



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Precision Measurement Inc.

658A Lovejoy Road NW, Fort Walton Beach, FL 32548

(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):

Calibration of Dimensional, Electrical, Mass, Mechanical and Thermodynamic
(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

Initial Accreditation Date:

March 2, 2016

Issue Date:

May 17, 2020

Expiration Date:

June 30, 2022

Accreditation No.:

76741

Certificate No.:

L20-298

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 Measurement Inc.

658A Lovejoy Rd NW, Fort Walton Beach, FL 32548
 Contact Name: David Haines Phone: 850-225-3013

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
Gage Blocks ^F	0.05 in to 4 in	(2.5 + 1L) μ in	Mitutoyo Gauge Blocks BEI-81-00A/A
Calipers Digital ^{FO} Resolution = 0.000 5 in	0.01 in to 24 in	(601 + 15L) μ in	Mitutoyo Gauge Blocks BEI-81-00A/A
Calipers Vernier ^{FO} Resolution = 0.001	0.01 in to 24 in	(1 167 + 15L) μ in	8E-LGBS
Micrometers Digital ^{FO} Resolution = 0.000 05 in	0.001 in to 6 in	(87 + 15L) μ in	Mitutoyo Gauge Blocks BEI-81-00A/A
Micrometers Vernier ^{FO} Resolution = 0.000 1 in	0.001 in to 6 in	(1 157 + 15L) μ in	
Pin gage ^F	0.000 05 in to 1 in	(13.5 + 4L) μ in	Pratt and Whitney Super Micrometer
	1 in to 10 in	(24 + 4L) μ in	
Threaded Plug Gage ^F Major Diameter	0.25 in to 10 in, 5 TPI to 80 TPI	(24 + 4L) μ in	Pratt and Whitney Super Micrometer 30HS
Threaded Plug Gage ^F Pitch Diameter	0.25 in to 10 in, 5 TPI to 80 TPI	(30.7 + 7 L) μ in	

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
Equipment to Output DC Voltage ^{FO}	33 mV to 330 mV	5.5 μ V/V + 1 μ V	Fluke 5520A/SC600
	0.33 V to 3.3 V	4.2 μ V/V + 2 μ V	
	3.3 V to 33 V	5.6 μ V/V + 20 μ V	
	33 V to 330 V	6.4 μ V/V + 150 μ V	
	330 V to 1 000 V	2.3 μ V/V + 1.5 mV	
Equipment to Measure DC Voltage ^{FO}	Up to 120 mV	11 μ V/V + 1.121 μ V	HP 3458A
	120 mV to 1.2 V	10 μ V/V + 3.23 μ V	
	1.2 V to 12 V	10 μ V/V + 28.99 μ V	
	12 V to 120 V	12 μ V/V + 563.47 μ V	
	120 V to 1 050 V	12 μ V/V + 7.65 mV	



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Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
10 Hz to 45 Hz	1 mV to 33 mV	1 700 μ V/V + 6 μ V	
45 Hz to 10 kHz	1 mV to 33 mV	72.7 μ V/V + 6 μ V	
10 kHz to 20 kHz	1 mV to 33 mV	72.7 μ V/V + 6 μ V	
20 kHz to 50 kHz	1 mV to 33 mV	72.7 μ V/V + 6 μ V	
50 kHz to 100 kHz	1 mV to 33 mV	118.2 μ V/V + 12 μ V	
100 kHz to 500 kHz	1 mV to 33 mV	75.8 μ V/V + 50 μ V	
Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			
10 Hz to 45 Hz	33 mV to 330 mV	130.3 μ V/V + 8 μ V	
45 Hz to 10 kHz	33 mV to 330 mV	23 μ V/V + 8 μ V	
10 kHz to 20 kHz	33 mV to 330 mV	23 μ V/V + 8 μ V	
20 kHz to 50 kHz	33 mV to 330 mV	23 μ V/V + 8 μ V	
50 kHz to 100 kHz	33 mV to 330 mV	36.4 μ V/V + 32 μ V	
100 kHz to 500 kHz	33 mV to 330 mV	197 μ V/V + 70 μ V	
Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			
10 Hz to 45 Hz	0.33 V to 3.3 V	121.2 μ V/V + 50 μ V	
45 Hz to 10 kHz	0.33 V to 3.3 V	19.1 μ V/V + 60 μ V	
10 kHz to 20 kHz	0.33 V to 3.3 V	21.2 μ V/V + 60 μ V	
20 kHz to 50 kHz	0.33 V to 3.3 V	33.3 μ V/V + 50 μ V	
50 kHz to 100 kHz	0.33 V to 3.3 V	54.5 μ V/V + 130 μ V	
100 kHz to 500 kHz	0.33 V to 3.3 V	512.2 μ V/V + 6 μ V	
Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			
10 Hz to 45 Hz	3.3 V to 33 V	121.2 μ V/V + 650 μ V	
45 Hz to 10 kHz	3.3 V to 33 V	30.3 μ V/V + 600 μ V	
10 kHz to 20 kHz	3.3 V to 33 V	23.9 μ V/V + 600 μ V	
20 kHz to 50 kHz	3.3 V to 33 V	20.6 μ V/V + 600 μ V	
50 kHz to 100 kHz	3.3 V to 33 V	57.6 μ V/V + 1.6 mV	



