCDD)                       |
| 20/U18 | Adipate and Phthalate Esters                   |
| 20/U19 | Haloacetic Acids                               |
| 20/U20 | Chloral Hydrate                                |

|        |                                        |
|--------|----------------------------------------|
| 20/U21 | Total Organic Carbon (TOC)             |
| 20/U22 | Alkalinity (as CaCO subscript 3)       |
| 20/U23 | Calcium Hardness (as CaCO subscript 3) |
| 20/U24 | Total Filterable Residue               |
| 20/U25 | pH                                     |
| 20/U26 | Turbidity                              |

**NVLAP LAB CODE 200384-0****Analytical Products Group, Inc.**

2730 Washington Boulevard  
Belpre, OH 45714-1943  
Contact: Mr. Thomas V. Coyner  
Phone: 740-423-4200  
Fax: 740-423-5588  
E-Mail: info@apgqa.com  
URL: http://www.APGQA.com

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

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|------|-------------|
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**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43 | Total Hardness (as CaCO subscript 3)                    |
| 20/U44 | Total Dissolved Solids                                  |
| 20/U48 | Specific Conductance                                    |

**USEPA WPCHEM/DMRQACHEM**

|        |                                             |
|--------|---------------------------------------------|
| 20/U28 | Trace Metals                                |
| 20/U31 | Nutrients                                   |
| 20/U32 | Total Residual Chlorine                     |
| 20/U33 | Cyanide                                     |
| 20/U40 | Total Phenolics                             |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue                      |
| 20/U46 | Oil and Grease                              |
| 20/U47 | pH                                          |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U09 | Volatile Organic Compounds (VOCs) Group 1      |
| 20/U10 | Volatile Organic Compounds (VOCs) Group 11     |
| 20/U11 | Insecticides (Pesticides)                      |
| 20/U12 | Herbicides (Pesticides)                        |
| 20/U13 | Carbamate Pesticides                           |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)          |

**INDEX F. LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE- continued**

|        |                                           |
|--------|-------------------------------------------|
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors) |
| 20/U16 | Toxaphene and Chlordane                   |
| 20/U18 | Adipate and Phthalate Esters              |
| 20/U19 | Haloacetic Acids                          |
| 20/U20 | Chloral Hydrate                           |
| 20/U21 | Total Organic Carbon (TOC)                |
| 20/U22 | Alkalinity (as CaCO subscript 3)          |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)    |
| 20/U24 | Total Filterable Residue                  |
| 20/U25 | pH                                        |
| 20/U26 | Turbidity                                 |

**NVLAP LAB CODE 200386-0****Environmental Resource Associates (ERA)**

5540 Marshall Street  
Arvada, CO 80002  
Contact: Mr. Charles Wibby  
Phone: 303-431-8454  
Fax: 303-421-0159  
E-Mail: cwibby@eraqc.com  
URL: <http://www.eraqc.com>

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43 | Total Hardness (as CaCO subscript 3)                    |
| 20/U44 | Total Dissolved Solids                                  |
| 20/U48 | Specific Conductance                                    |

**USEPA WPCHEM/DMRQACHEM**

|        |                                             |
|--------|---------------------------------------------|
| 20/U28 | Trace Metals                                |
| 20/U31 | Nutrients                                   |
| 20/U32 | Total Residual Chlorine                     |
| 20/U33 | Cyanide                                     |
| 20/U40 | Total Phenolics                             |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue                      |
| 20/U46 | Oil and Grease                              |
| 20/U47 | pH                                          |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I      |

|        |                                            |
|--------|--------------------------------------------|
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides)                  |
| 20/U12 | Herbicides (Pesticides)                    |
| 20/U13 | Carbamate Pesticides                       |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)      |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors)  |
| 20/U16 | Toxaphene and Chlordane                    |
| 20/U18 | Adipate and Phthalate Esters               |
| 20/U19 | Haloacetic Acids                           |
| 20/U20 | Chloral Hydrate                            |
| 20/U21 | Total Organic Carbon (TOC)                 |
| 20/U22 | Alkalinity (as CaCO subscript 3)           |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)     |
| 20/U24 | Total Filterable Residue                   |
| 20/U25 | pH                                         |
| 20/U26 | Turbidity                                  |

**USEPA WSMICRO**

|        |                             |
|--------|-----------------------------|
| 20/U27 | Coliform (Presence/Absence) |
|--------|-----------------------------|

