



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Metrologia Especializada y Calibración, S.A. de C.V.

***Ignacio Aldama # 32, Col Los Reyes Ixtacala
Tlalnepantla, Estado de México, México. C.P. 54090***

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

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

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

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

For PJLA:

Initial Accreditation Date:

Issue Date:

Expiration Date:

August 08, 2016

July 16, 2026

October 31, 2028

Accreditation No.:

Certificate No.:

77849

L26-684

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

Metrologia Especializada y Calibración, S.A. de C.V.

Ignacio Aldama # 32, Col Los Reyes Ixtacala
Tlalnepantla, Estado de México, México. C.P. 54090
Contact Name: Geraldine Vidal Mendoza. Phone: 555-384-5018

Accreditation is granted to the facility to perform the following conformity assessment activities:

FIELD OF CALIBRATION	MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	EXPANDED MEASUREMENT UNCERTAINTY ($\pm$) ¹	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED	FLEX CODE	LOCATION OF ACTIVITY
Dimensional	Caliper	0.127 mm to 609.6 mm	$(9.5 + 6 \times 10^{-3} L) \mu\text{m}$	Gage Blocks	NMX-CH-002-IMNC Clause: 4.2.1	F1, F2	F, O
Dimensional	Depth Gage	0.127 mm to 609.6 mm	$(8 + 6 \times 10^{-3} L) \mu\text{m}$	Gage Blocks	NMX-CH-002-IMNC Clause: 4.2.1	F1, F2	F, O
Dimensional	Micrometer	0.127 mm to 508 mm	$(2 + 1.1 \times 10^{-2} L) \mu\text{m}$	Gage Blocks	NMX-CH-099-IMNC Clause: 6.11.1	F1, F2	F, O
Dimensional	Inside Micrometer	0.127 mm to 609.6 mm	$(1.2 + 4.4 \times 10^{-2} L) \mu\text{m}$	Gage Blocks	NMX-CH-093-IMNC Clause: 6.8.1	F1, F2	F, O
Dimensional	Depth Micrometer	0.127 mm to 304.8 mm	$(3.2 + 7 \times 10^{-3} L) \mu\text{m}$	Gage Blocks	JIS B 7544 Clause: 5	F1, F2	F, O
Dimensional	Height Gage	0.127 mm to 609.6 mm	$(15 + 7 \times 10^{-3} L) \mu\text{m}$	Gage Blocks	NMX-CH-141-IMNC-2005 Clause: 5.1	F1, F2	F, O
Dimensional	Thickness Gage	0.127 mm to 25.4 mm	2.5 μm	Gage Blocks	NMX-CH-463-IMNC-2008 Clause: 5.1 NMX-CH-002-IMNC Clause: 4.2.1 NMX-CH-099-IMNC Clause: 6.11.1 NMX-CH-093-IMNC Clause: 6.8.1 JIS B 7544 Clause: 5 NMX-CH-141-IMNC Clause: 5.1	F1, F2	F, O
Dimensional	Micrometer Standards	25 mm to 482.6 mm	$(1.1 + 1.2 \times 10^{-2} L) \mu\text{m}$	Gage Blocks, High Accuracy Indicator Mitutoyo 524-521	NMX-CH-099-IMNC Clause: 6.10	F1, F2	F, O



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Dimensional	Indicator	0.01 mm to 25.4 mm	7 μ m	Dial Gage Tester Mitutoyo 170-102 M-2	NMX-CH-463-IMNC Clause: 5.1	F1, F2	F
Dimensional	Test Indicator	0.01 mm to 1.6 mm	6 μ m	Dial Gage Tester Mitutoyo 170-102 M-2	NMX-CH-149-IMNC Clauses: 4.2.3 & 4.2.4	F1, F2	F
Dimensional	Tape Measure	Up to 50 m	(0.26 + 0.11L) mm	Standard Rule, Reticle Mitutoyo 183-131	NOM-046-SCFI Clauses: 5.1.1.1 & 5.2	F1, F2	F
Dimensional	Steel Rule	1 mm to 2 000 mm	(144 + 1 x 10 ⁻³ L) μ m	Standard Rule, Shop Microscope Cole Parmer 03890-40	NMX-CH-148-IMNC Clause: 6.1.1	F1, F2	F
Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J	-200 °C to 0 °C	1.2 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O
Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J	0 °C to 1 200 °C	0.87 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O



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Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K	-200 °C to 0 °C	1.4 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O
Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K	0 °C to 1 370 °C	0.98 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O
Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T	-200 °C to 0 °C	1.5 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O
Electrical	Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T	0 °C to 400 °C	1.1 °C	Electrical Simulation of Thermocouple Output	CENAM Technical Guide	F1, F2	F, O
Electrical	Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385 100 Ω	-200 °C to 0 °C	0.37 °C	Electrical Simulation of RTD Output	CENAM Technical Guide	F1, F2	F, O



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Electrical	Temperature Calibration, Indication and Control Equipment used with RTD Type Pt 385 100 Ω	0 °C to 800 °C	0.6 °C	Electrical Simulation of RTD Output	CENAM Technical Guide	F1, F2	F, O
Mechanical	Pressure Gauge	3 psig to 100 psig	0.039 psig	Druck DPI-150	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Pressure Gauge	100 psig to 300 psig	0.063 psig	Druck DPI-150 300 psig	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Pressure Gauge	300 psig to 2 000 psig	1.2 psig	Crystal XP2I	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Pressure Gauge	2 000 psig to 5 000 psig	3.4 psig	Crystal XP2I	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Pressure Gauge	5 000 psig to 10 000 psig	7 psig	Crystal XP2I	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Vacuum Gauge	-10 psig to -1 psig	0.021 psig	Druck DPI-150	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mechanical	Differential Pressure Gauge	0.02 in H ₂ O to 0.5 in H ₂ O	0.003 3 in H ₂ O	Differential Pressure Gauge MENSOR DPG2400	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O



