PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Oscar Carballo Santiago/ Electronic Systems

Mariano Escobedo # 217, Col. El Huerto Centro
Cuautitlán, Estado de México, México. C.P. 54807

(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 2017):

Dimensional, Chemical, Optical, Mass, Force and Weighing Devices, Mechanical and Thermodynamic 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:*
June 16, 2024	June 16, 2024	July 31, 2026

Accreditation No.:	*Certificate No.:*
123586	L24-446

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

Oscar Carballo Santiago/ Electronic Systems

Mariano Escobedo # 217, Col. El Huerto Centro
Cuautitlán, Estado de México, México. C.P. 54807
Contact Name: Oscar Carballo Santiago Phone: 552-620-2141

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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Filler Gages[O]	0.5 mm to 5 mm	$(1.63 \times 10^{-2}\ 4.02 \times 10^{-5}L)$ mm	Micrometer	JIS B 7524
Micrometer[O]	0.5 mm to 25.4 mm	$(2.78 \times 10^{-3} + 4.02 \times 10^{-5}L)$ mm	Block Gage	CEM/DI-021
Caliper[O]	0.5 mm to 200 mm	$(1.64 \times 10^{-2} + 5.01 \times 10^{-7}L)$ mm		CEM /DI-008
Height Gage[O]	0.5 mm to 200 mm	$(2 \times 10^{-2} + 1.85 \times 10^{-5}L)$ mm		CEM /DI-004

Chemical

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
pH Meter[FO]	4.01 pH	0.013 pH	pH Buffers solutions Fixed Points	CEM/QU-003
	7 pH	0.013 pH		
	10.01 pH	0.013 pH		

Optical

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
Refractometer[O]	0 °Brix to 90 °Brix (Up to 1.44 IR)	2 °Brix (0.002 IR)	Reference Material	OIML R 142

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
Analytical Balance[O]	1 mg to 200 g (Res.= 0.0001 g)	$(2 \times 10^{-4} + 2.92 \times 10^{-5}Wt)$ g	Mass Class F	CEM/ME-005
Balance[O]	0.01 kg to 10 kg (Res.= 0.001 kg)	$(1.3 \times 10^{-3} + 3.45 \times 10^{-2}Wt)$ kg	Mass Class F and Class M1	
Platform Scales[O]	1 kg to 500 kg (Res.= 0.01 kg)	$(2.91 \times 10^{-2} + 5.14 \times 10^{-3}Wt)$ kg	Class M1	
	500 kg to 2 000 kg (Res.= 0.2 kg)	$(4.52 \times 10^{-2} + 4.7 \times 10^{-2}Wt)$ kg		

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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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Viscosity Meter[O]	100 cP to 30 000 cP	1 % of reading	Reference Material	ISO 3104:2023

Thermodynamic

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 Bath[O]	0 °C to 80 °C	3 °C	Temperature Calibrator	CEM/TH-001
Refrigerators[O]	0 °C to 10 °C	1 °C		
Freezer[O]	-80 °C to 10 °C	3 °C		
Thermometer	-20 °C to 1 200 °C	2 °C	Temperature Monitor and Calibrator	
Incubator[O]	5 °C to 60 °C	2 °C		
Autoclave[O]	20 °C to 150 °C	2 °C	Standard Thermometer	
Stoves[O]	20 °C to 300 °C	2 °C		
Oven[O]	20 °C to 500 °C	2 °C	Temperature Monitor and Calibrator	
Muffles[O]	20 °C to 1 200 °C	2 °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.

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

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

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.

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

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

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

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

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