



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Stadia Servicios de Calibración / Rodolfo Ley Castro
San Pedro Mezquital No. 4175, Colonia Mirasol
Mexicali, Baja California, México. C.P. 21396

(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, Thermodynamic, Mechanical, Mass, Force and Weighing Devices, Acoustic, Electrical 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:

Initial Accreditation Date:

October 25, 2017

Issue Date:

January 23, 2020

Expiration Date:

January 31, 2022

Tracy Szerszen
President/Operations Manager

Accreditation No.:

93557

Certificate No.:

L20-43

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

Stadia Servicios de Calibración / Rodolfo Ley Castro

San Pedro Mezquital No. 4175, Col. Mirasol
 Mexicali, Baja California, México C.P. 21396
 Contact Name: Rodolfo Ley Castro Phone: 686-185-3236

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

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
Caliper ^F	0.1 in to 40 in	(620 + 2.4L) μ m	Block Grade 0 JIS B 7507
Dial Indicator ^F	0.000 1 in to 2 in	(375 + 2.4L) μ m	Block Grade 0 JIS B 7533
Micrometer ^F	0.1 in to 4 in	(59 + 2.1L) μ m	Block Grade 0 JIS B 7502
Height Gage ^F	0.1 in to 48 in	(582 + 2.2L) μ m	Block Grade 0 JIS B 7517
Surface Plate Flatness Measurement ^O	4 to 120 in /Diagonal	51 μ m	Planekator with Indicator ASME B89.3.7
Surface Repeat Reading Measurement ^O	20 μ m to 500 μ m	36 μ m	Repeat Readings Gage with Indicator ASME B89.3.7

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
Oven (Furnace) Temperature Uniformity Test ^O	60 °C to 1 205 °C	(2 + 2 x 10 ⁻³ T) °C	Thermocouple Data Logger Multithread SX AMS 2750
Oven (Furnace) System Accuracy Test ^O	60 °C to 1 205 °C	(2 + 2 x 10 ⁻³ T) °C	Thermocouple Calibrator Fluke 714B AMS 2750
IR Thermometer ^F	10 °C to 100 °C	1.4 °C	BX-500 Infrared Calibrator ASTM E2847
	101 °C to 200 °C	2.5 °C	
	201 °C to 500 °C	3.8 °C	
Hygrometer ^F	10 % RH to 90 % RH	1.2 % RH	Humidity Chamber and Vaisala M170/ HMP76B ASTM E104

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 Top Loading Balance ^O	1 mg to 6 000 mg	(0.25 + 1.8 x 10 ⁻⁴ Wt) mg	Class F Weights OILM R076
Bench Scale ^O	0.0005 kg to 45 kg	(1.32 x 10 ⁻⁴ + 2.3 x 10 ⁻⁵ Wt) kg	



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Mechanical

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Pressure Gage ^{FO}	-14.7 psi to 30 psi	0.15 psi	Fluke 700G04 CPG2500 Mensor Pressure Gage DKD-R 6-0
	31 psi to 500 psi	0.45 psi	
	501 psi to 3 000 psi	2.4 psi	
Indirect Verification of Rockwell Hardness Tester HRC ^{FO}	20 HRC to 34 HRC	0.51 HRC	Hardness Test Blocks ASTM E18
	35 HRC to 59 HRC	0.50 HRC	
	60 HRC to 70 HRC	0.51 HRC	
Indirect Verification of Rockwell Hardness Tester HRBW ^{FO}	20 HRBW to 59 HRBW	0.51 HRBW	Hardness Test Blocks ASTM E18
	60 HRBW to 87 HRBW	0.50 HRBW	
	88 HRBW to 100 HRBW	0.49 HRBW	
Indirect Verification of Rockwell Hardness Tester HREW ^{FO}	69 HREW to 83 HREW	0.42 HREW	
	84 HREW to 92 HREW	0.47 HREW	
	93 HREW to 100 HREW	0.48 HREW	

Time and Frequency

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
Timers, Stopwatch ^{FO}	10 ms to 86 400 s	4.8 ms	Frequency Counter NIST 960-12

Electrical

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
Electrical Simulation of Temperature Controllers ^{FO}	10 °F to 2 000 °F	3.1 °F	Fluke 702 Thermocouple Calibrator ASTM E230/230M
Temperature Calibration Indication and Control Equipment used with Thermocouple Type B ^{FO}	600 °C to 800 °C	1.6 °C	Fluke 702 Electrical Simulation of Thermocouple Output ASTM E230/230M
	800 °C to 1 000 °C	1.3 °C	
	1 000 °C to 1 820 °C	1.2 °C	



