PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

SG Metrology Solutions, S.A. de C.V.

Arroyo el Rincón 2213, Colonia Los Arroyos
Chihuahua, Chihuahua, México. C.P. 31125

(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, Mass, Force and Weighing Devices, Dimensional and Time and Frequency 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

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
July 11, 2024	July 11, 2024	October 31, 2026

Accreditation No.:	*Certificate No.:*
127416	L24-537

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.pjlabs.com

Certificate of Accreditation: Supplement

SG Metrology Solutions, S.A. de C.V.
Arroyo el Rincón 2213, Colonia Los Arroyos
Chihuahua, Chihuahua, México. C.P. 31125
Contact Name: Mauricio Sanchez Phone: 614-102-6896

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

Mechanical

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
Indirect Verification of Rockwell Hardness Tester HRA[FO]	20 HRA to 69 HRA	0.27 HRA	Test Block	ASTM E18
	70 HRA to 79 HRA	0.19 HRA		
	80 HRA to 98 HRA	0.19 HRA		
Indirect Verification of Rockwell Hardness Tester HRBW[FO]	10 HRBW to 59 HRBW	0.27 HRBW		
	60 HRBW to 87 HRBW	0.43 HRBW		
	88 HRBW to 99 HRBW	0.40 HRBW		
Indirect Verification of Rockwell Hardness Tester HRC[FO]	10 HRC to 34 HRC	0.50 HRC		
	35 HRC to 59 HRC	0.43 HRC		
	60 HRC to 70 HRC	0.37 HRC		
Indirect Verification of Rockwell Hardness Tester HREW[FO]	60 HREW to 83 HREW	0.44 HREW		
	84 HREW to 92 HREW	0.21 HREW		
	93 HREW to 99 HREW	0.53 HREW		
Indirect Verification of Rockwell Hardness Tester HRHW[FO]	70 HRHW to 95 HRHW	0.46 HRHW		
	96 HRHW to 99 HRHW	0.43 HRHW		
Indirect Verification of Rockwell Hardness Tester HR15TW[FO]	60 HR15TW to 80 HR15TW	0.49 HR15TW		
	81 HR15TW to 86 HR15TW	0.40 HR15TW		
	87 HR15TW to 99 HR15TW	0.31 HR15TW		
Indirect Verification of Rockwell Hardness Tester HR30TW[FO]	40 HR30TW to 56 HR30TW	0.61 HR30TW		
	57 HR30TW to 69 HR30TW	0.25 HR30TW		
	70 HR30TW to 90 HR30TW	0.34 HR30TW		
Indirect Verification of Rockwell Hardness Tester HR45TW[FO]	20 HR45TW to 32 HR45TW	0.70 HR45TW		
	33 HR45TW to 52 HR45TW	0.42 HR45TW		
	53 HR45TW to 70 HR45TW	0.44 HR45TW		
Indirect Verification of Rockwell Hardness Tester HR15N[FO]	50 HR15N to 77 HR15N	0.41 HR15N		
	78 HR15N to 89 HR15N	0.44 HR15N		
	90 HR15N to 99 HR15N	0.51 HR15N		
Indirect Verification of Rockwell Hardness Tester HR30N[FO]	35 HR30N to 54 HR30N	0.30 HR30N		
	55 HR30N to 76 HR30N	0.31 HR30N		
	77 HR30N to 99 HR30N	0.31 HR30N		

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Mechanical

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Indirect Verification of Brinell Hardness Tester HBW 10/500[FO]	50 HBW to 125 HBW	1.2 HBW	Test Block	ASTM E10 ASTM E110
	126 HBW to 224 HBW	2 HBW		
Indirect Verification of Brinell Hardness Tester HBW 5/250[FO]	50 HBW to 125 HBW	1.5 HBW		
	126 HBW to 224 HBW	2.7 HBW		
Indirect Verification of Brinell Hardness Tester HBW 10/1500[FO]	50 HBW to 125 HBW	0.62 HBW		
	126 HBW to 224 HBW	1.3 HBW		
Indirect Verification of Brinell Hardness Tester HBW 10/3 000[FO]	50 HBW to 125 HBW	0.72 HBW		
	126 HBW to 224 HBW	1.0 HBW		
Indirect Verification of Leeb Hardness HLD[FO]	500 HLD to 800 HLD	6.9 HLD	Test Block	ASTM A956/A956M
Pressure Gauges[FO]	5 psi to 60 psi (0.034 MPa to 0.41 MPa)	0.022 psi (151.7 Pa)	Digital Manometer	DKD-R 6-1
Pressure Tester[FO]	5 psi to 60 psi (0.034 MPa to 0.41 MPa)	0.019 psi (131 Pa)	Digital manometer	DKD-R 6-1

Mass, Force and Weighing Devices

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
Force Machine Traction and Force Gages Traction[FO]	4.4482 N to 93.41 N	0.087 % of reading	Master Weights	ISO 7500-1 ASTM E4
	4.2 N to 110 N	0.088 % of reading	Load Cell	
	98 N to 978 N	0.034 % of reading		
	0.98 kN to 9.8 kN	0.097 % of reading		
	9.8 kN to 98 kN	0.068 % of reading		
	29.42 kN to 294.2 kN	0.20 % of reading		
Force Machine Traction and Force Gages Compression[FO]	4.4482 N to 93.41 N	0.091 % of reading	Master Weights	
	4.2 N to 110 N	0.14 % of reading	Load Cell	
	98 N to 978 N	0.043 % of reading		

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

Mass, Force and Weighing Devices

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
Force Machine Traction and Force Gages Compression[FO]	0.98 kN to 9.8 kN	0.15 % of reading	Load Cell	ISO 7500-1 ASTM E4
	9.8 kN to 98 kN	0.12 % of reading		
	29.42 kN to 294.2 kN	0.16 % of reading		

Dimensional

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
Extensometers[O]	0.01 mm to 50 mm	3.4 µm	Micrometer Head	ASTM E83
Crosshead Travel[O]	2 mm to 100 mm	8.1 µm	Digital Indicator	ASTM E2309/ E2309M

Time and Frequency

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
Universal Testing Machine Crosshead Speed[O]	0.05 mm/min to 100 mm/min	0.069 mm/min	Digital Indicator and Stopwatch	ASTM E2658

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.

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

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. The presence of a superscript O means that the laboratory performs calibration of the indicated parameter onsite at customer locations.
7. 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.