



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Twilight, S.A. de C.V.

***Alfonso Reyes # 2612, 704, Col. Del Paseo Residencial
Monterrey, Nuevo León, México. C.P. 64920***

*(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, Optical, Acoustic, Thermodynamic, Mechanical, Mass, Force and
Weighing Devices, Chemical, Time and Frequency 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:

Initial Accreditation Date:

March 12, 2015

Issue Date:

May 31, 2023

Expiration Date:

July 31, 2025

Accreditation No.:

83078

Certificate No.:

L23-438

Tracy Szerszen

President

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*



Certificate of Accreditation: Supplement

Twilight, S.A. de C.V.

Alfonso Reyes # 2612, 704, Col. Del Paseo Residencial
 Monterrey, Nuevo León, México. C.P. 64920
 Contact Name: Josefina Torres Lara Phone: 818-173-4300

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
Outside Micrometer ^F	1.27 mm to 203.3 mm	$(2 \times 10^{-4} + 3 \times 10^{-6}L)$ mm	Gauge Blocks Grade 0 JIS B 7502
Caliper ^F	1.27 mm to 457.2 mm	$(0.01 + 0.008L/457.2)$ mm	Gauge Blocks Grade 0 JIS B 7507
Height Gauge ^F	1.27 mm to 304.8 mm	0.007 1 mm	Gauge Blocks Grade 0 JIS B 7517
Dial Thickness Gauge ^F	0.022 mm to 12.255 mm	0.0017 mm	Foil Thickness Standards ASTM D 7091 ASTM E 376
Coating Thickness Gauge Ferrous Base ^F	0.022 mm to 12.255 mm	1.4 μ m	
Coating Thickness Gauge Non-Ferrous Base ^F	0.022 mm to 12.255 mm	1.4 μ m	
Coating Thickness Gauge RTR ^F	0.023 mm to 12.255 mm	0.19 μ m	Foil Thickness Standards ASTM D 4417
Ultrasonic Thickness Gauge ^F	1.27 mm to 100 mm	0.014 mm	Block Set Grade 0 ASTM E797/ E797M
Welding Meter ^F	1.27 mm to 50.8 mm	0.004 6 mm	Set Block, Grade 0, Rule Microscope JIS B 7517, JIS B 7516 CEM-DI-012
Angle Meter ^F	10° to 180°	1.7°	Angular Set Blocks ASME Y14.5
Lenght Meter ^F (Distance Measurement)	0.5 m to 30 m	0.000 84 m	Distance Meter Comparison Brand LEICA Mod. D810 ISO 16331-1
Ruler ^F	1 mm to 1 000 mm	0.82 mm	Rules, Microscope JIS B 7516 CEM-DI-012
Tapes ^F	30 m Maximum	$(8.2 \times 10^{-4} + 2 \times 10^{-5}L)$ m	Ruler CEM DI-011 NOM-046-SCFI
Surface Profilometer ^F	25.4 μ m to 635 μ m	2.2 μ m	Shims ASTM D4417
Film Thickness Gages ^F	0.001 mm to 25 mm	0.001 2 mm	Micrometer (Res.= 0.000 1 mm) JIS B 7524
Thread Plug Gages ^F Pitch Diameter	0-80 to 4-12	0.001 4 mm	Micrometer (Res.= 0.001 mm) ANSI/ ASME B1.2 ASME B1.20.1



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Digital Indicator ^F	0.1 mm to 100 mm	0.000 61 mm	Dial Indicator Test Machine JIS B 7503, DIN 878, DIN 2270, ASME B89.1 JJG34
Dial Indicator ^F	0.1 mm to 100 mm	0.005 8 mm	
Step Block ^F	0.254 mm to 25.4 mm	0.001 2 mm	Micrometer (Res.= 0.000 1 mm) ASTM E797/E797M Procedure 2586

