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## IAS CALIBRATION PROGRAM FORMS

### 1.0 DIRECTIONS

Complete the IAS application (APPLICATION FOR LABORATORY ACCREDITATION). An authorized representative of the laboratory must sign the application.

Complete the enclosed forms and submit both the application and the calibration program forms, with required supporting documentation and application fee, to IAS.

Required supporting documentation may be provided electronically or in hard copy.

### 2.0 REQUIRED SUPPORTING DOCUMENTATION

**2.1 Quality Manual (QM)** for the laboratory. Manual must meet the requirements of ANS/ISO/IEC Standard 17025:2005.

**2.2 Quality Policy** for the laboratory, if not contained in the Quality Manual.

**2.3 Document Revision Master List** or equivalent method of identifying most current document revisions, if not contained in the Quality Manual.

**2.4 Evidence of method used to obtain uncertainty budget.**

**Note:** If the uncertainties are not yet known, appropriate studies to determine the uncertainties must be completed and evidence provided prior to assessment.

**2.5 Evidence of Proficiency Testing**, where proficiency testing is possible and has been performed.

**Note:** If proficiency testing has not been performed, but is available, then proficiency testing must be completed prior to accreditation being granted.

**2.6 Contact information** for the laboratory's authorized representative.

**2.7 Up-to-date organization chart** (or similar method of showing relationships and responsibilities of personnel) which identifies by name the key personnel, including authorized signatories, for each function. If the laboratory is part of a larger organization, clearly indicate its position and reporting relationships within the organization.

**2.8 Completed Technical Personnel Matrix**, including the names of technical personnel who perform the technique(s) or method(s) for which accreditation is sought. Specify test(s) and/or calibration(s) for which each is trained and which each is qualified to perform.

**2.9 List of Reference Standards and Working Standards** used to obtain and/or support the tests or calibrations for which accreditation is sought, along with all relevant information as in Tables 1 and 2 (attached).

**2.10 Calibration Procedures used by the laboratory.**

**2.11 Other supporting procedures and documents** as appropriate to assist with evaluation of the documented quality system.

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## IAS CALIBRATION PROGRAM

For IAS internal use:

Listing No. \_\_\_\_\_

1.0 Laboratory Name \_\_\_\_\_  
(*exactly* as it is on the APPLICATION FOR LABORATORY ACCREDITATION)

Please refer to the APPLICATION FOR LABORATORY ACCREDITATION for full laboratory contact details.

2.0 What kind of calibration service is provided? Check all that apply.

- \_\_\_\_\_ Only in-house calibrations are performed. This is an internal laboratory or calibration function, servicing a parent organization, whether in the laboratory or in the field.
- \_\_\_\_\_ Commercial calibration is offered. This is a third-party calibration provider servicing client(s) outside itself.
- \_\_\_\_\_ On-site calibration is offered. This includes third-party contract staffing for client location(s).
- \_\_\_\_\_ Mobile calibration is offered.

3.0 For what areas of measurement is accreditation being sought?

### MEASUREMENT AREA SELECTION

#### DIMENSIONAL

- |  |  |
|--|--|
| _____ Angular  | _____ Roundness                            |
| _____ Diameter   | _____ Spherical diameter (plug/ring gages) |
| _____ Gage blocks  | _____ Step gages                           |
| _____ Gears  | _____ Surface plates                       |
| _____ Laser frequency/wavelength                                 | _____ Surface texture                      |
| _____ Length (calipers, micrometers, extensometers, etc.)        | _____ Surveying rods and tapes             |
| _____ Line standards   | _____ Threaded plug and ring gages         |
| _____ Measuring wires and pin gages                              | _____ Two-dimensional gages                |
| _____ Optical reference planes (includes chrome-on-glass scales) | _____ Mass (weights)                       |
| _____ Ring gages   | _____ Other (please specify)               |

