



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

### **HQ – ETALONET, S.A. de C.V.**

*Pasaje de los Lirios #3238, Col. Riberas del Rio  
Guadalupe Nuevo León, México C.P. 67160*

### **Site – Etalons, S.A. de C.V.**

*Rio Panuco #3508, Col. Villa Los Pinos  
Monterrey, Nuevo León, México C.P. 64770*

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

### **ISO/IEC 17025:2017**

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 April 2017):

***Dimensional, Time & Frequency, Mass, Force and Weighing Devices,  
Mechanical, Thermodynamic, Chemical and Electrical Calibration  
(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

*Initial Accreditation Date:*

August 14, 2012

*Issue Date:*

August 31, 2022

*Expiration Date:*

October 31, 2024

*Accreditation No.:*

73706

*Certificate No.:*

L22-582

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

*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.pjlab.com](http://www.pjlab.com)*



## Certificate of Accreditation: Supplement

### Site – Etalons, S.A. de C.V.

Rio Panuco #3508, Col. Villa Los Pinos  
 Monterrey, Nuevo León, México C.P. 64770  
 Contact Name: Roberto Benitez Phone: 818-398-2950

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
Micrometers <sup>FO</sup>	0.05 in to 24 in	(52 + 16L) $\mu$ m	Grade 1 Gage Blocks JIS B 7502
Micrometers <sup>FO</sup>	2.5 mm to 25 mm	(0.88+1L) $\mu$ m	Grade 0 Gage Blocks JIS B 7502
Calipers <sup>FO</sup>	0.05 in to 24 in	(392 + 16L) $\mu$ m	Grade 1 Gage Blocks NMX-CH-002-IMNC
Indicators <sup>FO</sup>	0.005 in to 2 in	(384 + 16L) $\mu$ m	Micrometer head Cal JIS B 7503
Height Gages <sup>FO</sup>	0.05 in to 24 in	(392 + 16L) $\mu$ m	Grade 1 Gage Blocks JIS B 7517
Rules and Tapes <sup>FO</sup>	2 mm to 1 000 mm	(570 + 0.24L) $\mu$ m	Magnifier and Linear Scales JIS B 7516
Thread Plug Gage Pitch Diameter <sup>FO</sup>	0-80 to 1-12	210 $\mu$ m	Three Wire Method and Digital Micrometer ANSI/ASME B1.2

#### Chemical

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
pH Meter Fixed Point <sup>FO</sup>	4 pH	0.02 pH	Standard Solutions NMX-AA-093-SCFI
	7 pH	0.02 pH	
	10 pH	0.02 pH	
Conductivity Meter Fixed Point <sup>FO</sup>	0.1 mS	1.6 $\mu$ S	
	1.44 mS	14 $\mu$ S	
	12.88 mS	130 $\mu$ S	
Gas Flow Meter <sup>FO</sup>	2.5 cc/min to 250 cc/min	5.4 % of reading	TSI 4140 CENAM Technical Guide

#### 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
Analytical Balances <sup>FO</sup>	1 mg to 100 g	0.58 mg	Class 1 and Class F NOM-CH-10-SCFI
	100 g to 20 kg	1.2 g	
	20 kg to 1 000 kg	0.12 kg	
Weight Devices <sup>FO</sup>	20 kg	3.2 g	Weight 20 kg Class M3 PPC-1-MAS-05 NOM-038-SCFI



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#### Mass, Force and Weighing Devices

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Weight Devices <sup>FO</sup>	5 kg	0.06 g	Weights Class F OIML R111 NOM-038-SCFI
Force Gauge - Tension <sup>FO</sup>	5 kgf to 250 kgf	0.7 kgf	Hanging Method Class M2 ISO 7500
	4.59 lbf to 100 lbf	5.8 % of reading	Load Cell Strain Sense SST101UF ASTM-E4-10
	100 lbf to 1 000 lbf	0.48 % of reading	Load Cell Strain Sense SST102UF ASTM-E4-10
	1 000 lbf to 10 000 lbf	1.1 % of reading	Load Cell Strain Sense SST103UF ASTM-E4-10
Force Gauge - Compression <sup>FO</sup>	9.41 lbf to 100 lbf	5.8 % of reading	Load Cell Strain Sense SST101UF ASTM-E4-10
	100 lbf to 1 000 lbf	0.55 % of reading	Load Cell Strain Sense SST102UF ASTM-E4-10
	1 000 lbf to 10 000 lbf	1.1 % of reading	Load Cell Strain Sense SST103UF ASTM-E4-10