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Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
45 Hz to 1 kHz	33 V to 330 V	28.2 μ V/V + 2 mV	
1 kHz to 10 kHz	33 V to 330 V	27.9 μ V/V + 6 mV	
10 kHz to 20 kHz	33 V to 330 V	25.2 μ V/V + 6 mV	
20 kHz to 50 kHz	33 V to 330 V	78.8 μ V/V + 6 mV	
50 kHz to 100 kHz	33 V to 330 V	48.5 μ V/V + 50 mV	
Equipment to Output AC Voltage (at the listed frequencies) ^{FO}			
45 Hz to 1 kHz	330 V to 1 020 V	25.5 μ V/V + 10 mV	
1 kHz to 5 kHz	330 V to 1 020 V	25.5 μ V/V + 10 mV	
5 kHz to 10 kHz	330 V to 1 020 V	27.5 μ V/V + 10 mV	
Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			HP 3458A
1 Hz to 40 Hz	Up to 12 mV	0.302 μ V/mV + 5.8 μ V	
40 Hz to 1 kHz	Up to 12 mV	0.202 μ V/mV + 3.9 μ V	
1 kHz to 20 kHz	Up to 12 mV	0.302 μ V/mV + 3.9 μ V	
20 kHz to 50 kHz	Up to 12 mV	1 μ V/mV + 3.9 μ V	
50 kHz to 100 kHz	Up to 12 mV	5 μ V/mV + 3.9 μ V	
100 kHz to 300 kHz	Up to 12 mV	40 μ V/mV + 4.8 μ V	
300 kHz to 1 MHz	Up to 12 mV	12 μ V/mV + 7.8 μ V	
1 MHz to 4 MHz	Up to 12 mV	70 μ V/mV + 9.8 μ V	
4 MHz to 8 MHz	Up to 12 mV	200 μ V/mV + 10.8 μ V	
Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			
1 Hz to 40 Hz	12 mV to 120 mV	0.072 μ V/mV + 9.71 μ V	
40 Hz to 1 kHz	12 mV to 120 mV	0.072 μ V/mV + 7.71 μ V	
1 kHz to 20 kHz	12 mV to 120 mV	0.142 μ V/mV + 7.71 μ V	
20 kHz to 50 kHz	12 mV to 120 mV	0.302 μ V/mV + 7.71 μ V	
50 kHz to 100 kHz	12 mV to 120 mV	0.802 μ V/mV + 7.71 μ V	
100 kHz to 300 kHz	12 mV to 120 mV	3 μ V/mV + 15.71 μ V	
300 kHz to 1 MHz	12 mV to 120 mV	10 μ V/mV + 15.71 μ V	
1 MHz to 2 MHz	12 mV to 120 mV	15 μ V/mV + 15.71 μ V	
2 MHz to 4 MHz	12 mV to 120 mV	40 μ V/mV + 75.71 μ V	
4 MHz to 8 MHz	12 mV to 120 mV	40 μ V/mV + 85.71 μ V	
8 MHz to 10 MHz	12 mV to 120 mV	150 μ V/mV + 105.71 μ V	