#### MECHANICAL

- |  |                                       |
|--|---------------------------------------|
| _____ Acoustic   | _____ Cryogenic flow rate             |
| _____ Acoustic emission transducers                                      | _____ Dead Weight Tester              |
| _____ Airspeed   | _____ Flow rate                       |
| _____ Coordinate Measuring Machines (CMMs—includes touch, vision, laser) | _____ Force (compression and tension) |
|  | _____ Hydrometers                     |

- \_\_\_\_\_ Mass (scales and balances)
- \_\_\_\_\_ Torque
- \_\_\_\_\_ Ultrasonic reference block
- \_\_\_\_\_ Ultrasonic transducer
- \_\_\_\_\_ Vacuum and pressure gages
- \_\_\_\_\_ Vibration

- \_\_\_\_\_ Vacuum and pressure transducers
- \_\_\_\_\_ Volume and density (includes pipettes)
- \_\_\_\_\_ Hardness (Rockwell and Brinnell)
- \_\_\_\_\_ Other (please specify)

**THERMAL**

- \_\_\_\_\_ Heat flux gages
- \_\_\_\_\_ Humidity (generate and measure)
- \_\_\_\_\_ Laboratory thermometers
- \_\_\_\_\_ Leak artifacts
- \_\_\_\_\_ Radiation thermometry

- \_\_\_\_\_ Resistance thermometry
- \_\_\_\_\_ Thermocouples and pyrometer indicators
- \_\_\_\_\_ Laser Thermometers
- \_\_\_\_\_ Ovens/Furnaces
- \_\_\_\_\_ Other (please specify)

**ELECTRICAL/DC/LOW FREQUENCY**

- \_\_\_\_\_ AC current
- \_\_\_\_\_ Capacitance dividers
- \_\_\_\_\_ DC current
- \_\_\_\_\_ DC resistance
- \_\_\_\_\_ DC voltage
- \_\_\_\_\_ High-voltage resistors
- \_\_\_\_\_ High current (above 50 amps)
- \_\_\_\_\_ Inductance dividers

- \_\_\_\_\_ LF AC voltage (AC voltage to 1 MHz)
- \_\_\_\_\_ LF capacitance
- \_\_\_\_\_ LF inductance
- \_\_\_\_\_ Mixed dividers
- \_\_\_\_\_ Phase meters
- \_\_\_\_\_ Pulse waveform
- \_\_\_\_\_ Resistance dividers
- \_\_\_\_\_ Voltage and current transformers
- \_\_\_\_\_ Other (please specify)

**TIME AND FREQUENCY**

- \_\_\_\_\_ Frequency generate/measure (to 500 MHz)
- \_\_\_\_\_ Modulation
- \_\_\_\_\_ Oscillator characterization

- \_\_\_\_\_ TDR/FDR
- \_\_\_\_\_ Time measurement
- \_\_\_\_\_ Other (please specify)

**RF/MICROWAVE AND ELECTROMAGNETICS**

- \_\_\_\_\_ Antenna and waveguide propagation
- \_\_\_\_\_ Coaxial air line standards
- \_\_\_\_\_ Coaxial/waveguide terminations
- \_\_\_\_\_ Dielectric materials
- \_\_\_\_\_ Electromagnetic field strength
- \_\_\_\_\_ Frequency generate/measure (above 500 MHz)
- \_\_\_\_\_ HF capacitance
- \_\_\_\_\_ High-frequency resistors
- \_\_\_\_\_ Modulation

- \_\_\_\_\_ Noise measurement
- \_\_\_\_\_ Q standards
- \_\_\_\_\_ RF-DC voltage/current converters
- \_\_\_\_\_ RF/microwave attenuators
- \_\_\_\_\_ RF/microwave directional couplers
- \_\_\_\_\_ RF/microwave phase shifters
- \_\_\_\_\_ RF/microwave power measurement
- \_\_\_\_\_ Other (please specify)

**OPTICAL RADIATION**

- \_\_\_\_\_ Detectors (180 nm and higher)
- \_\_\_\_\_ Fiber-optic signal characterization (generate and measure)

