



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

A1 Calibration Laboratory S.A.
TERRUM 25 condominium, Rio Segundo, Alajuela Costa Rica

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2005

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

Calibration of Dimensional, Electrical, Mechanical, Thermodynamic and Weighing Devices
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President/Operations Manager

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:

April 9, 2008

Issue Date:

August 13, 2014

Expiration Date:

August 31, 2016

Accreditation No.:

59381

Certificate No.:

L14-213

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjilabs.com



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Caliper ^{FO}	Up to 600 mm	(0.007 mm + 6L) μ m	Gage Blocks
Micrometer ^{FO} (inside)	38 mm to 305 mm	(0.000 7 mm + 6L) μ m	
Micrometer ^{FO} (outside)	Up to 400 mm	(0.000 7 mm + 6L) μ m	
Depth Micrometer ^{FO}	Up to 150 mm	(0.000 7 mm + 6L) μ m	
Dial Indicator ^{FO}	Up to 50 mm	(0.005 mm + 6L) μ m	
Steel Rule ^F	Up to 1000 mm	0.5 mm	Standard Steel Rule
Pin Gages ^F	0.1 mm to 25.4 mm	0.002 mm	Laser Micrometer
Measuring Tape ^F	Up to 12 000 mm	(10 mm + 6L) μ m	Standard Steel Rule
Protractor ^{FO}	0 ° to 90 °	0.6 °	Angle Gage Blocks

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration Indication & Control Equipment used Type T ^{FO}	-250 °C to 400 °C	0.7 °C	Process Calibrator 741
Temperature Calibration Indication & Control Equipment used Type E ^{FO}	-250 °C to 1 000 °C	0.5 °C	
Temperature Calibration Indication & Control Equipment used Type J ^{FO}	-210 °C to 1 200 °C	0.3 °C	
Temperature Calibration Indication & Control Equipment used Type K ^{FO}	-200 °C to 1 372 °C	0.4 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 100 Ω ^{FO}	-200 °C to 800 °C	0.23 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 3926, 100 Ω ^{FO}	-200 °C to 630 °C	0.12 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 3916, 100 Ω ^{FO}	-200 °C to 360 °C	0.25 °C	



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 200 Ω^{FO}	-200 °C to 630 °C	0.16 °C	Process Calibrator 741
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 500 Ω^{FO}	-200 °C to 630 °C	0.12 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 1000 Ω^{FO}	-200 °C to 630 °C	0.23 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt Ni 672, 120 Ω^{FO}	-200 °C to 260 °C	0.14 °C	
Temperature Calibration Indication & Control Equipment used RTD TypeCu 427, 10 Ω^{FO}	-100 °C to 260 °C	0.3 °C	
Temperature Calibration Indication & Control Equipment used Thermocouple Type T ^{FO}	-250 °C to 400 °C	0.7 °C	
Temperature Calibration Indication & Control Equipment used Thermocouple Type E ^{FO}	-250 °C to 1 000 °C	0.5 °C	
Temperature Calibration Indication & Control Equipment used Thermocouple Type J ^{FO}	-210 °C to 1 200 °C	0.3 °C	
Temperature Calibration Indication & Control Equipment used Thermocouple Type K ^{FO}	-200 °C to 1 372 °C	0.4 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 3926, 100 Ω^{FO}	-200 °C to 630 °C	0.5 °C	



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
 Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 100 Ω^{FO}	-200 °C to 800 °C	0.8 °C	Process Calibrator 741
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 200 Ω^{FO}	-200 °C to 630 °C	0.8 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 500 Ω^{FO}	-200 °C to 630 °C	0.8 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 385, 1000 Ω^{FO}	-200 °C to 630 °C	0.8 °C	
Temperature Calibration Indication & Control Equipment used RTD TypePt 3916, 100 Ω^{FO}	-200 °C to 360 °C	0.5 °C	
Temperature Calibration Indication & Control Equipment used RTD TypeCu 427, 10 Ω^{FO}	-100 °C to 260 °C	2 °C	
Equipment to Output DC Voltage ^{FO}	Up to 100 mV	5.8 μ V/V + .9 μ V	8.5 DMM 8081
	100 mV to 1 V	4.6 μ V/V + 2.5 μ V	
	1 V to 10 V	4.8 μ V/V + 4.5 μ V	
	10 V to 100 V	8.5 μ V/V + 72 μ V	
	100 V to 1 000 V	25 μ V/V + 250 μ V	
Equipment to Output AC Voltage at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	Up to 100 mV	86 μ V/V + 99 μ V	
40 Hz to 200 Hz	Up to 100 mV	86 μ V/V + 45 μ V	
200 Hz to 2 kHz	Up to 100 mV	86 μ V/V + 38 μ V	
2 kHz to 20 kHz	Up to 100 mV	86 μ V/V + 53 μ V	
20 kHz to 100 kHz	Up to 100 mV	86 μ V/V + 160 μ V	