**NVLAP LAB CODE 200387-0****NYS DOH Environmental Laboratory Approval Program**

Empire State Plaza  
P.O. Box 509  
Albany, NY 12201-0509  
Contact: Dr. Kenneth W. Jackson  
Phone: 518-485-5570  
Fax: 518-485-5568  
E-Mail: [jackson@wadsworth.org](mailto:jackson@wadsworth.org)  
URL: <http://www.wadsworth.org/labcert/elap.html>

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43 | Total Hardness (as CaCO subscript 3)                    |
| 20/U44 | Total Dissolved Solids                                  |
| 20/U48 | Specific Conductance                                    |

**USEPA WPCHEM/DMRQACHEM**

|        |                                             |
|--------|---------------------------------------------|
| 20/U28 | Trace Metals                                |
| 20/U31 | Nutrients                                   |
| 20/U33 | Cyanide                                     |
| 20/U40 | Total Phenolics                             |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue                      |
| 20/U46 | Oil and Grease                              |
| 20/U47 | pH                                          |

**USEPA WSCHEM**

|        |                                                                                           |
|--------|-------------------------------------------------------------------------------------------|
| 20/U01 | Trace Metals (Note: Composite formulation of the PT Material for mercury does not conform |
|--------|-------------------------------------------------------------------------------------------|

# INDEX F. LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE- continued

|        |                                                               |                               |                                                            |
|--------|---------------------------------------------------------------|-------------------------------|------------------------------------------------------------|
|        | to the current USEPA Criteria Document,<br>dated 12/30/1999.) | 20/U35                        | Volatile Aromatic Compounds                                |
| 20/U02 | Sodium                                                        | 20/U36                        | Chlorinated Pesticides                                     |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate                | 20/U37                        | Chlordane                                                  |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite                      | 20/U38                        | Polychlorinated Biphenyls (PCBs) (as<br>Aroclors) in Water |
| 20/U05 | Sulfate                                                       | 20/U39                        | Polychlorinated Biphenyls (PCBs) (as<br>Aroclors) in Oil   |
| 20/U07 | Cyanide                                                       | 20/U42                        | Total Alkalinity (as CaCO subscript 3)                     |
| 20/U08 | Asbestos                                                      | 20/U43                        | Total Hardness (as CaCO subscript 3)                       |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I                     | 20/U44                        | Total Dissolved Solids                                     |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II                    | 20/U48                        | Specific Conductance                                       |
| 20/U11 | Insecticides (Pesticides)                                     | <b>USEPA WPCHEM/DMRQACHEM</b> |                                                            |
| 20/U12 | Herbicides (Pesticides)                                       | 20/U28                        | Trace Metals                                               |
| 20/U13 | Carbamate Pesticides                                          | 20/U31                        | Nutrients                                                  |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)                         | 20/U32                        | Total Residual Chlorine                                    |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors)                     | 20/U33                        | Cyanide                                                    |
| 20/U16 | Toxaphene and Chlordane                                       | 20/U40                        | Total Phenolics                                            |
| 20/U17 | Dioxin (2, 3, 7, 8-TCDD)                                      | 20/U41                        | Demands (Source: Glucose and glutamic acid)                |
| 20/U18 | Adipate and Phthalate Esters                                  | 20/U45                        | Non-Filterable Residue                                     |
| 20/U21 | Total Organic Carbon (TOC)                                    | 20/U46                        | Oil and Grease                                             |
| 20/U22 | Alkalinity (as CaCO subscript 3)                              | 20/U47                        | pH                                                         |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)                        | <b>USEPA WSCHEM</b>           |                                                            |
| 20/U24 | Total Filterable Residue                                      | 20/U01                        | Trace Metals                                               |
| 20/U25 | pH                                                            | 20/U02                        | Sodium                                                     |

## USEPA WSMICRO

|        |                             |
|--------|-----------------------------|
| 20/U27 | Coliform (Presence/Absence) |
|--------|-----------------------------|

### NVLAP LAB CODE 200388-0

#### Chrisope Technologies, A Division of Remel

3941 Ryan Street  
Lake Charles, LA 70605  
Contact: Ms. Jody D. Moss  
Phone: 800-256-4376 x236  
Fax: 337-479-1006  
E-Mail: jdmoss@remelinc.com

#### Providers of Proficiency Testing

Accreditation Valid Through: September 30, 2001

#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

## USEPA WSMICRO

|        |                             |
|--------|-----------------------------|
| 20/U27 | Coliform (Presence/Absence) |
|--------|-----------------------------|