#### 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
Patient Monitors <sup>O</sup> Non-Invasive Blood Pressure	30 mmHg to 255 mmHg	0.8 mmHg	Prosim 8, Prosim SPOT Light SpO2 Fluke PPC-1-BIO-2 NOM-009-SCFI
Baumanometers <sup>O</sup>	30 mmHg to 300 mmHg	0.8 mmHg	Prosim 8 Fluke PPC-1-BIO-4 NOM-009-SCFI
Torque Tester Analog/Digital <sup>FO</sup>	50 lbf-ft to 1 000 lbf-ft	0.25 % of reading	Torque Cell PPC-1-TOR-01 B107.14M



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#### Mechanical

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Torque Tools <sup>FO</sup>	25 lbf-in to 250 lbf-in	1 % of reading	Load Cell Mountz BMX-250i ANSI/ASME B107.14M
	10 lbf-ft to 100 lbf-ft	1 % of reading	Load Cell Mountz BMX -100F ANSI/ASME B107.14M
Torque Tools <sup>FO</sup>	100 lbf-ft to 1 000 lbf-ft	1 % of reading	Load Cell Mountz BMX-1 000F ANSI/ASME B107.14
Pressure Gauge <sup>FO</sup>	3 psi to 300 psi	0.25 % of reading	Druck Pressure Calibrator PROY-NMX-CH-201-IMNC
	300 psi to 3 000 psi	0.25 % of reading	Crystal Calibrator PROY-NMX-CH-201-IMNC
Vacuum Gauge <sup>FO</sup>	-11 psi to 0.5 psi	0.06 psi	Druck Pressure Calibrator PROY-NMX-CH-201-IMNC
Single Delivery Mechanical Piston Dispensers <sup>FO</sup>	1 mL to 200 mL	0.2 % of reading	Analytical Balance SARTORIUS, LA230S Mettler Toledo, XP 5003SDR NMX-CH-049- IMNC
Diffusers <sup>FO</sup>	1 mL to 100 mL	0.2 % of reading	
Pipettes <sup>FO</sup>	1 mL to 10 mL	0.015 % of reading	
	10 mL to 100 mL	0.2 % of reading	
Volumetric Flasks <sup>FO</sup>	1 mL to 5 L	0.1 % of reading	
Burettes <sup>FO</sup>	1 mL to 100 mL	0.07 % of reading	
	100 mL to 1 L	0.01 % of reading	
Test Tubes <sup>FO</sup>	25 mL to 500 mL	0.1 % of reading	
Volumetric Graduated Neck Flask <sup>FO</sup>	1 L to 20 L	0.015 % of reading	Balance SARTORIUS 3808 MP8-1 Analytical Balance Mettler Toledo, XP 5003SDR NMX-CH-049- IMNC
Pycnometers Gay-Lussac <sup>FO</sup>	10 mL to 100 mL	0.005 % of reading	Analytical Balance Mettler Toledo, XP 5003SDR NMX-CH-049- IMNC

#### Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICESIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Direct Reading Thermometer <sup>FO</sup>	40 °C to 200 °C	0.31 °C	Micro Bath 6102 NMX-CH-70-SCFI



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### Thermodynamic

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Direct Reading Thermometer <sup>FO</sup>	-15 °C to 350 °C	0.68 °C	Hart Calibrator 9009 NMX-CH-70-SCFI
Infrared Temperature Measuring Instrument <sup>FO</sup>	50 °C to 450 °C	0.81 °C	Hart Calibrator 9132 PPC-1-TEM-05 CCT-W65 Radiation Thermometry
Hygometer <sup>FO</sup>	5 % RH to 95 % RH	1.6 % RH	Rotronic Hygro P2 PPC-1-TEM-06 CENAM Technical Guide
Temperature Chamber <sup>F</sup>	-50 °C to 300 °C	0.65 °C	Data Logger Manufacturer Etalons Model: ETA-DAQ-01 AMS2750
Relative Humidity Chamber <sup>F</sup>	35 % RH to 95 % RH	1.2 % RH	Rotronic Hydropalm HP-22A AMS2750

### Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICESIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output DC Voltage <sup>FO</sup>	9 $\mu$ V to 330 mV	81 $\mu$ V/V + 3 $\mu$ V	Fluke 5500A Euramet-cg-5
	330 mV to 3 V	62 $\mu$ V/V + 5 $\mu$ V	
	3 V to 30 V	62 $\mu$ V/V + 50 $\mu$ V	
	30 V to 30 V	67 $\mu$ V/V + 1.5 $\mu$ V	
	30 V to 1 000 V	67 $\mu$ V/V + 1.5 mV	
Equipment to Output DC Voltage <sup>FO</sup>	30 mV to 1 000 V	0.1 % of Output + 10 mV	Fluke 45 PPC-1-ELE-08 EN 60060-2
	1 kV to 30 kV	0.6 % of Output + 30 V	ESH Electrostatic Voltmeter PROY-NMX-CH-515-1-IMNC
Equipment to Output DC Current <sup>FO</sup>	0.33 A to 11 A	0.097 % of Output + 160 $\mu$ A	Fluke 5500 A and 50 Turn Coil ANSI C39.1: 81



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Clamp-On Meters <sup>FO</sup>	3.3 mA to 550 A	0.35 % of Output + 0.018A	Fluke 5500 A and 50 Turn Coil ANSI C39.1: 81
Equipment to Measure DC Power <sup>FO</sup>	0.1 mW to 11.22 kW	0.14 % of Output + 0.45 $\mu$ W	Fluke 5500 A Euramet-cg-15
Equipment to Measure Resistance <sup>FO</sup>	0.25 $\Omega$ to 10.99 $\Omega$	0.013 % of Output + 0.008 $\Omega$	
	11 $\Omega$ to 329.999 $\Omega$	0.01 % of Output + 0.015 $\Omega$	
	330 $\Omega$ to 3.299 99 k $\Omega$	0.01 % of Output + 0.06 $\Omega$	
	3.3 k $\Omega$ to 32.999 9 k $\Omega$	0.01 % of Output + 0.6 $\Omega$	
	33 k $\Omega$ to 329.999 k $\Omega$	0.013 % of Output + 6 $\Omega$	
	330 k $\Omega$ to 3.299 99 M $\Omega$	0.017 % of Output + 55 $\Omega$	
	3.3 M $\Omega$ to 32.999 9 M $\Omega$	0.11 % of Output + 550 $\Omega$	
	33 M $\Omega$ to 109.999 M $\Omega$	0.57 % of Output + 5.5 k $\Omega$	
	110 M $\Omega$ to 330 M $\Omega$	0.57 % of Output + 17 k $\Omega$	
1 $\Omega$ to 1.111 11 M $\Omega$	0.01 % of Output + 2 m $\Omega$	GenRad 1433B IET VRS-100-101K-BP	
1 k $\Omega$ to 1 T $\Omega$	2 % of Output		
Equipment to Measure Capacitance @ 1 kHz <sup>FO</sup>	0.33 nF to 0.499 9 nF	0.62 % of Output + 16 pF	Fluke 5500A Euramet-cg-15
	0.5 nF to 1.099 9 nF	0.6 % of Output + 12 pF	
	1.1 nF to 3.299 9 nF	0.58 % of Output + 12 pF	
	3.3 nF to 10.999 nF	0.49 % of Output + 25 pF	
	11 nF to 32.999 nF	0.29 % of Output + 120 pF	
	33 nF to 109.99 nF	0.29 % of Output + 120 pF	
	110 nF to 329.99 nF	0.33 % of Output + 300 pF	
	0.33 nF to 1.099 9 $\mu$ F	0.28 % of Output + 1.6 nF	
	1.1 $\mu$ F to 3.299 9 $\mu$ F	0.42 % of Output + 3.5 nF	
	3.3 $\mu$ F to 10.999 $\mu$ F	0.42 % of Output + 12 nF	
	11 $\mu$ F to 32.999 $\mu$ F	0.5 % of Output + 32 nF	
	33 $\mu$ F to 109.99 $\mu$ F	0.63 % of Output + 0.13 $\mu$ F	
	110 $\mu$ F to 329.99 $\mu$ F	0.82 % of Output + 1.6 $\mu$ F	
	330 $\mu$ F to 1.1 mF	1.3 % of Output + 0.16 $\mu$ F	
	1 pF to 1.1 $\mu$ F	0.5 % of Output + 5 pF	GenRad 1412BCPPC-1-ELE-09 CENAM Technical Guide



