PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

P&P Calibration Lab

Bo. Pájaros, Calle Cipres 139C, Toa Baja, Puerto Rico 00951

and hereby declares that the Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

Whereby, technical competence has been confirmed for the associated scope supplement, in the fields of:

Electrical, Dimensional, Mechanical and Time and Frequency Calibration

(As detailed in the supplement)

Accreditation claims for conformity assessment activities shall only be made from the addresses referenced within this certificate and shall apply solely to those activities identified in the related scope. This Accreditation is granted subject to the Accreditation Body rules governing the Accreditation referred to above, and the Organization hereby commits to observing and complying with those rules in their entirety.

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:*
January 20, 2025	January 20, 2025	February 28, 2027

Accreditation No.:	*Certificate No.:*
75260	L25-46

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

P&P Calibration Lab

Bo. Pájaros, Calle Cipres 139C, Toa Baja, Puerto Rico 00951
Contact Name: Gabriel Parra Phone: 101-507-316-0174

Accreditation is granted to the facility to perform the following conformity assessment activities:

FIELD OF CALIBRATION	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	LOCATION OF ACTIVITY
Dimensional	Indicator	0.001 mm to 508 mm	(0.78 + 0.06 L) µm	Gage Block Set – Grade 0 Surface Plate	CP-002	FO
		0.000 05 in to 20 in	(31+ 2.5 L) µin			
	Caliper	0.001 mm to 1 040 mm	(12.39 + 0.06 L) µm		CP-003	FO
		0.000 5 in to 41in	(488 + 2.5 L) µin			
	Micrometer	0.001 mm to 1 040 mm	(0.64 + 0.06 L) µm		CP-006	FO
		0.000 5 in to 41 in	(25.19 + 2.5 L) µin			
	Crimping Tools - Crimping Chamber	0.279 mm to 15.875 mm	1.6 µm	Pin Gage Sets - Class ZZ	CP-004	FO
		0.011 in to 0.625 in	62 µin			
	Angle Measuring devices	0 º to 10 º	0.026º	Angle Gauge Blocks	CP-016	FO
		11º to 360 º	0.062º			
	Profilometer	16 uin RA	2.1 uin	Reference specimen Blocks	CP022	FO
		119 uin RA	2.1 uin			
	Feeler gage & Dimensional Gage	Up to 25 mm	2.2 um	Digital Micrometer/ Caliper	CP024	FO
		25 mm to 300 mm	12 um			
Mechanical	Torque Wrench	4 lbf•in to 7 200 lbf•in	0.4 % of reading	CDI Multitest 600TL2	CP-005	FO
		0.33 lbf•ft to 600 lbf•ft				
	Force Tensiometer	Up to 500 lb	0.64 %	Accuforce 500	CP007	FO
	Pressure Gage	-13.5 psi to 1 000 psi	0.16 psig	Additel ADT681/GP1K	CP-008	FO
		1 001 psi to 10 000 psi	1.9 psig	Additel ADT681/GP10K		FO
	Equipment to Measure Rockwell Hardness	53.10 HRBW	0.50 HRBW	Rockwell Test Blocks	CP025	FO
		77.38 HRBW	0.59 HRBW			
		94.05 HRBW	0.62 HRBW			
		64.61 HRC	0.35 HRC			