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Voltage at the listed Frequencies ^{FO}			8.5 DMM 8081
10 Hz to 40 Hz	100 mV to 1 V	92 μ V/V + 50 μ V	
40 Hz to 200 Hz	100 mV to 1 V	92 μ V/V + 31 μ V	
200 Hz to 2 kHz	100 mV to 1 V	170 μ V/V + 31 μ V	
2 kHz to 20 kHz	100 mV to 1 V	350 μ V/V + 31 μ V	
20 kHz to 100 kHz	100 mV to 1 V	930 μ V/V + 31 μ V	
100 kHz to 1 MHz	100 mV to 1 V	3.5 mV/V + 120 μ V	
Equipment to Output AC Voltage at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	1 V to 10 V	92 μ V/V + 50 μ V	
40 Hz to 200 Hz	1 V to 10 V	92 μ V/V + 31 μ V	
200 Hz to 2 kHz	1 V to 10 V	170 μ V/V + 31 μ V	
2 kHz to 20 kHz	1 V to 10 V	350 μ V/V + 31 μ V	
20 kHz to 100 kHz	1 V to 10 V	930 μ V/V + 31 μ V	
100 kHz to 200 kHz	1 V to 10 V	3.5 mV/V + 120 μ V	
Equipment to Output AC Voltage at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	10 V to 100 V	450 μ V/V + 2.7 mV	
40 Hz to 200 Hz	10 V to 100 V	450 μ V/V + 2.7 mV	
200 Hz to 2 kHz	10 V to 100 V	450 μ V/V + 2.7 mV	
2 kHz to 20 kHz	10 V to 100 V	560 μ V/V + 2.7 mV	
20 kHz to 50 kHz	10 V to 100 V	1.50 mV/V + 2.7 mV	
Equipment to Output AC Voltage at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	100 V to 1 000 V	450 μ V/V + 2.7 mV	
40 Hz to 200 Hz	100 V to 1 000 V	450 μ V/V + 2.7 mV	
200 Hz to 2 kHz	100 V to 1 000 V	560 μ V/V + 2.7 mV	
2 kHz to 20 kHz	100 V to 1 000 V	1.50 mV/V + 2.7 mV	
20 kHz to 50 kHz	100 V to 1 000 V	4.70 mV/V + 2.7 mV	



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output DC Current ^{FO}	1 nA to 10 nA	4 μ A/A + 0.2 nA	8.5 DMM 8081
	10 nA to 100 nA	8 μ A/A + 0.8 nA	
	100 nA to 1 μ A	12 μ A/A + 1.2 nA	
	1 μ A to 10 μ A	24 μ A/A + 1.2 nA	
	10 μ A to 100 μ A	24 μ A/A + 1.0 nA	
	100 μ A to 1 mA	24 μ A/A + 7.1 nA	
	1 mA to 10 mA	24 μ A/A + 69 nA	
	10 mA to 100 mA	41 μ A/A + 680 nA	
	100 mA to 1 A	130 μ A/A + 13 μ A	
	1 A to 10 A	130 μ A/A + 26 μ A	
10 A to 30 A	130 μ A/A + 80 μ A		
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	Up to 100 μ A	47 μ A/A + 35 nA	
40 Hz to 1 kHz	Up to 100 μ A	18 μ A/A + 35 nA	
1 kHz to 10 kHz	Up to 100 μ A	7 μ A/A + 35 nA	
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	100 μ A to 1 mA	47 μ A/A + 35 nA	
40 Hz to 1 kHz	100 μ A to 1 mA	18 μ A/A + 35 nA	
1 kHz to 10 kHz	100 μ A to 1 mA	7 μ A/A + 35 nA	
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	1 mA to 10 mA	18 μ A/A + 240 nA	
40 Hz to 1 kHz	1 mA to 10 mA	7 μ A/A + 240 nA	
1 kHz to 10 kHz	1 mA to 10 mA	35 μ A/A + 240 nA	
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	10 mA to 100 mA	18 μ A/A + 38 μ A	
40 Hz to 1 kHz	10 mA to 100 mA	7 μ A/A + 43 μ A	
1 kHz to 10 kHz	10 mA to 100 mA	35 μ A/A + 24 μ A	
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	100 mA to 1 A	47 μ A/A + 240 μ A	
40 Hz to 1 kHz	100 mA to 1 A	19 μ A/A + 240 μ A	
1 kHz to 10 kHz	100 mA to 1 A	12 μ A/A + 240 μ A	
Equipment to Output AC Current at the listed Frequencies ^{FO}			
10 Hz to 40 Hz	1 A to 10 A	13 μ A/A + 150 μ A	
40 Hz to 1 kHz	1 A to 10 A	10 μ A/A + 150 μ A	