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### Electrical

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Equipment to Measure Capacitance to Fixed Points <sup>FO</sup>	0.001 $\mu$ F	0.5 % of Output	GenRad 1409F PPC-1-ELE-09 CENAM Technical Guide
	1 $\mu$ F	0.06 % of Output	GenRad 1409Y PPC-1-ELE-09 ANSI-C-39-6
Equipment to Measure Inductance <sup>FO</sup> Fixed Point @ 1 kHz <sup>FO</sup>	200 $\mu$ H	0.29 % of Output	GenRad 1482C PPC-1-ELE-09 ANSI-C-39-6
	2 mH	0.12 % of Output	GenRad 1482F PPC-1-ELE-09 ANSI-C-39-6
	2 H	0.12 % of Output	GenRad 1482Q PPC-1-ELE-09 ANSI-C-39-6
Equipment to Measure AC Voltage At the listed frequencies <sup>FO</sup>			Fluke 5500A Euramet-cg 15
10 Hz to 45 Hz	33 mV to 329.999 mV	960 Mv	
45 Hz to 10 kHz	33 mV to 329.999 mV	260 $\mu$ V	
10 kHz to 20 kHz	33 mV to 329.999 mV	350 $\mu$ V	
20 kHz to 50 kHz	33 mV to 329.999 mV	680 $\mu$ V	
50 kHz to 100 kHz	33 mV to 329.999 mV	1 100 $\mu$ V	
100 kHz to 500 kHz	33 mV to 329.999 mV	2 700 $\mu$ V	
Equipment to Measure AC Voltage At the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	0.33 V to 3.299 99 V	10 mV	
45 Hz to 10 kHz	0.33 V to 3.299 99 V	19 mV	
10 kHz to 20 kHz	0.33 V to 3.299 99 V	3 mV	
20 kHz to 50 kHz	0.33 V to 3.299 99 V	10 mV	
50 kHz to 100 kHz	0.33 V to 3.299 99 V	10 mV	
100 kHz to 500 kHz	0.33 V to 3.299 99 V	23 mV	



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Equipment to Measure AC Voltage At the listed frequencies <sup>FO</sup>			Fluke 5500A Euramet-cg 15
10 Hz to 45 Hz	3.3 V to 32.999 9 V	60 mV	
45 Hz to 10 kHz	3.3 V to 32.999 9 V	20 mV	
10 kHz to 20 kHz	3.3 V to 32.999 9 V	30 mV	
20 kHz to 50 kHz	0.33 V to 3.299 99 V	10 mV	
50 kHz to 100 kHz	0.33 V to 3.299 99 V	10 mV	
100 kHz to 500 kHz	0.33 V to 3.299 99 V	23 mV	
Equipment to Measure AC Voltage At the listed frequencies <sup>FO</sup>			Fluke 45 Euramet-cg-15
20 kHz to 50 kHz	3.3 V to 32.999 9 V	80 mV	
50 kHz to 100 kHz	3.3 V to 32.999 9 V	190 mV	
45 Hz to 1 kHz	33 V to 329.999 V	580 mV	
1 kHz to 10 kHz	33 V to 329.999 V	300 mV	
10 kHz to 20 kHz	33 V to 329.999 V	2 300 mV	
45 Hz to 1 kHz	330 V to 1 000 V	2 200 mV	
1 kHz to 10 kHz	330 V to 1 000 V	2 600 mV	
Equipment to Measure AC Voltage At the listed frequencies <sup>FO</sup>			Electrostatic Voltmeter PPC-1-ELE-03 EN 60060-2
45 Hz to 20 kHz	675 mV to 750 V	0.07 % of reading + 225 mV	
45 Hz to 10 kHz	0.75 kV to 30 kV	0.7 % of reading + 30 V	Fluke 5500A and 50 Tum Coil ANSI C39.1: 81
Equipment to Output AC Current At the listed frequencies <sup>FO</sup>			
10 Hz to 10 kHz	0.029 mA to 0.329 9 mA	0.14 % of reading + 0.25 µA	
10 Hz to 10 kHz	0.33 mA to 3.299 9 mA	0.12 % of reading + 0.3 µA	
10 Hz to 10 kHz	3.3 mA to 32.999 mA	0.1 % of reading + 3 µA	
10 Hz to 10 kHz	33 mA to 329.99 mA	0.1 % of reading + 30 µA	
10 Hz to 5 kHz	0.33 A to 2.199 99 A	0.16 % of reading + 300 µA	
10 Hz to 3 kHz	2.2 A to 11 A	0.1 % of reading + 2 µA	





