



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

CEMYR Instrumentos, S.A. de C.V.

*Av. Las Puentes No. 207, Col. Las Puentes 2do. Sector
San Nicolás de los Garza, Nuevo León, México C.P. 66460*

*(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):

***Optical, Time and Frequency, Chemical, Dimensional, Mass, Force and
Weighing Devices, Electrical and Thermodynamic 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/Operations Manager

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
March 30, 2008	November 03, 2016	December 31, 2018

<i>Accreditation No.:</i>	<i>Certificate No.:</i>
60097	L16-455

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.pjilabs.com*



Certificate of Accreditation: Supplement

CEMYR Instrumentos, S.A. de C.V.

Av. Las Puentes No. 207, Col. Las Puentes 2do. Sector
 San Nicolás de los Garza, N.L., México C.P. 66460
 Contact Name: Orlando Reyes Phone: 818-057-5931

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

Optical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Reflectance Spectrometers Reflectance Color Spectrometers ^{FO}	400 nm to 700 nm 0 % to 100 % reflectance (ρ) Color Values: CIE L*: 0 to 100 CIE a*: -40.0 to 40.0 CIE b*: -40.0 to 88	L*: 0.21 a*: 0.09 b*: 0.15	Ceramic Tiles II-PCAL-OPT-02 ASTM E-1164 ASTM E-308
Transmittance Spectrophotometers ^{FO}	τ : 10 % T to 50 % T Spectral Bandwidth (2 nm)	(500 x 10 ⁻⁴ + 500 x 10 ⁻⁵ X) % T X: reading in % T	Neutral Density Glass Filters Interference Filters II-PCAL-OPT-01 ASTM E-275
	λ : 279.46 nm to 638.02 nm Spectral Bandwidth (2 nm)	0.5 nm	
Gloss Meters ^{FO}	Angle 20°: 92 Gloss Units	0.35 Gloss Units	High Gloss Glass II-PCAL-OPT-04 ASTM D-523
	Angle 60°: 95 Gloss Units	0.35 Gloss Units	
	Angle 85°: 99 Gloss Units	0.35 Gloss Units	
Equipment for Visual Appraisal of the Colors and Color Difference ^O	900 lux to 11 000 lux Light Chambers	(11.99 + 8.91 x 10 ⁻³ L) lux	Light Meter II-PCAL-OPT-05 ASTM D-1729
Light Meters ^F	900 lux to 11 000 lux	(128.77 + 6.93 x 10 ⁻³ L) lux	Quartz Tungsten Halogen Lamps Light Meter II-PCAOPT-06 NIST SP 230-57

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, Thermometer used with Thermocouple Type J ^F	-180 °C to 750 °C	0.6 °C	Electrical Simulation of Thermocouple Output Fluke 724
Temperature Calibration. Thermometer used with Thermocouple Type RTD Pt100 ^F (27.08 Ω to 360.55 Ω)	-180 °C to 750 °C	0.5 °C	



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Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Kinematic Viscometers ^{FO}	8.6 mm ² /s	1 % of reading	CENAM Certified Liquids Standards II-PCAL-MEC-03
	19 mm ² /s	1 % of reading	
	370 mm ² /s	1 % of reading	
	940 mm ² /s	1 % of reading	
	7 900 mm ² /s	1 % of reading	
	17 000 mm ² /s	1 % of reading	
	63 000 mm ² /s	1 % of reading	
Dynamic Viscometers - Rotational Viscometers ^{FO} Note: All ranges are at 25°C	56 000 mPa·s	1.5 % of reading	CENAM Certified Liquids Standards ASTM D-2983 II-PCAL-MEC-01
	15 000 mPa·s	1.5 % of reading	
	6 900 mPa·s	1.2 % of reading	
	800 mPa·s	1.2 % of reading	
	310 mPa·s	1.2 % of reading	
	15 mPa·s	1.2 % of reading	
	6.8 mPa·s	1.2 % of reading	
Potential of Hydrogen - pH Meters ^{FO}	4 pH	1.1 % of reading	pH 4 BUFFER pH 7 BUFFER pH 10 BUFFER II-PCAL-ELEQ-02 ASTM D-1293
	7 pH	1.1 % of reading	
	10 pH	1.1 % of reading	
Conductivity Meters ^{FO}	100.6 μ S/cm	3 μ S/cm	Control, Thermo Electron, Ricca Chemical Companies Standard Solutions II-PCAL-ELEQ-01 STM D-1125
	1 417 μ S/cm	5 μ S/cm	
	2 990 μ S/cm	15 μ S/cm	
Turbidity Meters ^{FO}	20 NTU	1 NTU	Formazin Standards II-PCAL-OPT-07 HACH METHOD 8195
	800 NTU	35 NTU	
	1 000 NTU	85 NTU	
	4 000 NTU	110 NTU	