### NVLAP LAB CODE 200389-0

#### AccuStandard, Inc.

125 Market Street  
New Haven, CT 06513-3031  
Contact: Mr. William McClain  
Phone: 203-786-5290 x102  
Fax: 203-786-5287  
E-Mail: usa@accustandard.com  
URL: <http://www.accustandard.com>

#### Providers of Proficiency Testing

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#### NVLAP

| Code | Designation |
|------|-------------|
|------|-------------|

## USEPA WPCHEM

|        |                                                        |
|--------|--------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium,<br>and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate              |
| 20/U34 | Volatile Halocarbon Compounds                          |

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| 20/U35                        | Volatile Aromatic Compounds                                |
| 20/U36                        | Chlorinated Pesticides                                     |
| 20/U37                        | Chlordane                                                  |
| 20/U38                        | Polychlorinated Biphenyls (PCBs) (as<br>Aroclors) in Water |
| 20/U39                        | Polychlorinated Biphenyls (PCBs) (as<br>Aroclors) in Oil   |
| 20/U42                        | Total Alkalinity (as CaCO subscript 3)                     |
| 20/U43                        | Total Hardness (as CaCO subscript 3)                       |
| 20/U44                        | Total Dissolved Solids                                     |
| 20/U48                        | Specific Conductance                                       |
| <b>USEPA WPCHEM/DMRQACHEM</b> |                                                            |
| 20/U28                        | Trace Metals                                               |
| 20/U31                        | Nutrients                                                  |
| 20/U32                        | Total Residual Chlorine                                    |
| 20/U33                        | Cyanide                                                    |
| 20/U40                        | Total Phenolics                                            |
| 20/U41                        | Demands (Source: Glucose and glutamic acid)                |
| 20/U45                        | Non-Filterable Residue                                     |
| 20/U46                        | Oil and Grease                                             |
| 20/U47                        | pH                                                         |
| <b>USEPA WSCHEM</b>           |                                                            |
| 20/U01                        | Trace Metals                                               |
| 20/U02                        | Sodium                                                     |
| 20/U03                        | Nitrate, Nitrite, Fluoride, and Orthophosphate             |
| 20/U04                        | Bromate, Bromide, Chlorate, and Chlorite                   |
| 20/U05                        | Sulfate                                                    |
| 20/U06                        | Residual Free Chlorine                                     |
| 20/U07                        | Cyanide                                                    |
| 20/U09                        | Volatile Organic Compounds (VOCs) Group I                  |
| 20/U10                        | Volatile Organic Compounds (VOCs) Group II                 |
| 20/U11                        | Insecticides (Pesticides)                                  |
| 20/U12                        | Herbicides (Pesticides)                                    |
| 20/U13                        | Carbamate Pesticides                                       |
| 20/U14                        | Polycyclic Aromatic Hydrocarbon (PAH)                      |
| 20/U15                        | Polychlorinated Biphenyls (PCBs/Aroclors)                  |
| 20/U16                        | Toxaphene and Chlordane                                    |
| 20/U17                        | Dioxin (2, 3, 7, 8-TCDD)                                   |
| 20/U18                        | Adipate and Phthalate Esters                               |
| 20/U19                        | Haloacetic Acids                                           |
| 20/U20                        | Chloral Hydrate                                            |
| 20/U21                        | Total Organic Carbon (TOC)                                 |
| 20/U22                        | Alkalinity (as CaCO subscript 3)                           |
| 20/U23                        | Calcium Hardness (as CaCO subscript 3)                     |
| 20/U24                        | Total Filterable Residue                                   |
| 20/U25                        | pH                                                         |
| 20/U26                        | Turbidity                                                  |

### NVLAP LAB CODE 200390-0

#### Absolute Standards, Inc.

P.O. Box 5585  
Hamden, CT 06518-0585  
Contact: Mr. Stephen J. Arpie, M.S.  
Phone: 203-281-2917  
Fax: 203-281-2922  
E-Mail: absolutest@aol.com  
URL: <http://www.absoluteststandards.com>