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Clamp-On Meters <sup>FO</sup> 46 Hz to 65 Hz	10 A to 550 A	0.37 % of reading + 0.04 $\mu$ A	Fluke 5500A and 50 Tum Coil ANSI C39.1: 81
AC Power Generate – Up to 1000 V @ 60 Hz <sup>FO</sup>	0.1 mW to 11.22 kW	0.18 % of Output + 0.16 mW	Fluke 5500 A PPC-1-ELE-10 ANSI-C39-1
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385, 100 $\Omega$ <sup>FO</sup>	-200 °C to -80 °C	0.19 °C	Fluke 5500A and Fluke 741B Electric Simulation of RTD Output PPC-1-TER-04 ANSI-C39.6
	-80 °C to 0 °C	0.19 °C	
	0 °C to 100 °C	0.2 °C	
	100 °C to 300 °C	0.21 °C	
	300 °C to 400 °C	0.31 °C	
	400 °C to 630 °C	0.45 °C	
	630 °C to 800 °C	0.32 °C	
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 3916, 100 $\Omega$ <sup>FO</sup>	-200 °C to -80 °C	0.34 °C	
	-80 °C to 0 °C	0.21 °C	
	0 °C to 100 °C	0.19 °C	
	100 °C to 300 °C	0.15 °C	
	300 °C to 400 °C	0.21 °C	
	400 °C to 630 °C	0.29 °C	
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 3926, 100 $\Omega$ <sup>FO</sup>	-200 °C to -80 °C	0.21 °C	
	-80 °C to 0 °C	0.19 °C	
	0 °C to 100 °C	0.15 °C	
	100 °C to 300 °C	0.16 °C	
	300 °C to 400 °C	0.17 °C	
	400 °C to 630 °C	0.23 °C	
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385, 200 $\Omega$ <sup>FO</sup>	-200 °C to -80 °C	0.18 °C	
	-80 °C to 0 °C	0.13 °C	
	0 °C to 100 °C	0.18 °C	
	100 °C to 260 °C	0.21 °C	
	260 °C to 300 °C	0.19 °C	
	300 °C to 400 °C	0.32 °C	
	400 °C to 600 °C	0.26 °C	



