



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Laboratorio de Metrología del Instituto de Ciencias Aplicadas y Tecnología - ICAT/UNAM

***Circuito Exterior S/N, Ciudad Universitaria
Coyoacán, Ciudad de México, México. C.P. 04510***

*(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 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:

November 24, 2009

Issue Date:

October 07, 2020

Expiration Date:

November 30, 2022

Accreditation No.:

56239

Certificate No.:

L20-593

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

Laboratorio de Metrología del Instituto de Ciencias Aplicadas y Tecnología - ICAT/UNAM

Circuito Exterior S/N Ciudad Universitaria,
Coyoacán, Ciudad de México, México. C.P. 04510
Contact Name: Sergio Padilla Olvera Phone: 555-622-8602

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

Dimensional

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
Gage Blocks ^F	0.5 mm to 100 mm	$(0.054 + 1 \times 10^{-3}L) \mu\text{m}$	Gage Block Comparator and Master Blocks MPT-01
Length Bar ^F	25 mm to 1 000 mm	$(0.12 + 3 \times 10^{-3}L) \mu\text{m}$	Laser Measurement System MPT-02
Angle. Measures of Small Angles. ^F	0.001 7° to 0.25°	0.000 55°	Autocollimator or Electronic Level MPT-05
Angle Calibration of Optical Polygons ^F	0.001 7° to 360° Steps 30 Deg	0.000 55°	Autocollimator Optical Polygon MPT-29
Optical Flats and Optical Parallels (25 mm to 60 mm in Diameter) ^F	0.1 μm to 4 μm	0.03 μm	Fizeau Interferometer MPT-04
Optical Flats and Optical Parallels (60 mm to 120 mm in Diameter) ^F	0.4 μm to 5 μm	0.06 μm	
Surface Plates Flatness ^{FO}	8 in to 72 in	$(79 + 5D) \mu\text{in}$	Electronic Level MPT-03
Squareness of Flat and Circular Squareness (100 mm to 600 mm) ^{FO}	90°	$(5.5 \times 10^{-4} + 5.5 \times 10^{-7}L) ^\circ$	Autocollimator or Laser Measurement System MPT-14
Optical Comparators Linear ^{FO}	10 mm to 100 mm	8 μm	Standard Scale, 1951 USAF Resolution Target Star Target MPT-10
Optical Comparators Magnification ^{FO}	5X	0.02X	
	10X	0.02X	
	20X	0.02X	
	30X	0.02X	
	50X	0.02X	
	100X	0.02X	
Optical Comparators Angularity ^O	360°	0.021°	
Angle. Calibration of Electronic Levels ^F	0.001 7° to 0.56°	0.000 55°	Laser Measurement System MPT-08



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Angle. Calibration of Precision Levels ^F	0.001 7° to 0.56°	0.000 55°	Electronic Level MPT-09
Height Gage, Riser Block ^{FO}	600 mm	(1.2 + L/150) μ m	Master Blocks (112 pcs.), Long Block Set (8 pcs.) Electronic Gage System MPT-15
Height Master ^{FO}	10 mm to 20 mm	(1.1 + L/50) μ m	
Caliper Checker ^{FO}	300 mm to 600 mm	(0.6 + L/150) μ m	Master Blocks (112 pcs.), Long Block Set (8 pcs.) Electronic Gage System MPT-15
Dial Test Indicator, Linear and Lever Gage Head ^{FO}	5 mm	0.7 μ m	Master Blocks, Laser Measurement System MPT-21, MPT-37

- 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 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 D represents diameter in inches or millimeters as appropriate to the uncertainty statement.
- The term L represents length in inches or millimeters as appropriate to the uncertainty statement.