



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Metrologia Messtechnik, S.A. de C.V.

***Calzada México Tacuba No. 1186, Col. Argentina Antigua
Alcaldía Miguel Hidalgo, Ciudad de México, México. C.P. 11270***

*(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):

Mechanical, Thermodynamic, 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:

Tracy Szerszen
President

Initial Accreditation Date:

August 30, 2016

Issue Date:

October 21, 2024

Expiration Date:

December 31, 2026

Accreditation No.:

82612

Certificate No.:

L24-795

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.pjllabs.com*



Certificate of Accreditation: Supplement

Metrologia Messtechnik, S.A. de C.V.

Calzada México Tacuba No. 1186, Col. Argentina Antigua
Delegación Miguel Hidalgo, Ciudad de México, México. C.P. 11270
Contact Name: Ing. Raúl Galindo Nolasco Phone: 555-399-5576

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

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ($\pm$)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Pressure Gages and Transducers ^F	68.947 kPa to 68.947 MPa (10 psi to 10 000 psi)	0.12 kPa (0.018 psi)	Deadweight Tester	ASME-B-40.1 and ASME-B-40.7
	199.07 Pa to 1.99 kPa (0.03 psi to 0.289 psi)	0.74 Pa (0.000 107 psi)	Manometer	
	1.99 kPa to 19.91 kPa (0.289 psi to 2.887 psi)	2.3 Pa (0.000 33 psi)		
	2.068 kPa to 206.84 kPa (0.3 psi to 30 psi)	8.1 Pa (0.001 17 psi)	Digital Pressure Transducer	
	6.849 kPa to 689.47 kPa (1 psi to 100 psi)	0.046 kPa (0.006 6 psi)	Digital Pressure Gage	
	689.47 kPa to 68.947 MPa (100 psi to 10 000 psi)	5.6 kPa (0.81 psi)	Digital Pressure Gage	
Vacuum Gages and Transducers ^F	-68.947 kPa to 0 Pa (-10 psi to 0 psi)	0.057 kPa (0.008 3 psi)		NMX-CH-003-SCFI

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ($\pm$)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Liquid Glass Thermometer ^F	-40 °C to 400 °C	0.18 °C	SPRT Accumac, Liquid Bath, Dry Block	NOM-011-SCFI and ASTM-E-1
Bimetallic Thermometer and Digital Thermometers ^F	-40 °C to 500 °C	0.12 °C		NMX-CH-070-SCFI
Environmental Thermometer ^F	20 °C to 50 °C	0.18 °C	SPRT Accumac and Environmental Chamber	
Platinum Resistance Thermometer ^F RTD'S Pt-100, Pt-200, Pt-500 & Pt-1 000	-40 °C to 150 °C	0.014 °C	SPRT Accumac, Liquid Bath, Dry Block	ASTM-E-1137
	150 °C to 600 °C	0.027 °C		
	600 °C to 800 °C	0.83 °C		
	800 °C to 1 000 °C	1 °C		
	1 000 °C to 1 100 °C	1.2 °C		
	1 100 °C to 1 200 °C	1.6 °C		



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Thermodynamic

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Infrared Thermometers / Radiation Thermometer ^F	-40 °C to 150 °C	0.19 °C	SPRT Accumac, Thermocouple type R & E, Black Body Calibrator.	OIML-D-24
	150 °C to 600 °C	0.22 °C		
	600 °C to 800 °C	1.1 °C		
	800 °C to 1 000 °C	1.5 °C		
	1 000 °C to 1 100 °C	2. °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type B ^F	-40 °C to 0 °C	0.03 °C	SPRTD Accumac and Thermocouple Type "R" Dry Block Calibrator	ASTM-E-230
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
	700 °C to 800 °C	1.3 °C		
	800 °C to 900 °C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2. °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type C ^F	-40 °C to 0 °C	0.03 °C	SPRTD Accumac and Thermocouple Type "R" Dry Block Calibrator	ASTM-E-230
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
Temperature Measurement Thermocouple Type C ^F	700 °C to 800 °C	1.3 °C		
	800 °C to 900 °C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2. °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type E ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		