Optical

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
Luxometer ^F	20 lux to 7 000 lux	($1.62 \times 10^{-1} + 2.26 \times 10^{-2}L$) lux	Lux Meter Comparison CNM-MFO-PT-004
Gloss / Specular Reflectance ^{F0}	Angle of Incline		Glossmeter ASTM D523
	$\rho(e): 20^\circ$	0.17 GU	
	$\rho(e): 60^\circ$	0.17 GU	
	$\rho(e): 85^\circ$	0.23 GU	
UV Radiometer ^F	0 mW/cm ² to 10 mW/cm ²	3.2 % of reading	UV Radiometer ASTM E2297 ASTM E824, ASTM G130 ASTM G138
UV Lamp ^F	0 mW/cm ² to 10 mW/cm ²	3.2 % of reading	
Spectrophotometer ^F	CIE L*: 26 to 97	CIE L*: 0.23	Ceramic Color Standards ASTM E1164, ASTM E1331, ASTM E308, ASTM D2244
	CIE a*: -35 to 55	CIE a*: 0.12	
	CIE b*: -40 to 89	CIE b*: 0.12	
Color Meter ^F	CIE L*: 26 to 97	CIE L*: 0.23	
	CIE a*: -35 to 55	CIE a*: 0.12	
	CIE b*: -40 to 89	CIE b*: 0.12	
X-Ray Densimeter ^F	0.21 D to 4.67 D	0.058 D	Transmission Density Standard ASTM E1079

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
Pyrometer ^F	50 °C to 1 200 °C	1.2 °C	Black Body Model IR-301 CENAM Technical Guide



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Thermodynamic

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Bimetallic Thermometer ^F	30 °C to 500 °C	0.36 °C	Dry Well Calibrator Fluke 726 NMX-CH-70-SCFI
Plastometer (Temperature) ^F	30 °C to 450 °C	0.35 °C	Fluke 726; RTD Sensor ASTM D1238 ISO 1133-1
Temperature Measurement Thermocouple Type J ^F	30 °C to 500 °C	0.19 °C	Dry Well Calibrator Fluke 726 CEM TH-001
Temperature Measurement Thermocouple Type K ^F	30 °C to 500 °C	0.19 °C	
Temperature Measurement Thermocouple Type T ^F	30 °C to 500 °C	0.19 °C	
Temperature Measurement Thermocouple Type E ^F	30 °C to 500 °C	0.19 °C	
Equipment to Measure Temperature Sensor RTD Pt 100 (385) 2, 3, 4 Wire ^F	30 °C to 500 °C	0.14 °C	
Equipment to Measure Temperature Sensor RTD Pt 500 2, 3, 4 Wire ^F	30 °C to 500 °C	0.14 °C	
Equipment to Measure Temperature Sensor RTD Pt 1 000 2, 3, 4 Wire ^F	30 °C to 500 °C	0.14 °C	
Equipment to Measure Contact Temperature Sensor ^F	30 °C to 150 °C	0.18 °C	
Thermohygrometer Only Humidity ^F	30 % RH to 90 % RH	0.6 % RH	Vaisala Humidity Chamber CEM TH-007
Thermohygrometer Only Temperature ^F	-15 °C to 50 °C	0.033 °C	

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
Indirect Verification of Lebb Hardness Tester HLD ^{F0}	449 HLD to 800 HLD	6 HLD	Hardness Block ASTM A956