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Current at the listed Frequencies ^{FO}			8.5 DMM 8081
10 Hz to 40 Hz	10 A to 30 A	16 mA/A + 1.5 mA	
40 Hz to 1 kHz	10 A to 30 A	11 mA/A + 1.5 mA	
Equipment to Output Resistance ^{FO}	Up to 1 Ω	22 $\mu\Omega/\Omega$ + 80 $\mu\Omega$	
	1 Ω to 10 Ω	18 $\mu\Omega/\Omega$ + 130 $\mu\Omega$	
	10 Ω to 100 Ω	14 $\mu\Omega/\Omega$ + 1.1 m Ω	
	100 Ω to 1 k Ω	12 $\mu\Omega/\Omega$ + 1.0 m Ω	
	1 k Ω to 10 k Ω	12 $\mu\Omega/\Omega$ + 7.4 m Ω	
	10 k Ω to 100 k Ω	12 $\mu\Omega/\Omega$ + 320 m Ω	
	100 k Ω to 1 M Ω	18 $\mu\Omega/\Omega$ + 7.1 Ω	
	1 M Ω to 10 M Ω	59 $\mu\Omega/\Omega$ + 46 Ω	
	10 M Ω to 100 M Ω	58 $\mu\Omega/\Omega$ + 5.7 k Ω	
	100 M Ω to 1 G Ω	58 $\mu\Omega/\Omega$ + 0.11 M Ω	
	1 G Ω to 10 G Ω	58 $\mu\Omega/\Omega$ + 130 k Ω	
	10 G Ω to 100 G Ω	58 $\mu\Omega/\Omega$ + 1.1 M Ω	
Equipment to Output Capacitance ^{FO}	Up to 1 nF	2 % of reading + 0.025 nF	
	1 nF to 10 nF	1 % of reading + 0.05 nF	
	10 nF to 100 nF	1 % of reading + 0.5 nF	
	100 nF to 1 μ F	1 % of reading + 5 nF	
	1 μ F to 10 μ F	1 % of reading + 50 nF	
	10 μ F to 100 μ F	1 % of reading + 0.5 μ F	
	100 μ F to 1 mF	1 % of reading + 5 μ F	
	1 mF to 10 mF	1 % of reading + 50 μ F	
10 mF to 100 mF	1 % of reading + 0.2 mF		



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Mass, Force, and Weighing Devices

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Balance ^{FO}	Up to 100 g	(0.45 + 0.003Wt) mg	Class F1 Weight Set
	101 g to 300 g	(0.62 + 0.003Wt) mg	
	301 g to 1000 g	(1.2 + 0.003Wt) mg	
	1001 g to 2000 g	(10 + 0.003Wt) mg	
	2001 g to 10 000 g	(150 + 0.003Wt) mg	
	10 001 g to 30 000 g	(320 + 0.003Wt) mg	
	30 005 g to 60 000 g	(36 + 0.003Wt) g	
	60 005 g to 425 kg	(210 + 0.003Wt) g	