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Temperature Calibration Indication and Control Equipment used with Thermocouple Type E ^{FO}	250 to -200 °C	1.6 °C	Fluke 702 Electrical Simulation of Thermocouple Output ASTM E230/230M
	-200 °C to -100 °C	0.59 °C	
	-100 °C to 600 °C	0.4 °C	
	600 °C to 1 000 °C	0.65 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type J ^{FO}	-210 °C to -100 °C	0.42 °C	
	-100 °C to 800 °C	0.37 °C	
	800 °C to 1 200 °C	0.61 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type K ^{FO}	-200 °C to -100 °C	0.49 °C	
	-100 °C to 400 °C	0.31 °C	
	400 °C to 1 200 °C	0.4 °C	
	1 200 °C to 1 372 °C	0.49 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type N ^{FO}	-200 °C to -100 °C	0.48 °C	
	-100 °C to 900 °C	0.22 °C	
	900 °C to 1 300 °C	0.33 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type S ^{FO}	-20 °C to 0 °C	2.5 °C	
	0 °C to 100 °C	4.7 °C	
	100 °C to 1 767 °C	1.7 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type T ^{FO}	-250 °C to -200 °C	0.56 °C	
	-200 °C to 0 °C	0.28 °C	
	0 °C to 400 °C	0.2 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 3926, 100 Ω ^{FO}	-200 °C to 0 °C	0.4 °C	Fluke 702 Electrical Simulation of RTD Output ASTM E1137
	0 °C to 630 °C	0.6 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 3916, 100 Ω ^{FO}	-200 °C to -190 °C	0.4 °C	
	-190 °C to 0 °C	0.4 °C	
	0 °C to 630 °C	0.6 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 385, 200 Ω ^{FO}	-200 °C to 0 °C	0.4 °C	
	0 °C to 400 °C	0.6 °C	
	400 °C to 630 °C	0.96 °C	



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Temperature Calibration Indication and Control Equipment used with RTD Pt 385, 500 Ω^{FO}	-200 to 0 °C	0.4 °C	Fluke 702 Electrical Simulation of RTD Output ASTM E1137
	0 °C to 400 °C	0.6 °C	
	400 °C to 630 °C	0.96 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 385, 1 Ω^{FO}	-200 °C to 0 °C	0.4 °C	
	0 °C to 400 °C	0.6 °C	
	400 °C to 630 °C	0.96 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt Ni 672, 120 Ω^{FO}	-80 °C to 260 °C	0.4 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt Cu 427, 10 Ω^{FO}	-100 °C to 0 °C	2.4 °C	
	0 °C to 260 °C	2.4 °C	
Equipment to Source DC Voltage ^{FO}	1 mV to 100 mV	40 μ V	Fluke 702 ASTM E1137
	0.11 V to 1.1 V	0.19 mV	
	1.1 V to 11 V	1.1 mV	
Equipment to Source DC Current ^{FO}	4 mA to 22 mA	0.72 mA	
Equipment to Source Resistance ^{FO}	1 K Ω to 11 Ω	2.8 M Ω	
	11 K Ω to 110 Ω	11 M Ω	
	0.11 K Ω to 1.1 K Ω	1.6 Ω	
	1.1 K Ω to 11 K Ω	17 Ω	
Equipment to Measure DC Voltage ^{FO}	1 mV to 100 mV	2.7 mV	
	0.1 V to 10 V	3.8 mV	
	10 V to 100 V	40 mV	
	100 V to 1000 V	0.25 V	
Equipment to Measure DC Current ^{FO}	0.1 mA to 1 mA	43 μ A	
	1 mA to 100 mA	78 μ A	
	0.1 A to 3 A	98 mA	
Equipment to Measure AC Voltage At the listed frequency 10 Hz to 20 KHz ^{FO}	0.1 V to 750 V	52 mV	



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Equipment to Measure Resistance ^{FO}	1 Ω to 100 Ω	42 M Ω	Fluke 702 ASTM E1137
	100 Ω to 1 K Ω	0.52 Ω	
	1 K Ω to 10 K Ω	6.3 Ω	
	0.1 K Ω to 1 M Ω	53 Ω	
	1 M Ω to 10 M Ω	12 K Ω	
	10 M Ω to 100 M Ω	60 K Ω	
	100 M Ω to 1 G Ω	77 K Ω	

Acoustic

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
Sound Level Source ^O	94 dB to 114 dB	0.6 dB	Sound Level Calibration ANSI/ASA S1.4

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.



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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 T represents temperature in °C or °F 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.