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Accelerometer At the listed frequencies ^F (15.92 Hz to 10 000 Hz)	1 m/s ² to 20 m/s ²	0.01 m/s ²	Vibration Gauge (Calibrator) MMF, Mod. VC120 and VC21D IEC 60068-2-6
Torque Wrench ^F	0.11 N·m to 0.57 N·m	0.008 5 N·m	Torque Tester Analyzer Model I-80 NMX-CH-6789-IMNC ISO 6789
	1.13 N·m to 7.9 N·m	0.017 N·m	Torque Tester Analyzer Model I-80 NMX-CH-6789-IMNC ISO 6789
	19.66 N·m to 196.59 N·m	0.093 N·m	Torque Tester Analyzer Model DIS-IP200 NMX-CH-6789-IMNC ISO 6789
	135.58 N·m to 1 355.82 N·m	0.2 N·m	Torque Tester Analyzer Model BMX 1000F NMX-CH-6789-IMNC ISO 6789
Dynamic Viscosity Meters ^{FO}	0.1 Pa·s to 53.36 Pa·s	0.000 4 Pa·s	Cannon Standard Oil ASTM D7042
Kinematic Viscosity Ford Cups No. 2, 3, 4, 5 ^{FO}	10 mm ² /s to 1 200 mm ² /s	0.25 mm ² /s	Cannon Standard Oil ASTM D1200
Kinematic Viscosity Zahn Cups No. 1, 2, 3, 4, 5 ^{FO}	5 mm ² /s to 1 840 mm ² /s	0.21 mm ² /s	Cannon Standard Oil ASTM D4212
Pressure Gages Pressure Transducers ^F	-96.52 kPa to 0 kPa	0.086 % of reading	Pressure Transducer Pressure Gauge CEM ME-003
	0 kPa to 210 kPa	0.043 % of reading	
	689 kPa to 6 895 kPa	0.028 % of reading	
	6.896 MPa to 20.684 MPa	0.044 % of reading	
	20.685 MPa to 68.947 MPa	0.062 % of reading	
Barometer ^F	900 hPa to 1 100 hPa	0.14 hPa	Pressure Transducer and Barometer ME-003



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Direct Verification of Durometer Hardness ^F Tester Types A, B, C, D, E, M, O, DO, OO, OOO & OOO-S	2.46 mm to 25.4 mm	0.007 4 mm	Video Magnification 150x ASTM D2240 JIS K 7312
Identor shape (Not all parameters apply to all of Durometer types) Identor Diameter Identor Tip Diameter Identor Tip Radius Identor Tip Angle		0.007 4 mm 0.007 4 mm 0.007 4 mm 0.39°	
Durometer Identor Spring Types A, B, E & O Types C, D & DO Types M Types OO, OOO Types OOO-S Types C (JIS K 7312)	0.55 N to 8.05 N 4.445 N to 44.45 N 0.324 N to 0.765 N 0.203 N to 1.111 N 0.167 N to 1.932 N 0.539 N to 8.379 N	0.026 N 0.016 N 0.037 N 0.029 N 0.034 N 0.013 N	Load Cell ASTM D2240 JIS K 7312
Anemometer ^F	1 m/s to 13 m/s	0.18 m/s	Hot Wire Anemometer Amprobe Comparison IEC 61400-12-1 ASTM D5096
Density Cup ^F	100 mL	0.001 2 mL	Scale ASTM D854-14

Mass Force and Weighing Device

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Analytical Balance ^F	0.001 g to 300 g (Res.= 0.001 g)	$(1.18 \times 10^{-3} + 2 \times 10^{-6}Wt)$ g	Class F1 Weights Euramet-cg-18
Balances and Scale ^F	1 g to 500 g (Res.= 0.01 g)	$(1.2 \times 10^{-3} + 2 \times 10^{-6}Wt)$ g	



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Mass Force and Weighing Device

