



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Precision Standards International of St. Augustine, Inc.
11337 Distribution Avenue West, Jacksonville, FL 32256

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

**ISO/IEC 17025:2017
& Meets the Requirements of ANSI/NCSI Z540.1-1994
& ANSI/NCSI Z540.3-2006 sub clause 5.3**

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):

Field and Laboratory Calibration of Dimensional, Mechanical (Pressure, Torque & Nuclear Density gauges), Mass, Force & Weighing Devices and Thermodynamic Calibrations
(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

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
March 6, 2009	February 20, 2022	April 30, 2024

<i>Accreditation No.:</i>	<i>Certificate No.:</i>
63923	L22-165

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.pjllabs.com



Certificate of Accreditation: Supplement

Precision Standards International of St. Augustine, Inc.

11337 Distribution Avenue West, Jacksonville, FL 32256
 Contact Name: Michael Moore Phone: 800-445-7996

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
Length Standards ^F	0.1 in to 7 in	41 μ m	Gage Blocks and Standard Measuring Machine
	7 in to 24 in	(14 + 5L) μ m	End Rods and Standard Measuring Machine
Calipers ^{FO}	0.1 in to 24 in	660 μ m	Gage Blocks CP-810 (Calipers), CP-860 (Micrometers), CP-800 (Dial Indicators), CP-855 (Micrometer Head)
Outside Micrometers ^F	0.1 in to 24 in	520 μ m	
Inside Micrometers ^F	1 in to 32 in	710 μ m	
Depth Micrometers ^F	0.1 in to 9 in	460 μ m	Gage Blocks and Surface Plate
Micrometer Head ^F	0.1 in to 2 in	94 μ m	
Height Gauge ^F	0.1 in to 24 in	700 μ m	
Dial Gauge ^{FO}	0.001 in to 4 in	610 μ m	Digital Head Micrometer
Rule ^F	1 in to 24 in	0.045 in	Steel Rule CP-870 NIST-SOP-10

Mass, Force, and Weighing Devices

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
Balances ^{FO}	0.02 g to 200 g (Resolution: 0.000 1 g)	0.77 mg	ASTM Class 1 Mass Set ASTM E-898(88)
	0.02 g to 1 000 g (Resolution: 0.001 g)	25 mg	
	1 g to 6 100 g (Resolution: 0.01 g)	67 mg	
	2 g to 31 000 g (Resolution: 0.1 g)	610 mg	
	6 g to 31 000 g (Resolution: 1 g)	2 000 mg	
	5 lb to 1 000 lb (Resolution: 0.01 lb)	0.62 lb	Class F Mass Set NIST Handbook 44
	5 lb to 1 000 lb (Resolution: 0.1 lb)	0.8 lb	
	5 lb to 1 000 lb (Resolution: 1 lb)	1.2 lb	



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Mass, Force, and Weighing Devices

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
Mass NIST Class F tolerances or greater ^F	1 g	0.13 mg	Modified Substitution Class 1 Mass Set and 200 g x 0.000 1g
	2 g	0.19 mg	
	3 g	0.2 mg	
	5 g	0.19 mg	
	10 g	0.2 mg	
	20 g	0.2 mg	
	30 g	0.21 mg	
	50 g	0.28 mg	
	100 g	0.57 mg	
200 g	0.51 mg		
Mass NIST Class F tolerances or greater ^F	300 g	19 mg	Modified Substitution Class 1 Mass Set and 1 000 g x 0.001 g Balance
	500 g	19 mg	
	1 000 g	25 mg	
Mass NIST Class F tolerances or greater ^F	2 000 g	26 mg	Modified Substitution Class 1 Mass Set and 6 000 g x 0. 01 g Balance
	3 000 g	71 mg	
	5 000 g	66 mg	
Mass NIST Class F tolerances or greater ^F	10 000 g	130 mg	Modified Substitution Class 1 Mass Set and 30 000 g x 0. 1 g Balance
	20 000 g	610 mg	
	25 000 g	610 mg	
	30 000 g	610 mg	
Force – Tension/ Compression ^{FO}	10 lbf to 100 lbf	(0.16 + 0.005 3F) lbf	Class F Mass Set ATSM E74-18
	100 lbf to 1 000 lbf	(0.44 + 0.001 4F) lbf	Class F Mass Set ASTM E4-16
	300 lbf to 4 900 lbf	1.5 lbf	5 000 lbf Load Cell
	4 900 lbf to 25 000 lbf	7 lbf	25 000 lbf Load Cell
	25 000 lbf to 110 000 lbf	34 lbf	110 000 lbf Load Cell
	110 000 lbf to 600 000 lbf	(35.6 + 0.000 24F) lbf	600 000 lbf Load Cell



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

Mechanical

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
Pressure Gauges ^{FO}	2 psi to 10 000 psi	(0.081 + 9.42 x 10 ⁻⁴ P) psi	Dead Weight Tester and Class F Weights CP-700G
Torque Hand Tools ^F	0.25 lbf•ft to 8.3 lbf•ft	(0.08 + 0.004 8T) lbf•ft	8.3 lbf•ft Torque Transducer CP T9001 33K6-4-2193-1
	7.7 lbf•ft to 16.67 lbf•ft	1.6 % of Reading	16.67 lbf•ft Torque Transducer CP T9001 33K6-4-2193-1
	16.67 lbf•ft to 167 lbf•ft	(0.14 + 0.011T) lbf•ft	167 lbf•ft Torque Transducer CP T9001 33K6-4-2193-1
	167 lbf•ft to 500 lbf•ft	1.2% of reading	500 lbf•ft Torque Transducer CP T9001 33K6-4-2193-1
	500 lbf•ft to 1 000 lbf•ft	1.1% of reading	1 000 lbf•ft Torque Transducer CP T9001 33K6-4-2193-1
Torque Transducers ^F	0.083 lbf•ft to 1 000 lbf•ft	(0.05 + 0.009 6T) lbf•ft	Torque Arms and Class F Masses

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
Liquid in Glass Thermometer ^{FO}	0 °C to 260 °C	0.72 °C	Temperature Well and ASTM E1 Mercury in Glass Thermometer Set Supported by CP-E563
Bi Metal Thermometer ^{FO}	0 °C to 260 °C	4.3 °C	
Type K Thermocouple ^{FO}	0 °C to 260 °C	1.3 °C	
Type T Thermocouple ^{FO}	0 °C to 260 °C	0.74 °C	

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
Stop Watches ^F	3 h to 24 h	960 ms	NIST Time Signals NIST 960-12 (method) ASTM 523



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

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 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.
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 laboratory's fixed location.
6. The term L represents Length in inches or millimeters appropriate to the uncertainty statement.
7. The term F represents Force in pounds force appropriate to the uncertainty statement.
8. The term P represents Pressure in psi appropriate to the uncertainty statement.
9. The term T represents Torque in pounds foot appropriate to the uncertainty statement.