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Electrical	Equipment to measure DC Voltage	Up to 104 mV	8×10^{-5} V/V + 1.1×10^{-5} V	Transmille 1000	CP-009	FO
		0.104 V to 1.04 V	8×10^{-5} V/V + 6.6×10^{-5} V			
		1.04 V to 10.4 V	8×10^{-5} V/V + 6.6×10^{-4} V			
		10.4 V to 104 V	8×10^{-5} V/V + 6.6×10^{-3} V			
		104 V to 1 000 V	8×10^{-5} V/V + 6.6×10^{-2} V			
	Equipment to measure DC Current	Up to 104 uA	3.0×10^{-4} A/A + 3.1×10^{-8} A			FO
		0.104 mA to 1.04 mA	3.0×10^{-4} A/A + 5.9×10^{-7} A			
		1.04 mA to 10.4 mA	3.0×10^{-4} A/A + 1.7×10^{-6} A			
		10.4 mA to 104 mA	3.0×10^{-4} A/A + 1.3×10^{-5} A			
		0.104 A to 1.04 A	3.0×10^{-4} A/A + 2.5×10^{-4} A			
		1.04 A to 10.4 A	5.0×10^{-4} A/A + 3.0×10^{-3} A			
	Equipment to measure AC Voltage (at the listed frequencies)					FO
	2 000 Hz	104 mV	8.0×10^{-4} V/V + 5.6×10^{-5} V			
	20 kHz	104 mV	1.5×10^{-3} V/V + 8.5×10^{-5} V			
	Equipment to measure AC Voltage (at the listed frequencies)					FO
	2 000 Hz	1.04 V	8.0×10^{-4} V/V + 3.3×10^{-4} V			
	20 kHz	1.04 V	1.5×10^{-3} V/V + 7.2×10^{-4} V			
	Equipment to measure AC Voltage (at the listed frequencies)					FO
	2 000 Hz	10.4 V	8.0×10^{-4} V/V + 3.3×10^{-3} V			
	20 kHz	10.4 V	1.5×10^{-3} V/V + 7.1×10^{-3} V			

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Electrical	Equipment to measure AC Voltage (@ 1 kHz)	104 V	8.0×10^{-4} V/V + 3.3×10^{-2} V	Transmille 1000	CP-009	FO
		1 020 V	8.0×10^{-4} V/V + 3.3×10^{-1} V			
	Equipment to measure AC Current (@ 10 Hz to 2kHz)	Up to 104 uA	1.0×10^{-3} A/A + 4.6×10^{-7} A			FO
		0.104mA to 1.04 mA	1.0×10^{-3} A/A + 1.2×10^{-6} A			
		1.04 mA to 10.4 mA	1.0×10^{-3} A/A + 8.4×10^{-6} A			
		10.4mA to 104 mA	1.0×10^{-3} A/A + 1.1×10^{-4} A			
		0.104 A to 1.04 A	1.0×10^{-3} A/A + 1.9×10^{-3} A			
		1.04 A to 10.4 A	1.0×10^{-3} A/A + 2.4×10^{-2} A			
	Equipment to measure Resistance	Up to 100 Ω	1.3×10^{-4} Ω/Ω + 3.4×10^{-2} Ω			FO
		100 Ω to 1.0 kΩ	1.3×10^{-4} Ω/Ω + 6.8×10^{-2} Ω			
		1.01 kΩ to 10 kΩ	1.3×10^{-4} Ω/Ω + 6.0×10^{-1} Ω			
		10.1 kΩ to 100 kΩ	1.3×10^{-4} Ω/Ω + 6 Ω			
		101 kΩ to 1.0 MΩ	1.3×10^{-4} Ω/Ω + 6.1×10^{1} Ω			
		1.01M Ω to 10 MΩ	1.3×10^{-4} Ω/Ω + 6.5×10^{2} Ω			
		10M Ω to 100 MΩ	3.3×10^{-4} Ω/Ω + 6.1×10^{4} Ω			
	Equipment to measure Resistance (Insulation)	250 kΩ to 100 MΩ (100 V)	8.0×10^{-5} Ω/Ω + 1.2×10^{-2} MΩ	Transmille 1000 Megger CB101	CP-010	FO
		250 kΩ to 250 MΩ (250V)	8.0×10^{-5} Ω/Ω + 1.3×10^{-2} MΩ			
		500 kΩ to 500 MΩ (500 V)	8.0×10^{-5} Ω/Ω + 1.3×10^{-2} MΩ			
		1 MΩ to 1 000 MΩ (1 000 V)	8.0×10^{-5} Ω/Ω + 2.8×10^{-2} MΩ			