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Balances and Scale ^F	500 g to 2 000 g (Res.= 0.01 g)	$(1.1 \times 10^{-2} + 4 \times 10^{-6}Wt)$ g	Class F1 Weights Euramet-cg-18
	2 000 g to 5 000 g (Res.= 0.1 g)	$(9.6 \times 10^{-2} + 1.7 \times 10^{-5}Wt)$ g	
	5 000 g to 20 000 g (Res.= 1 g)	$(1.13 + 3.4 \times 10^{-5}Wt)$ g	
	20 000 g to 100 000 g (Res.= 5 g)	$(5.52 + 3.4 \times 10^{-5}Wt)$ g	
Force Meter-Tension ^F	0.98 N to 9.81 N	0.24 % of reading	Load Cell Interface NMX-CH-7500-1-IMNC ISO 7500-1
	9.82 N to 50 N	0.067 % of reading	
	50.01 N to 444.83 N	0.1 % of reading	
	444.84 N to 889.65 N	0.1 % of reading	
	889.7 N to 8 896.5 N	0.079 % of reading	
	9.81 kN to 98.07 kN	0.28 % of reading	
Gage Force Meter (Adhesive) ^{FO}	2.22 kN to 22.24 kN	0.76 % of reading	Load Cell ASTM D4541 ISO 4624
Force Meter-Compression ^F	0.098 N to 0.981 N	5.9 % of reading	Load Cell Interface NMX-CH-7500-1-IMNC ISO 7500-1
	0.982 N to 9.81 N	0.24 % of reading	
	9.82 N to 50 N	0.066 % of reading	
	50.01 N to 444.83 N	0.1 % of reading	
	444.84 N to 889.65 N	0.1 % of reading	
	889.7 N to 8 896.5 N	0.057 % of reading	
	9.81 kN to 98.07 kN	0.22 % of reading	
Plastometer (Weights) ^F	325 g to 21 627 g	0.083 g	Class F1 Weights ASTM D1238 ISO 1133-1

Acoustic

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Sonometer (F=1 kHz) ^{FO}	94 dB to 114 dB	0.14 dB	Acoustic Calibrator UNE-EN 61672-2
Sound Calibrator 2 Fixed Point ^F	94 dB 114 dB	0.092 dB	Sound Meter Level 1 UNE-EN IEC 60942



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Electrical

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Equipment to Measurement Pulse ^F Electrical Simulation	0.5 kV to 35 kV	2 % of reading	Voltage Divider Oscilloscope ASTM G62
Moister Counter (Leather) ^F Electrical Simulation	11 % Moisture Content to 22 % Moisture Content	0.058 % Moisture Content	High Resistance Standard ASTM D4444-13
Moister Counter (Paper) ^F Electrical Simulation	4 % Moisture Content to 17 % Moisture Content	0.058 % Moisture Content	
Moister Counter (Wood) ^F Electrical Simulation	8 % Moisture Content to 34 % Moisture Content	0.058 % Moisture Content	
Equipment to Measure DC Current ^{FO}	0.2 μ A to 200 μ A	0.006 2 % of reading	Transmille Calibrator 3041A CEM EL-001 CEM EL-007
	0.21 mA to 2 mA	0.006 3 % of reading	
	2.1 mA to 20 mA	0.006 2 % of reading	
	21 mA to 200 mA	0.006 3 % of reading	
	0.21 A to 2 A	0.007 9 % of reading	
	2.1 A to 30 A	0.015 % of reading	
Equipment to Measure DC Voltage ^{FO}	0.2 mV to 200 mV	0.006 1 % of reading	
	0.22 V to 2 V	0.007 % of reading	
	2.2 V to 20 V	0.006 9 % of reading	
	22 V to 200 V	0.000 7 % of reading	
	220 V to 1 000 V	0.001 3 % of reading	
Equipment to Measure AC/DC Current Clamp-on Meters (Toroidal) ^{FO}	1 A to 1 500 A	0.017 % of reading	Transmille Calibrator 3041A Workstation Model EA015 CEM EL-007
Equipment to Measure AC Voltage At the listed frequencies ^{FO}			Transmille Calibrator 3041A CEM EL-001 CEM EL-007
10 Hz to 500 kHz	20 mV to 200 mV	0.022 % of reading	
10 Hz to 500 kHz	0.22 V to 2 V	0.016 % of reading	
10 Hz to 100 kHz	2.2 V to 20 V	0.016 % of reading	
40 Hz to 20 kHz	22 V to 200 V	0.28 % of reading	
40 Hz to 10 kHz	220 V to 1 000 V	0.049 % of reading	