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Thickness Gages ^F	22.9 μ m to 1 488 μ m	1.5 μ m	Certified Shim Set II-PCAL-DIM-01 ASTM E-376



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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
Mass Class ASTM 5, 6, 7 and F ^F	10 g	1.5 mg	ABBA Substitution Method. Analytical Scale. Ohaus (Res.= 0.1 mg) ASTM 1 Weights
	20 g	1.5 mg	
	50 g	3.3 mg	
	100 g	3.3 mg	
	200 g	5 mg	
	100 g	5 mg	ABBA Substitution Method. Analytical Scale. Sartorius (Res.= 1 mg) ASTM 4 Weights
		200 g	
	500 g		
	1 000 g	6 mg	ABBA Substitution Method. Analytical Scale. Sartorius (Res.= 1 mg) ASTM 2 Weights
	2 000 g	13 mg	ABBA Substitution Method. Analytical Scale. Mettler (Res.= 10 mg) ASTM 2 Weights
5 000 g	13 mg		
Scales and Balances ^{FO}	20 g to 200 g	$(300 \times 10^{-6} + 299 \times 10^{-9}Wt) \text{ g}$	ASTM Class 2 Weights
	500 g to 6 000 g	$(257 \times 10^{-4} + 842 \times 10^{-9}Wt) \text{ g}$	II-PCAL-MEC-02
	10 kg to 100 kg	$(360 \times 10^{-5} + 163 \times 10^{-6}Wt) \text{ kg}$	ASTM E-617

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
Temperature Calibration Liquid in Glass Thermometer ^F	5 °C to 60 °C	0.75 °C	Circulation Bath
Temperature Calibration, Thermometer used with Thermocouple Type T ^F	40 °C to 300 °C	0.6 °C	Reed BX-150 Dry Block Temperature Calibrator
Temperature Calibration, Thermometer used with Thermocouple Type K ^F	40 °C to 300 °C	0.6 °C	
Temperature Calibration, Thermometer used with Thermocouple Type J ^F	40 °C to 300 °C	0.6 °C	



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Thermodynamic

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Temperature Calibration, Thermometer used with Thermocouple Type RTD Pt 1 000 (1 155.40 Ω to 2 120.50 Ω) ^F	40 °C to 300 °C	0.5 °C	Reed BX-150 Dry Block Temperature Calibrator
Thermometer of Mercury in Glass ^F	40 °C to 300 °C	0.8 °C	
Temperature Controllers with Thermocouple Type K ^{FO}	-43 °C to 1 370 °C	(1.04 + 3.57 x 10 ⁻³ T) °C	Digital Thermometer II-PCAL-TEMP-01

Time and Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Stop Watch ^F	3 600 s	0.5 s	Stop Watch Direct Comparison Method II-PCAL-TIEMP-01 NIST SP 960-12

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.



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

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 T represents temperature in °C or °F as appropriate to the uncertainty statement.
9. The term Wt represents weight in pounds or grams (including SI multiple and submultiple units) appropriate to the uncertainty statement.