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Pressure Gauge, Differential Pressure Indicators, Sensors and Transducer ^{FO}	Up to 0.5 kPa	0.5 % of reading + 0.000 25 kPa	Microtector 1430
	0.5 kPa to 2.49 kPa	0.5 % of reading + 0.002 kPa	Heise HQS-1
	2.49 kPa to 6.89 kPa	0.5 % of reading + 0.01 kPa	DPI 150
	Up to 206 kPa	0.5 % of reading + 0.02 kPa	
Aneroid Sphygmomanometer and Sphygmomanometer with Mercury ^{FO}	Up to 40 kPa	0.5 % of reading + 0.13 kPa	DPI 104
Vacuum Gauges, Vacuum transducers and Sensors	-75.8 kPa to 0 kPa	0.5 % of reading + 0.01 kPa	DPI 150
Pressure Gauge, Sensors and Transducer ^{FO}	206 kPa to 689 kPa	0.5 % of reading + 0.07 kPa	UPM Module
	689 kPa to 2 068 kPa	0.5 % of reading + 0.28 kPa	
	2 068 kPa to 3 447 kPa	0.5 % of reading + 0.41 kPa	
	518 kPa to 103 421 kPa	0.5 % of reading + 168 kPa	Hydraulic Weigh Tester
Pressure Gauge ^{FO}	Up to 6 894 kPa	0.5 % of reading + 3.5 kPa	DPI 104
	6 894 kPa to 20 684 kPa	0.5 % of reading + 22 kPa	Module 700P29
	20 684 kPa to 34 473 kPa	0.5 % of reading + 42 kPa	Module 700P30
	34 473 kPa to 68 948 kPa	0.5 % of reading + 84 kPa	Module DPI104
Torque Wrench ^{FO}	0.6 Nm to 28.3 Nm	0.75 % of reading	Transducer 6151
	338.9 Nm to 2 711.6 Nm	0.75 % of reading	Transducer 6153



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Ovens, Furnaces ^{FO}	25 °C to 250 °C	0.08 °C	PTR 5615 / 1521
	250 °C to 420 °C	0.1 °C	
Liquid in Glass Thermometer ^{FO}	-25 °C to 0 °C	0.1 °C	PTR 5615 / 1521 Dry Well 650 S Liquid Bath TE-10D
	0 °C to 50 °C	0.1 °C	
	50 °C to 100 °C	0.1 °C	
	100 °C to 300 °C	0.3 °C	
Bimetallic Thermometer ^{FO}	50 °C to 100 °C	0.2 °C	
	50 °C to 100 °C	0.3 °C	
Thermometers with Thermocouple Type T ^{FO}	-20 °C to 400 °C	1 °C	
Thermometers with Thermocouple Type E, J, K ^{FO}	-20 °C to 650 °C	1 °C	
Digital Infrared Thermometer ^{FO}	-25 °C to 35 °C	1.8 °C	Liquid Bath TE-10D with blackbody target with TC Type K
	35 °C to 400 °C	2 °C	Blackbody Source
	400 °C to 600 °C	3 °C	

Time & Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Time and Frequency Simulation ^{FO}	1 μ Hz to 80 MHz	3×10^{-5} Hz/Hz	Function Generator 4086
	Up to 2.4 GHz	60×10^{-6} Hz/Hz	Frequency Counter C3100



Certificate of Accreditation: Supplement

A1 Calibration Laboratory S.A.

TERRUM 25 condominium, Rio Segunda, Alajuela Costa Rica
Ricardo Salazar Phone: 506-244-4010

Accreditation is granted to the facility to perform the following calibrations:

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor k (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.
2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.
3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer^F would mean that the laboratory performs this calibration at its fixed location.
4. The presence of a superscript O means that the laboratory performs calibration of the indicated parameter onsite at customer locations. Example: Outside Micrometer^O would mean that the laboratory performs this calibration onsite at the customer's location.
5. The presence of a superscript FO means that the laboratory performs calibration of the indicated parameter both at its fixed location and onsite at customer locations. Example: Outside Micrometer^{FO} would mean that the laboratory performs this calibration at its fixed location and onsite at customer locations.
6. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratories fixed location for similar calibrations. This is due to the effects of transportation of the standards and equipment and upon environmental conditions at the customer site which are typically not controlled as closely as at the laboratories fixed location.
7. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.
8. The term Wt represents weight in pounds or grams (including SI multiple and submultiple units) appropriate to the uncertainty statement.