- \_\_\_\_\_ Laser power energy
- \_\_\_\_\_ Photometric

\_\_\_\_\_ Radiometric  
\_\_\_\_\_ Spectrophotometric

\_\_\_\_\_ Surface characterization/linear measurement  
(using optical or laser equipment)  
\_\_\_\_\_ Other (please specify)

**CHEMICAL/GAS**

\_\_\_\_\_ Conductivity Analyzer  
\_\_\_\_\_ Gas (O<sub>2</sub>, CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>S)  
\_\_\_\_\_ LEL (e.g., hydrogen, propane, methane)  
\_\_\_\_\_ pH

\_\_\_\_\_ ORP  
\_\_\_\_\_ Resistivity Analyzer  
\_\_\_\_\_ Other (please specify)

**4.0 Calibration Activity Facility Information**

Describe the typical environmental conditions in the laboratory and those encountered on-site, as applicable.

**4.1 Temperature**

Laboratory: Temperature range in the laboratory. If temperature is controlled, specify limits.

On-site: Temperature range typically encountered, annual basis.

**4.2 Humidity**

Laboratory: RH range in the laboratory. If RH is controlled, specify limits.

On-site: RH range typically encountered, annual basis.

**4.3 Power and Lighting**

Laboratory: Do you have filters? Frequency Correction? Uninterruptible Power Supply (UPS)? What type of lighting?

On-site: What power and lighting conditions are typically encountered?

#### **4.4 Shielding and Noise**

Laboratory: What kind of shielding is in place, if applicable? What is the noise level and source?

On-site: What is the noise level, and from what kinds of sources?

#### **4.5 Elevation and Atmospheric Pressure**

Laboratory: At what elevation above mean sea level is the laboratory located? What, if any, other atmospheric pressure considerations are encountered? What tests and/or calibrations are affected?

On-site: Elevation and atmospheric pressure conditions typically encountered, annual basis.

#### **4.6 Vibration**

Is vibration encountered? If so, from what sources? What tests and/or calibrations are affected?

#### **4.7 Dust**

What effect, if any, does dust have on the tests and/or calibrations performed? (Examples: dust effect on highly sensitive scales, or encountered on-site in desert-type area.)

**4.8 Other Environmental Conditions Encountered**

Describe any environmental conditions encountered, that have not been listed above, that can affect the quality of the test and/or calibration activity.

**5.0 Proposed Scope of Accreditation**

Please provide the information in sections 5.1 through 5.5 below using the attached forms and tables:

- 5.1 Each measurement area for which accreditation is sought. Calibration laboratories having multiple measurement areas will likely require more than one assessor.
- 5.2 The range and resolution of the instrument used for each discipline/parameter.
- 5.3 The Best Measurement Capability expressed as an uncertainty that will be claimed for each discipline/parameter and each range of measurement. The uncertainty provided must be valid for the entire range it is referenced to. Because of that requirement, most discipline/parameter will have multiple ranges listed.
- 5.4 Techniques, and/or equipment used to make the measurements, and any unique conditions required.
- 5.5 For on-site or mobile operations, identify which capabilities are typically performed outside the established laboratory, that is, in the mobile laboratory or at client locations. During the assessment, the assessor(s) will observe a sampling of the on-site and/or mobile operations. *This will require the assessor(s) to observe calibrations "in the field," that is, away from the established laboratory and at client locations.*

**Note: Classification of calibration disciplines**

IAS has classified calibration disciplines as follows:

Measurement Area: This is the top level term and refers to fields of calibration. Examples include dimensional, mechanical, electrical, etc.

Discipline: This is a mid-level term denoting major emphasis within a measurement area. Examples include force, pressure, current, etc.

Parameter: This is a low-level term denoting specific applications. Examples include calipers, scales and balances, CMM touch probes, etc.

\_\_\_\_\_  
Authorized Signature for Applicant

\_\_\_\_\_  
Name of Signer (type or print)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date