**Providers of Proficiency Testing**

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Code Designation

**USEPA WPCHEM**

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| 20/U29                        | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30                        | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34                        | Volatile Halocarbon Compounds                           |
| 20/U35                        | Volatile Aromatic Compounds                             |
| 20/U36                        | Chlorinated Pesticides                                  |
| 20/U37                        | Chlordane                                               |
| 20/U38                        | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39                        | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |
| 20/U42                        | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43                        | Total Hardness (as CaCO subscript 3)                    |
| 20/U44                        | Total Dissolved Solids                                  |
| 20/U48                        | Specific Conductance                                    |
| <b>USEPA WPCHEM/DMRQACHEM</b> |                                                         |
| 20/U28                        | Trace Metals                                            |
| 20/U31                        | Nutrients                                               |
| 20/U32                        | Total Residual Chlorine                                 |
| 20/U33                        | Cyanide                                                 |
| 20/U40                        | Total Phenolics                                         |
| 20/U41                        | Demands (Source: Glucose and glutamic acid)             |
| 20/U45                        | Non-Filterable Residue                                  |
| 20/U46                        | Oil and Grease                                          |
| 20/U47                        | pH                                                      |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I      |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II     |
| 20/U11 | Insecticides (Pesticides)                      |
| 20/U12 | Herbicides (Pesticides)                        |
| 20/U13 | Carbamate Pesticides                           |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)          |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors)      |
| 20/U16 | Toxaphene and Chlordane                        |
| 20/U18 | Adipate and Phthalate Esters                   |
| 20/U19 | Haloacetic Acids                               |
| 20/U20 | Chloral Hydrate                                |
| 20/U21 | Total Organic Carbon (TOC)                     |
| 20/U22 | Alkalinity (as CaCO subscript 3)               |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)         |
| 20/U24 | Total Filterable Residue                       |
| 20/U25 | pH                                             |
| 20/U26 | Turbidity                                      |

NVLAP LAB CODE 200391-0

**Microcheck, Inc.**

142 Gould Road  
Northfield, VT 05663  
Contact: Dr. Michael G. Sinclair  
Phone: 802-485-6600 X22  
Fax: 802-485-6100  
E-Mail: mike@microcheck.com  
URL: http://www.microcheck.com

**Providers of Proficiency Testing**

Accreditation Valid Through: December 31, 2001

NVLAP

Code Designation

**USEPA WSMICRO**

|        |                             |
|--------|-----------------------------|
| 20/U27 | Coliform (Presence/Absence) |
|--------|-----------------------------|

NVLAP LAB CODE 200392-0

**Spex Certiprep Inc.**

203 Norcross Avenue  
Metuchen, NJ 08840  
Contact: Dr. Vanaja Sivakumar  
Phone: 732-549-7144 x418  
Fax: 732-494-1747  
E-Mail: vsivakumar@spexcsp.com

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

NVLAP

Code Designation

**USEPA WPCHEM**

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| 20/U29                        | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30                        | Minerals: Chloride, Fluoride, and Sulfate           |
| 20/U42                        | Total Alkalinity (as CaCO subscript 3)              |
| 20/U43                        | Total Hardness (as CaCO subscript 3)                |
| 20/U44                        | Total Dissolved Solids                              |
| 20/U48                        | Specific Conductance                                |
| <b>USEPA WPCHEM/DMRQACHEM</b> |                                                     |
| 20/U28                        | Trace Metals                                        |
| 20/U31                        | Nutrients                                           |
| 20/U32                        | Total Residual Chlorine                             |
| 20/U33                        | Cyanide                                             |
| 20/U40                        | Total Phenolics                                     |
| 20/U41                        | Demands (Source: Glucose and glutamic acid)         |
| 20/U45                        | Non-Filterable Residue                              |
| 20/U46                        | Oil and Grease                                      |
| 20/U47                        | pH                                                  |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U21 | Total Organic Carbon (TOC)                     |
| 20/U22 | Alkalinity (as CaCO subscript 3)               |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)         |
| 20/U24 | Total Filterable Residue                       |



20/U25 pH  
20/U26 Turbidity

**NVLAP LAB CODE 200393-0**

**Resource Technology Corporation (RTC)**

2931 Soldier Springs Road  
P.O. Box 1346  
Laramie, WY 82070  
Contact: Mr. Robert D. Rucinski  
Phone: 307-742-5452  
Fax: 307-745-7936  
E-Mail: RRucinski@RT-Corp.com  
URL: <http://www.rt-corp.com>

**Providers of Proficiency Testing**

Accreditation Valid Through: March 31, 2001

**NVLAP**

| Code | Designation |
|------|-------------|
|------|-------------|

**USEPA WPCHEM**

|        |                                                     |
|--------|-----------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate           |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)              |
| 20/U43 | Total Hardness (as CaCO subscript 3)                |
| 20/U44 | Total Dissolved Solids                              |
| 20/U48 | Specific Conductance                                |