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Mechanical	Differential Pressure Gauge	0.5 in H ₂ O to 5 in H ₂ O	0.015 in H ₂ O	Differential Pressure Gauge MENSOR DPG2400	NOM-013-SCFI (Clauses: 4.2; 6.3.1; 6.3.2; 6.4.1)	F1, F2	F, O
Mass, Force and Weighing Devices	Balances	1 mg to 50 g (Res.= 0.000 1 mg)	0.059 mg	Class OIML E2 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5)	F1, F2	O
Mass, Force and Weighing Devices	Balances	1 g to 5 kg (Res.= 0.01 g)	0.018 g	Class OIML F1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5.)	F1, F2	O
Mass, Force and Weighing Devices	Balances	1 g to 10 kg (Res.= 0.05 g)	0.074 g	Class OIML F1, F2 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5.)	F1, F2	O



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Mass, Force and Weighing Devices	Scales	1 g to 20 kg (Res.= 0.5 g)	0.78 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.3.3, 5.5)	F1, F2	O
Mass, Force and Weighing Devices	Scales	1 g to 50 kg (Res.= 1 g)	1.8 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5.)	F1, F2	O
Mass, Force and Weighing Devices	Scales	2 g to 100 kg (Res.= 2 g)	3.6 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5.)	F1, F2	O



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Mass, Force and Weighing Devices	Scales	5 g to 200 kg (Res.= 5 g)	7.8 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5)	F1, F2	O
Mass, Force and Weighing Devices	Scales	10 g to 500 kg (Res.= 10 g)	18 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5)	F1, F2	O
Mass, Force and Weighing Devices	Scales	20 g to 1 000 kg (Res.= 20 g)	36 g	Class OIML M1 Weights	CENAM Technical Guide NOM-010-SCFI (Clauses: 3.3.2.2, 3.3.2.3, 3.3.2.4, 3.3.2.5, 5.1.1, 5.2, 5.3.2, 5.5)	F1, F2	O
Thermodynamic	Chart Recorder, Thermo-Hygrometer, Humidity Meters, Humidity Sensor	10 % RH to 90 % RH	2 % RH	Hygrometer Vaisala MI70 / HMP76	CENAM Technical Guide	F1, F2	F
Thermodynamic	Glass Liquid Thermometers	-35 °C to 150 °C	0.064 °C	Sensor RPT (KAYE IR TD400)	NOM-011-SCFI (Clause: 5.11)	F1, F2	F



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Thermodynamic	Glass Liquid Thermometers	151 °C to 200 °C	0.28 °C	Sensor RPT (KAYE IR TD400)	NOM-011-SCFI (Clause: 5.11)	F1, F2	F
Thermodynamic	Glass Liquid Thermometers	201 °C to 300 °C	0.28 °C	Sensor RPT (KAYE IR TD400)	NOM-011-SCFI (Clause: 5.11)	F1, F2	F
Thermodynamic	Glass Liquid Thermometers	301 °C to 400 °C	0.28 °C	Sensor RPT (KAYE IR TD400)	NOM-011-SCFI (Clause: 5.11)	F1, F2	F
Thermodynamic	Bimetallic Thermometer	-35 °C to 150 °C	0.14 °C	(Sensor RPT (KAYE IR TD400))	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O
Thermodynamic	Bimetallic Thermometer	151 °C to 400 °C	0.21 °C	((KAYE IR TD400))	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O
Thermodynamic	Industrial Thermometer Indicator and Sensor type RTD, Thermistor, Thermocouple	-35 °C to 150 °C	0.052 °C	Sensor RPT (KAYE IR TD400)	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O
Thermodynamic	Industrial Thermometer Indicator and Sensor type RTD, Thermistor, Thermocouple	151 °C to 200 °C	0.14 °C	Sensor RPT (KAYE IR TD400)	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O
Thermodynamic	Industrial Thermometer Indicator and Sensor type RTD, Thermistor, Thermocouple	201 °C to 300 °C	0.14 °C	Sensor RPT (KAYE IR TD400)	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O
Thermodynamic	Industrial Thermometer Indicator and Sensor type RTD, Thermistor, Thermocouple	301 °C to 400 °C	0.14 °C	Sensor RPT (KAYE IR TD400)	NMX-CH-070-SCFI (Clause: 5.9)	F1, F2	F, O



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1. The CMC (Calibration and Measurement Capability) is expressed in terms of measurement instrument/aspect being calibrated, range, expanded measurement uncertainty, equipment, and method/procedure. The expanded measurement uncertainty 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 measurement uncertainty included on this scope 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 laboratory's range of calibration capability for all disciplines for which it is 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. Location of activity:

Location Code	Location
F	Conformity assessment activity is performed at the CAB's fixed facility
O	Conformity assessment activity is performed onsite at the CAB's customer location
4. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratory's 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 laboratory's fixed location.
5. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.
6. Flex Codes

F0: When no flexibility is identified. There are no changes to items calibrated, characteristics identified or versions of methods except for updating to the most recent version of a standard method after verification.
F1: The laboratory has the capability to introduce a new instrument, quantity, or gauge for an accredited calibration method.
F2: The laboratory has the capability to introduce the newest revision of an accredited authoritative standard method (with no modifications) identified on the scope
F3: The laboratory has the capability to introduce a new revision of an accredited non-standard method using the same technology or technique identified on the scope
F4: The laboratory has the capability to introduce a validated method that is equivalent to an accredited method (using the same Calibration Equipment or Reference Standards identified on the scope for the same parameter, component, or analyte identified on the line item of the scope.