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Electrical	Equipment to measure Resistance (Insulation)	1 MΩ to 1 GΩ (1 000 V to 5 000 V)	8.0×10^{-3} Ω/Ω + $1.2\ 10^{-1}$ MΩ	Transmille 1000 Megger CB101	CP-010	FO
		1 GΩ to 10 GΩ (1 000V to 5 000 V)	2.0×10^{-2} MΩ			
	Equipment to measure Capacitance	10 nF	0.014 nF	Transmille 1000 Fluke 8846A	CP-009	FO
		0.1 uF	0.000 58 uF			
		1 uF	0.0011 uF			
	Electrical Temperature Calibration Of Thermocouple Type K	-200 °C to -100 °C	0.21 °C	Transmille 1000	CP-013	FO
		-100 °C to 120 °C	0.2 °C			
		120 °C to 1370 °C	0.21 °C			
	Electrical Temperature Calibration Of Thermocouple Type J	-210 °C to -100 °C	0.17 °C			FO
		-100 °C to 150 °C	0.17 °C			
		150 °C to 760 °C	0.17 °C			
		760 °C to 1 200 °C	0.17 °C			
	Electrical Temperature Calibration Of Thermocouple Type T	-250 °C to -150 °C	0.19 °C			FO
		-150 °C to 400 °C	0.1 °C			
	Electrical Temperature Calibration Of Simulated PRT	-200 °C to 0.01 °C	0.17 °C			FO
		0.01 °C to 800 °C	0.17 °C			
	DC Current Clamp Coil	Up to 500 A	2.6×10^{-3} A/A + 0.23 A	Transmille EA002	CP-011	FO
	AC Current Clamp Coil	Up to 500 A	3.3×10^{-3} A/A + 0.48 A			

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Electrical	Equipment to Output DC Voltage	Up to 100 mV	3.7×10^{-5} V/V + 3.6×10^{-6} V	Fluke 8846A	CP-017	FO
		0.1 V to 1 V	2.5×10^{-5} V/V + 5.9×10^{-5} V			
		1 V to 10 V	2.4×10^{-5} V/V + 5.8×10^{-4} V			
		10 V to 100 V	3.8×10^{-5} V/V + 5.9×10^{-3} V			
		100 V to 1 000 V	4.1×10^{-5} V/V + 5.9×10^{-2} V			
	Equipment to Output DC Current	Up to 100 uA	5.0×10^{-11} A/A + 2.5×10^{-9} A			FO
		0.1 mA to 1 mA	5.0×10^{-11} A/A + 5.2×10^{-9} A			
		1 mA to 10 mA	5.0×10^{-11} A/A + 2.0×10^{-7} A			
		10 mA to 100 mA	5.0×10^{-11} A/A + 5.2×10^{-7} A			
		100 mA to 400 mA	5.0×10^{-11} A/A + $4.x\ 10^{-5}$ A			
		0.4 A to 1 A	5.0×10^{-11} A/A + 2.0×10^{-4} A			
		1 A to 3 A	1.0×10^{-10} A/A + 7.6×10^{-4} A			
		3 A to 10 A	1.5×10^{-10} A/A + 6.0×10^{-3} A			
	Equipment to Measure Resistance WRIST STRAP TESTER	675 kΩ to 750 kΩ	20 kΩ	Desco 07010/ Trasmille 1000A	CP-009	FO
		825 kΩ to 900 kΩ	24 kΩ			
		8.5 MΩ to 9 MΩ	0.25 MΩ			
		11 MΩ to11.5 MΩ	0.33 MΩ			
		80 MΩ	2.4 MΩ			
		120 MΩ	3.5 MΩ			

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Time & Frequency	Equipment to measure Frequency	Up to 999 Hz	0.58 Hz	Transmille 1000	CP-009	FO
		1 kHz to 10 kHz	0.000 63 kHz			
		11 kHz to 100 kHz	0.002 5 kHz			
		1 kHz to 999 kHz	5.8×10^{-3} kHz / kHz + 1.2 kHz			

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. Location of activity:

Location	Location
F	Conformity assessment activity is performed at the CABs fixed facility
O	Conformity assessment activity is performed onsite at the CABs customer location

4. 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.

5. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.
6. This location is linked to International Business Park Blvd., Panama Pacifico Bldg. 3815 Office 204, Panamá Pacifico Republic of Panama due to a shared quality management system