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Equipment to Measure AC Current At the listed frequencies ^{FO}			Transmille Calibrator 3041A CEM EL-001 CEM EL-007
10 Hz to 10 kHz	25 μ A to 200 μ A	0.033 % of reading	
10 Hz to 10 kHz	0.21 mA to 2 mA	0.069 % of reading	
10 Hz to 10 kHz	2.1 mA to 20 mA	0.11 % of reading	
10 Hz to 10 kHz	21 mA to 200 mA	0.026 % of reading	
10 Hz to 5 kHz	0.21 A to 2 A	0.1 % of reading	
10 Hz to 1 kHz	2.1 A to 30 A	0.04 % of reading	
Equipment to Measure Resistance ^{FO}			Resistance Decade Box Model RBOX-408 CEM EL-001 CEM EL-007
	0.1 Ω	1.5 % of reading	
	1 Ω	0.15 % of reading	
	10 Ω	0.12 % of reading	
	100 Ω	0.012 % of reading	
	1 k Ω	0.001 3 % of reading	
	10 k Ω	0.001 2 % of reading	
	100 k Ω	0.001 4 % of reading	
	1 M Ω	0.001 9 % of reading	
	10 M Ω	0.001 9 % of reading	
Equipment to Measure Frequency ^{FO}	1 Hz to 10 MHz	0.001 2 % of reading	
Equipment to Measure Earth Resistance Up to 1 kHz ^{FO}			Resistance Decade Box Model RBOX-408 CEM EL-001 CEM EL-007
	1 Ω to 9 Ω	0.18 % of reading	
	10 Ω to 99 Ω	0.017 % of reading	
	100 Ω to 999 Ω	0.001 7 % of reading	
	1 k Ω to 9.9 k Ω	0.16 % of reading	
	10 k Ω to 99 k Ω	0.017 % of reading	
	10 k Ω to 999 k Ω	0.001 8 % of reading	
	1 M Ω to 10 M Ω	0.17 % of reading	
Equipment to Measure Capacitance ^{FO}			Transmille Calibrator 3041A CEM EL-001 CEM EL-007
	1 nF to 1 00 nF	0.1 % of reading	
	1 μ F to 10 μ F	0.26 % of reading	
Equipment to Measure Insulation Resistance (Fixed Points) Up to 5 kV ^{FO}			High Resistance Standard Decade Box Model VRS-100-10-1 k Ω -ROT CEM EL-001 CEM EL-007 CEM EL-004
	1 k Ω	0.12 % of reading	
	10 k Ω	0.12 % of reading	
	100 k Ω	0.12 % of Reading	
	1 M Ω	0.12 % of reading	
	10 M Ω	0.12 % of reading	



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Equipment to Measure Insulation Resistance (Fixed Points) Up to 5 kV ^{FO}	100 M Ω	0.12 % of reading	High Resistance Standard Decade Box Model VRS-100-10-1 k Ω -ROT CEM EL-001 CEM EL-007 CEM EL-004
	1 G Ω	0.02 % of reading	
	10 G Ω	0.27 % of reading	
	100 G Ω	0.37 % of reading	
	1 T Ω	1.6 % of reading	
Equipment to Measure Capacitance - Up to 10 kV ^{FO}	100 pF to 10 μ F	0.61 % of reading	Capacitance Decade Box Model CBOX-406 CEM EL-001; CEM EL-007
Equipment to Measure Resistance At the listed frequencies Up to 1 kHz	1 m Ω to 10 m Ω	2.3 % of reading	Resistance Decade Box Model HARS-X-3-0.001 CEM EL-001 CEM EL-007
	10 m Ω to 100 m Ω	0.23 % of reading	
	100 m Ω to 1 000 m Ω	0.12 % of reading	
Equipment to Output AC Voltage (Hipot) @ 60 Hz ^{FO}	1 kV to 10 kV	1.3 % of reading	Voltage Divider/ Multimeter Transmiller Model 8081 CEM EL-022
Equipment to Output DC Voltage (Hipot) ^{FO}	1 kV to 10 kV	1.2 % of reading	
Porosity Detector ^{FO}	1 kV to 30 kV	1.3 % of reading	Crest Meter/ Voltage Divider ASTM G62
Equipment to Measure DC Power ^{FO}	2 W to 3 000 W	0.004 1 % of reading	Transmille Calibrator 3041A CEM EL-014
Equipment to Measure AC Power ^{FO} PF=1, Phase = 0°	2 W to 30 000 W	0.04 % of reading	
Equipment to Output DC Voltage ^{FO}	0.1 mV to 100 mV	0.001 3 % of reading	Multimeter Transmille Model 8081 CEM EL-010
	0.11 V to 1 V	0.001 2 % of reading	
	1.1 V to 10 V	0.001 3 % of reading	
	11 V to 100 V	0.001 3 % of reading	
	110 V to 1 000 V	0.001 3 % of reading	
Equipment to Output AC Voltage At the listed frequencies ^{FO}			Multimeter Transmiller Model 8081 CEM EL-010
10 Hz to 100 kHz	20 mV to 100 mV	0.03 % of reading	
10 Hz to 1 kHz	0.2 V to 1 V	0.017 % of reading	
10 Hz to 100 kHz	1.1 V to 10 V	0.017 % of reading	
10 Hz to 50 kHz	11 V to 100 V	0.03 % of reading	
10 Hz to 10 kHz	110 V to 1 000 V	0.05 % of reading	



