



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Calibraciones e Instrumentos / Avisail Flores Luna

***Calle Brillante #1576, Col. Mariano Otero
Zapopan, Jalisco, México. C.P. 45067***

*(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):

***Mass, Force and Weighing Devices, Thermodynamic, Dimensional and
Mechanical 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:

February 03, 2021

Issue Date:

February 03, 2021

Expiration Date:

April 30, 2023

Revision Date:

January 17, 2022

Accreditation No.:

112124

Certificate No.:

L21-85-R1

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

Calibraciones e Instrumentos / Avisail Flores Luna

Calle Brillante #1576, Col. Mariano Otero
Zapopan, Jalisco, México. C.P.45067
Contact Name: Gerardo Baez Phone: 333-125-1051

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
Electronic Balance ^O	1 g to 100 g (Res.= 0.000 05 g)	$(7.6 \times 10^{-5} + 4 \times 10^{-6} \text{Wt})$ g	Class Weight F1 Euramet cg-18
	100 g to 500 g (Res.= 0.000 2 g)	$(2.1 \times 10^{-5} + 4 \times 10^{-6} \text{Wt})$ g	
Balance ^O	500 g to 1 000g (Res.= 0.000 5 g)	$(7.38 \times 10^{-4} + 5 \times 10^{-6} \text{Wt})$ g	Class Weight M1 Euramet cg-18
	1 000 g to 5 000g (Res.= 0.002 g)	$(2.03 \times 10^{-4} + 4 \times 10^{-6} \text{Wt})$ g	
	5 000 g to 20 000g (Res.= 0.02 g)	$(6.01 \times 10^{-3} + 5 \times 10^{-6} \text{Wt})$ g	
	20 000 g to 100 000g (Res.= 0.05 g)	$(4.46 \times 10^{-1} + 3.1 \times 10^{-5} \text{Wt})$ g	
	100 000 g to 500 000g (Res.= 1 g)	$(2.43 \times 10^{-2} + 3.5 \times 10^{-5} \text{Wt})$ g	
	500 000 g to 1 000 000g (Res.= 1 g)	$(3.38 \times 10^{-1} + 3.5 \times 10^{-5} \text{Wt})$ g	
Weight M1 ^F	20 kg	340 mg	Class Weight F1 OIML R111 CENAM Technical Guide Method ABBA
	10 kg	170 mg	
	5 kg	83 mg	
	2 kg	33mg	
	1 kg	17 mg	
	500 g	8.3 mg	
	200 g	3.3 mg	
	100 g	1.7 mg	
	50 g	1 mg	
	20 g	0.83 mg	
	10 g	0.67 mg	
	5 g	0.53 mg	
	2 g	0.4 mg	
	1 g	0.33 mg	
Weight M2 ^F	20 kg	550 mg	Class Weight M1 OIML R111 Method ABBA
	10 kg	550 mg	
	5 kg	270 mg	Class Weight F1 OIML R111 Method ABBA
	2 kg	100 mg	
	1 kg	53 mg	



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Weight M2 ^F	500 g	27 mg	Class Weight F1 OIML R111 Method ABBA
	200 g	10 mg	
	100 g	5.3 mg	
	50 g	3.3 mg	
	20 g	2.5 mg	
	10 g	2 mg	
	5 g	1.7 mg	
	2 g	1.3 mg	
	1 g	1 mg	
Weight M3 ^F	20 kg	3 400 mg	Class Weight M1 OIML R111 Method ABBA
	10 kg	1 700 mg	
	5 kg	840 mg	
	2 kg	340 mg	Class Weight F1 OIML R111 Method ABBA
	1 kg	170 mg	
	500 g	83 mg	
	200 g	33 mg	
	100 g	17 mg	
	50 g	10 mg	
	20 g	8.3 mg	
	10 g	6.7 mg	
	5 g	5.3 mg	
	2 g	4 mg	
	1 g	3.3 mg	
Force Machines Compression ^F	29 kN to 290 kN	0.25 % of reading	ISO-7500-1 NMX-CH-7500-1 Load Cells
Force Machines Compression and Traction ^F	4.4 kN to 44 kN	0.27 % of reading	
	0.98 kN to 9.58 kN	0.25 % of reading	
	0.22 kN to 2.2 kN	0.25 % of reading	



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

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
Direct Reading Thermometer ^F O	-30 °C to 100 °C	0.6 °C	Platinum Resistance (Res.= 0.001 °C) Euramet cg-11
	100 °C to 500 °C	0.7 °C	
Thermohygrometer (Humidity) ^F	20 % RH to 95 % RH	$(1.3 + 3.8 \times 10^{-3})$ % RH	Vaisala MMP76 & MI70 Humidity Euramet cg-20
Thermohygrometer (Temperature) ^F	5 °C to 85 °C	0.7 °C	Vaisala MMP76 & MI70 Temperature Euramet cg-20

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
Calipers ^F	Up to 1 000 mm	$(12.1 + 3.5 \times 10^{-3}L)$ μ m	Set Block Gage Grade 0 or 1 and Step Master JIS B 7507 NMX-CH-002-IMNC
Micrometers ^F	0.5 mm to 1 000 mm	$(7.84 \times 10^{-1} + 1.04 \times 10^{-2}L)$ μ m	Set Block Gage Grade 0 JIS B 7502 NMX-CH-099-IMNC
Indicators ^F	0.5 mm to 25.4 mm	2.2 μ m	Mitutoyo Calibration Tester JIS B 7503 NMX-CH-463-IMNC
Height Gauges ^F	0.5 mm to 1 000 mm	$(13.6 + 5 \times 10^{-3}L)$ μ m	Master Block 0 or 1 JIS B 7517 NMX-CH-141-INMC

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
Pressure Gage ^F	-96.52 kPa to 1 034.2 kPa	8.3 kPa	Druck DPI 610 NOM-013-SCFI OIML R101
	1.03 MPa to 17.23 MPa	9.6×10^{-3} Mpa	



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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^F 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^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 Wt represents weight in pounds or grams (including SI multiple and submultiple units) appropriate to the uncertainty statement.