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Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385, 500 $\Omega^{FO}$	-200 °C to -80 °C	0.29 °C	Fluke 5500A and Fluke 741B Electric Simulation of RTD Output PPC-1-TER-04 ANSI-C39.6
	-80 °C to 0 °C	0.21 °C	
	0 °C to 100 °C	0.19 °C	
	100 °C to 260 °C	0.14 °C	
	300 °C to 400 °C	0.15 °C	
	400 °C to 600 °C	0.31 °C	
	600 °C to 630 °C	0.22 °C	
Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385, 1000 $\Omega^{FO}$	-200 °C to -80 °C	0.02 °C	
	-80 °C to 0 °C	0.13 °C	
	0 °C to 100 °C	0.13 °C	
	100 °C to 260 °C	0.19 °C	
	260 °C to 360 °C	0.14 °C	
	300 °C to 400 °C	0.15 °C	
	400 °C to 600 °C	0.15 °C	
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type E <sup>FO</sup>	-250 °C to -100 °C	0.58 °C	Fluke 5500A and Fluke 741B Electric Simulation of Thermocouple Output PPC-1-TER-04 ANSI-C39.6
	-100 °C to -25 °C	0.19 °C	
	-25 °C to 350 °C	0.17 °C	
	350 °C to 650 °C	0.19 °C	
	650 °C to 1 000 °C	0.26 °C	
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type J <sup>FO</sup>	-210 °C to -100 °C	0.32 °C	
	-100 °C to -30 °C	0.19 °C	
	-30 °C to 150 °C	0.17 °C	
	150 °C to 760 °C	0.19 °C	
	760 °C to 1 200 °C	0.28 °C	
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type K <sup>FO</sup>	-200 °C to -100 °C	0.39 °C	
	-100 °C to -25 °C	0.22 °C	
	-30 °C to 120 °C	0.19 °C	
	120 °C to 1 000 °C	0.31 °C	
	1 000 °C to 1 372 °C	0.47 °C	



# Certificate of Accreditation: Supplement

## Site – Etalons, S.A. de C.V.

Rio Panuco #3508, Col. Villa Los Pinos  
 Monterrey, Nuevo León, México C.P. 64770  
 Contact Name: Roberto Benitez Phone: 818-398-2950

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

### Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICESIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSEDAS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type R <sup>FO</sup>	0 °C to 250 °C	0.66 °C	Fluke 5500A and Fluke 741B Electric Simulation of Thermocouple Output PPC-1-TER-04 ANSI-C39.6
	250 °C to 400 °C	0.41 °C	
	400 °C to 1 000 °C	0.39 °C	
	1 000 °C to 1 767 °C	0.47 °C	
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type S <sup>FO</sup>	0 °C to 250 °C	0.55 °C	
	250 °C to 400 °C	0.44 °C	
	400 °C to 1 000 °C	0.44 °C	
	1 000 °C to 1 767 °C	0.55 °C	
Temperature Calibration, Indication and Control Equipment used with of Thermocouple Type T <sup>FO</sup>	-250 °C to -150 °C	0.76 °C	
	-150 °C to 0 °C	0.29 °C	
	0 °C to 120 °C	0.2 °C	
	120 °C to 400 °C	0.18 °C	

### Time & Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output Frequency <sup>FO</sup>	0.01 Hz to 2 MHz	0.7 % of reading	Oscilloscope ANSI-C39.6
Timers <sup>FO</sup>	3 600 S	0.6 s	Stopwatch PPC-1-TIE-01 NIST Handbook 105-5
Patient Monitors <sup>O</sup> ECG: Heart Rate (Beats per minute)	ECG: 30 bpm to 250 bpm	ECG: 0.7 bpm	Prosim 8, Prosim SPOT Light SpO2 Fluke PPC-1-BIO-2 IEC 62353
Patient Monitors <sup>O</sup> Oximetry: Oxygen Saturation (SpO <sub>2</sub> )	85 % SpO <sub>2</sub> to 100 % SpO <sub>2</sub>	1.4 % SpO <sub>2</sub>	Prosim 8, Prosim SPOT Light SpO2 Fluke PPC-1-BIO-3
Oximeters <sup>O</sup> Oximetry: Oxygen Saturation (SpO <sub>2</sub> )	85 % SpO2 to 100 % SpO2	1.4 % SpO2	
Oximeters <sup>O</sup> Pulse: Heart Rate	30 bpm to 250 bpm	0.7 bpm	Prosim 8 Fluke PPC-1-BIO-1 IEC 62353
Electrocardiograph <sup>O</sup>	30 bpm to 250 bpm	0.7 bpm	



## *Certificate of Accreditation: Supplement*

### **Site – Etalons, S.A. de C.V.**

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Monterrey, Nuevo León, México C.P. 64770  
Contact Name: Roberto Benitez Phone: 818-398-2950

*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<sup>F</sup> 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<sup>O</sup> 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<sup>FO</sup> 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.