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MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Temperature Measurement Thermocouple Type E ^F	420 °C to 660 °C	0.096 °C	SPRTD Accumac and Thermocouple Type “R” Dry Block Calibrator	ASTM-E-230
	660 °C to 700 °C	1.1 °C		
	700 °C to 800 °C	1.3 °C		
	800°C to 900°C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
Temperature Measurement Thermocouple Type J ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
	700 °C to 800 °C	1.3 °C		
	800°C to 900°C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2 °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type K ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
Temperature Measurement Thermocouple Type K ^F	700 °C to 800 °C	1.3 °C		
	800°C to 900°C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2 °C		
	1 100 °C to 1 200 °C	1.7 °C		
Temperature Measurement Thermocouple Type N ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		



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Temperature Measurement Thermocouple Type N ^F	660 °C to 700 °C	1.1 °C	SPRTD Accumac and Thermocouple Type “R” Dry Block Calibrator	ASTM-E-230
	700°C to 800°C	1.3 °C		
	800 °C to 900 °C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2 °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type R ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
	700 °C to 800 °C	1.3 °C		
	800 °C to 900 °C	1.5 °C		
	900 °C to 1 000 °C	1.7°C		
	1 000 °C to 1 100 °C	2 °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type S ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 420 °C	0.069 °C		
	420 °C to 660 °C	0.096 °C		
	660 °C to 700 °C	1.1 °C		
	700 °C to 800 °C	1.3 °C		
	800°C to 900°C	1.5 °C		
	900 °C to 1 000 °C	1.7 °C		
	1 000 °C to 1 100 °C	2 °C		
	1 100 °C to 1 200 °C	2.2 °C		
Temperature Measurement Thermocouple Type T ^F	-40 °C to 0 °C	0.03 °C		
	0 °C to 30 °C	0.011 °C		
	30 °C to 232 °C	0.023 °C		
	232 °C to 400 °C	0.069 °C		



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Hygrometers and Transducers of % Relative Humidity ^F	20 % RH to 90 % RH	0.72 % RH	Digital Hygrometer and Humidity Chamber	CENAM Technical Guide

Time and Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ($\pm$)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Contact Tachometers ^F	Up to 4 800 rpm (Up to 502.656 rad/s)	0.72 rpm (0.075 rad/s)	Universal Counter Arbitrary Wave Digital, Reference Tachometer	ASTM-F-2046
Digital Photo Tachometers and Speed Encoders ^F	UP to 100 000 rpm (Up to 10 472 rad/s)	0.005 8 rpm (0.006 1 rad/s)	Universal Counter Arbitrary Wave Digital, Generator Infrared Diode Mooring.	
Stopwatch and Timer ^F	1 s to 86 400 s (1 s to 24 h)	0.000 58 s (1.61 x 10 ⁻⁷ h)	Universal Counter Arbitrary Wave Generator Digital, Frequency Counter, Stopwatch Master	CENAM Technical Guide

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ($\pm$)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type B ^F	0 °C to 1 820 °C	0.006 5 °C	8 ½ Digits Multimeter and Multifunctional Calibrator	ASTM-E-230
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type C ^F	0 °C to 2 315 °C	0.006 5 °C		
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type E ^F	-270 °C to 1 000 °C	0.006 5 °C		



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Electrical

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Temperature Calibration Indication and Control, Equipment used with Thermocouple Type J ^F	-210 °C to 1 200 °C	0.006 5 °C	8 ½ Digits Multimeter and Multifunctional Calibrator	ASTM-E-230
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type K ^F	-270 °C to 1 372 °C	0.006 5 °C		
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type N ^F	-270 °C to 1 300 °C	0.006 5 °C		
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type R ^F	-50 °C to 1 768 °C	0.006 5 °C		
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type S ^F	-50 °C to 1 768 °C	0.006 5 °C		
Temperature Calibration Indication and Control, Equipment used with Thermocouple Type T ^F	-270 °C to 400 °C	0.006 5 °C		

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.



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4. The presence of a superscript O means that the laboratory performs calibration of the indicated parameter onsite at customer locations.
5. 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.