**USEPA WPCHEM/DMRQACHEM**

|        |                                             |
|--------|---------------------------------------------|
| 20/U28 | Trace Metals                                |
| 20/U31 | Nutrients                                   |
| 20/U32 | Total Residual Chlorine                     |
| 20/U33 | Cyanide                                     |
| 20/U40 | Total Phenolics                             |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue                      |
| 20/U46 | Oil and Grease                              |
| 20/U47 | pH                                          |

**USEPA WSCHEM**

|        |                                                |
|--------|------------------------------------------------|
| 20/U01 | Trace Metals                                   |
| 20/U02 | Sodium                                         |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite       |
| 20/U05 | Sulfate                                        |
| 20/U06 | Residual Free Chlorine                         |
| 20/U07 | Cyanide                                        |
| 20/U21 | Total Organic Carbon (TOC)                     |
| 20/U22 | Alkalinity (as CaCO subscript 3)               |
| 20/U23 | Calcium Hardness (as CaCO subscript 3)         |
| 20/U24 | Total Filterable Residue                       |
| 20/U25 | pH                                             |
| 20/U26 | Turbidity                                      |

**NVLAP LAB CODE 200395-0**

**Protocol Analytical Supplies, Inc.**

472 Lincoln Blvd.  
Middlesex, NJ 08846  
Contact: Mr. William H. Hahn, Jr.  
Phone: 732-627-0500  
Fax: 732-627-0979  
E-Mail: [bhahn@prostds.com](mailto:bhahn@prostds.com)

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Accreditation Valid Through: September 30, 2001

**NVLAP**

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**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |

**USEPA WSCHEM**

|        |                                            |
|--------|--------------------------------------------|
| 20/U09 | Volatile Organic Compounds (VOCs) Group I  |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides)                  |
| 20/U12 | Herbicides (Pesticides)                    |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH)      |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors)  |
| 20/U16 | Toxaphene and Chlordane                    |

**NVLAP LAB CODE 200440-0**

**NSI Solutions, Inc.**

7517 Precision Dr., #101  
Raleigh, NC 27617  
Contact: Mr. Mark R. Hammersla  
Phone: 919-957-9672  
Fax: 919-957-7562  
E-Mail: [mhammersla@nsi-es.com](mailto:mhammersla@nsi-es.com)  
URL: <http://www.nsi-es.com>

**Providers of Proficiency Testing**

Accreditation Valid Through: December 31, 2001

**NVLAP**

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**USEPA WPCHEM**

|        |                                                         |
|--------|---------------------------------------------------------|
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium     |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate               |
| 20/U34 | Volatile Halocarbon Compounds                           |
| 20/U35 | Volatile Aromatic Compounds                             |
| 20/U36 | Chlorinated Pesticides                                  |
| 20/U37 | Chlordane                                               |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil   |
| 20/U42 | Total Alkalinity (as CaCO subscript 3)                  |
| 20/U43 | Total Hardness (as CaCO subscript 3)                    |

**INDEX F. LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE- continued**

|                               |                                                |
|-------------------------------|------------------------------------------------|
| 20/U44                        | Total Dissolved Solids                         |
| 20/U48                        | Specific Conductance                           |
| <b>USEPA WPCHEM/DMRQACHEM</b> |                                                |
| 20/U28                        | Trace Metals                                   |
| 20/U31                        | Nutrients                                      |
| 20/U32                        | Total Residual Chlorine                        |
| 20/U33                        | Cyanide                                        |
| 20/U40                        | Total Phenolics                                |
| 20/U41                        | Demands (Source: Glucose and glutamic acid)    |
| 20/U45                        | Non-Filterable Residue                         |
| 20/U46                        | Oil and Grease                                 |
| 20/U47                        | pH                                             |
| <b>USEPA WSCHEM</b>           |                                                |
| 20/U01                        | Trace Metals                                   |
| 20/U02                        | Sodium                                         |
| 20/U03                        | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U05                        | Sulfate                                        |
| 20/U06                        | Residual Free Chlorine                         |
| 20/U07                        | Cyanide                                        |
| 20/U09                        | Volatile Organic Compounds (VOCs) Group I      |
| 20/U10                        | Volatile Organic Compounds (VOCs) Group II     |
| 20/U11                        | Insecticides (Pesticides)                      |
| 20/U14                        | Polycyclic Aromatic Hydrocarbon (PAH)          |
| 20/U15                        | Polychlorinated Biphenyls (PCBs/Aroclors)      |
| 20/U16                        | Toxaphene and Chlordane                        |
| 20/U18                        | Adipate and Phthalate Esters                   |
| 20/U21                        | Total Organic Carbon (TOC)                     |
| 20/U22                        | Alkalinity (as CaCO subscript 3)               |
| 20/U23                        | Calcium Hardness (as CaCO subscript 3)         |
| 20/U24                        | Total Filterable Residue                       |
| 20/U25                        | pH                                             |
| 20/U26                        | Turbidity                                      |