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Electrical

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 DC Current ^{F0}	0.1 µA to 100 µA	0.001 5 % of reading	Multimeter Transmiller Model 8081 CEM EL-010
	0.11 mA to 1 mA	0.001 5 % of reading	
	1.1 mA to 10 mA	0.001 5 % of reading	
	11 mA to 100 mA	0.001 5 % of reading	
	0.11 A to 1 A	0.001 2 % of reading	
	1.1 A to 10 A	0.002 1 % of reading	
	11 A to 30 A	0.004 4 % of reading	
Equipment to Output AC Current At the listed frequencies ^{F0}			
10 Hz to 10 kHz	25 µA to 100 µA	0.023 % of reading	
10 Hz to 10 kHz	0.11 mA to 1 mA	0.023 % of reading	
10 Hz to 10 kHz	1.1 mA to 10 mA	0.023 % of reading	
10 Hz to 10 kHz	11 mA to 100 mA	0.012 % of reading	
10 Hz to 10 kHz	0.11 A to 1 A	0.023 % of reading	
10 Hz to 1 kHz	1.1 A to 10 A	0.051 % of reading	
10 Hz to 1 kHz	11 A to 30 A	0.059 % of reading	
Equipment to Output Resistance ^{F0}	1 Ω	0.012 % of reading	Multimeter Transmiller Model 8081 CEM EL-010 CEM EL-003
	10 Ω	0.001 3 % of reading	
	100 Ω	0.000 2 % of reading	
	1 kΩ	0.012 % of reading	
	10 kΩ	0.001 2 % of reading	
	100 kΩ	0.012 % of reading	
	1 MΩ	0.012 % of reading	
	10 MΩ	0.017 % of reading	
Equipment to Output Frequency ^{F0}	100 Hz to 1 MHz	0.001 2 % of reading	Multimeter Transmille Model 8081 CEM EL-010
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type B ^{F0}	600 °C to 1 820 °C	0.92 °C	Electrical Simulation of Thermocouple Output Multi-Function Workstation Transmille EA015 Transmille EA001A Euramet CG-11
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type E ^{F0}	-200 °C to 1 000 °C	0.31 °C	



Certificate of Accreditation: Supplement

Twilight S. A. de C. V.

Alfonso Reyes # 2612, 704, Col. Del Paseo Residencial
 Monterrey, Nuevo León, México. C.P. 64920
 Contact Name: Josefina Torres Lara Phone: 818-173-4300

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, and Control Equipment used with Thermocouple Type J ^{FO}	-200 °C to 1 200 °C	0.35 °C	Electrical Simulation of Thermocouple Output Multi-Function Workstation Transmille EA015 Transmille EA001A Euramet CG-11
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type K ^{FO}	-200 °C to 1 370 °C	0.42 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type N ^{FO}	-200 °C to 1 300 °C	0.37 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type T ^{FO}	-250° C to 400 °C	0.31 °C	
Temperature Calibration Indication, and Control Equipment used with RTD Pt 100 Ω ^{FO}	-100 °C to 800 °C	0.28 °C	
Teslameter (Gaussmeter) ^{FO}	1 μ T to 1 500 μ T (0.01 G to 15 G)	0.004 9 % of reading	Multi-Function Workstation Transmille EA015 ASTM E 1444/ E1444M
	240 mT to 980 mT (2.4 kG to 9.8 kG)	0.095 % of reading	Reference Magnet VM 4-2mm, VM 4-5 mm, VM 4-10 mm ASTM E 1444/ E1444M
Oscilloscope Amplitude (Square Wave Signal) ^F 1 M Ω and 10 M Ω	1 mV to 120 V p-p	0.002 4 % of reading	Transmille Calibrator 3041A; Impedance CEM TF-001
Oscilloscope Amplitude (Square Wave Signal) Frequency ^F 1 M Ω and 10 M Ω	1 Hz to 50 MHz	0.002 4 % of reading	Transmille Calibrator 3041A; Impedance CEM TF-001
Equipment to Measure AC Apparent Power	0.2 VA to 200 VA	0.000 61 % of reading	Transmille Calibrator 3041A; Multifunction Workstation Trasmille EA015
	210 VA to 2 000 VA	0.000 61 % of reading	
	2.1 kVA to 20 kVA	0.000 61 % of reading	
	21 kVA to 200 kVA	0.000 61 % of reading	
	210 kVA to 1 500 kVA	0.000 81 % of reading	



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Time and 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
Photo Tachometer ^F	25.13 rad/s to 2 094.19 rad/s	0.12 rad/s	Multifunction Workstation Transmille Calibrator EA015 SAE AS432
Contact Tachometer ^F	52.36 rad/s to 366.52 rad/s	0.042 rad/s	Generator RPM (rad/s) SAE AS 432
Chronometer ^F	120 s to 3 600 s	0.52 s	Chronometer, Stopwatch and Timer Calibrations NIST Practice Guide Publication 960-12
Plastometer (Cut Time) ^F	120 s to 3 600 s	0.54 s	Chronometer, Stopwath ASTM D1238 ISO 1133-1

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
Gas Detector ^{FO}	18 cmol/mol (Oxygen)	2 % of reading	Gas Standard CEM QU-012
	0.05 cmol/mol (Methane)	2.4 % of reading	
	0.5 cmol/mol (Methane)	2.4 % of reading	
	2.5 cmol/mol (Methane)	2.4 % of reading	
	100 μ mol/mol (Monoxide Carbon)	5 % of reading	
	25 μ mol/mol (Hydrogen Sulfide)	10 % of reading	
Refractometer ^F	5.926 % °Brix to 84.966 % °Brix (1.341 69 nD to 1.504 01 nD)	0.042 % °Brix (2.4 x 10 ⁻⁴ nD)	Standard Solutions Refractometer Atago RX-5000i-Plus OIML TC17/ SC2/ N2 OIML R108
Conductivity Meter ^{FO}	100.1 μ S/cm	2.1 μ S/cm	Buffer Solutions ASTM D1125
	1 413 μ S/cm	6 μ S/cm	
	9 988 μ S/cm	46 μ S/cm	
pH Meters pH Probes ^F	4 pH	0.012 pH	Buffer Solutions ASTM D 1293 CEM QU-003
	7 pH	0.012 pH	
	10 pH	0.021 pH	
Breathalyzer ^{FO}	0.04 % BAC to 0.1 % BAC	0.002 1 % BAC	Gas Standard OIML R 126 PROY-NMX-CH-153-IMNC



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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
Particle Counter ^F Particle Size 0.3 μm 0.5 μm 0.7 μm 1 μm 5 μm	10 particles/ m^3 to 120 000 000 particles/ m^3	$(10.04 + 8.07 \times 10^{-4}\Delta)$ particles/ m^3	Particle Counter ISO 21501-4

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- The term L represents length in inches or millimeters as appropriate to the uncertainty statement.
- The term Δ represent Particle/ m^3