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**NVLAP LAB CODE 200461-0****Andover Corporation**

4 Commercial Drive  
Salem, NH 03079-2800  
Contact: Mr. Christopher A. Richards  
Phone: 603-893-6888  
Fax: 603-893-6508  
E-Mail: crichards@andcorp.com  
URL: <http://www.andcorp.com>

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|        |                    |
|--------|--------------------|
| 20/N01 | Visible Absorbance |
|--------|--------------------|

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**NVLAP LAB CODE 200462-0****Thermo Spectronic**

Mercers Row  
Cambridge CB5 8HY  
UNITED KINGDOM  
Contact: Mr. Douglas Irish  
Phone: 44 1223 446646  
Fax: 44 1223 446658  
E-Mail: [doug.irish@unicaminstruments.com](mailto:doug.irish@unicaminstruments.com)  
URL: <http://www.unicaminstruments.com>

**NIST Traceable Reference Materials**

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|-------------|--------------------|

|        |                    |
|--------|--------------------|
| 20/N01 | Visible Absorbance |
|--------|--------------------|

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**NVLAP LAB CODE 200466-0****Optiglass Ltd.**

42/54 Fowler Road  
Hainault Essex IG6 3UT  
UNITED KINGDOM  
Contact: Mr. John P. Hammond  
Phone: 44-208-500-1264  
Fax: 44-208-500-1955  
E-Mail: [TECH@optiglass.co.uk](mailto:TECH@optiglass.co.uk)

**NIST Traceable Reference Materials**

Accreditation Valid Through: December 31, 2001

**NVLAP**

| <i>Code</i> | <i>Designation</i> |
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|-------------|--------------------|

|        |                    |
|--------|--------------------|
| 20/N01 | Visible Absorbance |
|--------|--------------------|







**T**he National Institute of Standards and Technology was established in 1988 by Congress to "assist industry in the development of technology . . . needed to improve product quality, to modernize manufacturing processes, to ensure product reliability . . . and to facilitate rapid commercialization . . . of products based on new scientific discoveries."

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- Electronics and Photonics Technology

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- Regional Programs
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- Program Development

### **Electronics and Electrical Engineering Laboratory**

- Microelectronics
- Law Enforcement Standards
- Electricity
- Semiconductor Electronics
- Radio-Frequency Technology<sup>1</sup>
- Electromagnetic Technology<sup>1</sup>
- Optoelectronics<sup>1</sup>

### **Materials Science and Engineering Laboratory**

- Intelligent Processing of Materials
- Ceramics
- Materials Reliability<sup>1</sup>
- Polymers
- Metallurgy
- NIST Center for Neutron Research

### **Chemical Science and Technology Laboratory**

- Biotechnology
- Physical and Chemical Properties<sup>2</sup>
- Analytical Chemistry
- Process Measurements
- Surface and Microanalysis Science

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- Atomic Physics
- Optical Technology
- Ionizing Radiation
- Time and Frequency<sup>1</sup>
- Quantum Physics<sup>1</sup>

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- Manufacturing Metrology
- Intelligent Systems
- Fabrication Technology
- Manufacturing Systems Integration

### **Building and Fire Research Laboratory**

- Applied Economics
- Structures
- Building Materials
- Building Environment
- Fire Safety Engineering
- Fire Science

### **Information Technology Laboratory**

- Mathematical and Computational Sciences<sup>2</sup>
- Advanced Network Technologies
- Computer Security
- Information Access
- Convergent Information Systems
- Information Services and Computing
- Software Diagnostics and Conformance Testing
- Statistical Engineering

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<sup>1</sup> At Boulder, CO 80303.

<sup>2</sup> Some elements at Boulder, CO.

DEPARTMENT OF COMMERCE  
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY  
NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

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