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Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			HP 3458A
1 Hz to 40 Hz	120 mV to 1.2 V	72 μ V/V + 90 μ V	
40 Hz to 1 kHz	120 mV to 1.2 V	72 μ V/V + 70 μ V	
1 kHz to 20 kHz	120 mV to 1.2 V	142 μ V/V + 70 μ V	
20 kHz to 50 kHz	120 mV to 1.2 V	302 μ V/V + 70 μ V	
50 kHz to 100 kHz	120 mV to 1.2 V	802 μ V/V + 70 μ V	
100 kHz to 300 kHz	120 mV to 1.2 V	3 mV/V + 150 μ V	
300 kHz to 1 MHz	120 mV to 1.2 V	10 mV/V + 150 μ V	
1 MHz to 2 MHz	120 mV to 1.2 V	15 mV/V + 150 μ V	
2 MHz to 4 MHz	120 mV to 1.2 V	40 mV/V + 0.75 mV	
4 MHz to 8 MHz	120 mV to 1.2 V	40 mV/V + 0.85 mV	
8 MHz to 10 MHz	120 mV to 1.2 V	150 mV/V + 1.05 mV	
Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			
1 Hz to 40 Hz	1.2 V to 12 V	72 μ V/V + 892 μ V	
40 Hz to 1 kHz	1.2 V to 12 V	72 μ V/V + 692 μ V	
1 kHz to 20 kHz	1.2 V to 12 V	142 μ V/V + 692 μ V	
20 kHz to 50 kHz	1.2 V to 12 V	302 μ V/V + 692 μ V	
50 kHz to 100 kHz	1.2 V to 12 V	802 μ V/V + 692 μ V	
100 kHz to 300 kHz	1.2 V to 12 V	3 mV/V + 1.5 mV	
300 kHz to 1 MHz	1.2 V to 12 V	10 mV/V + 1.52 mV	
1 MHz to 2 MHz	1.2 V to 12 V	15 mV/V + 1.5 mV	
2 MHz to 4 MHz	1.2 V to 12 V	40 mV/V + 7.5 mV	
4 MHz to 8 MHz	1.2 V to 12 V	40 mV/V + 8.5 mV	
8 MHz to 10 MHz	1.2 V to 12 V	150 mV/V + 10.5 mV	
Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			
1 Hz to 40 Hz	12 V to 120 V	202 μ V/V + 12.4 mV	
40 Hz to 1 kHz	12 V to 120 V	202 μ V/V + 10.4 mV	
1 kHz to 20 kHz	12 V to 120 V	202 μ V/V + 10.4 mV	
20 kHz to 50 kHz	12 V to 120 V	352 μ V/V + 10.4 mV	
50 kHz to 100 kHz	12 V to 120 V	1.2 mV/V + 10.4 mV	
100 kHz to 300 kHz	12 V to 120 V	4 mV/V + 18.4 mV	
300 kHz to 1 MHz	12 V to 120 V	15 mV/V + 18.4 mV	



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Equipment to Measure AC Voltage (at the listed frequencies) ^{FO}			HP 3458A
1 Hz to 40 Hz	120 V to 700 V	402 μ V/V + 117.1 mV	
40 Hz to 1 kHz	120 V to 700 V	402 μ V/V + 97.1 mV	
1 kHz to 20 kHz	120 V to 700 V	602 μ V/V + 97.1 mV	
20 kHz to 50 kHz	120 V to 700 V	1.2 mV/V + 97.1 mV	
50 kHz to 100 kHz	120 V to 700 V	3 mV/V + 97.1 mV	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
45 Hz to 1 000 Hz	29 μ A to 330 μ A	697 μ A/A + 0.1 μ A	
1 kHz to 5 kHz	29 μ A to 330 μ A	1500 μ A/A + 0.2 μ A	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1000 Hz	0.33 mA to 3.3 mA	757.6 μ A/A + .1 μ A	
1 kHz to 5 kHz	0.33 mA to 3.3 mA	757.6 μ A/A + .2 μ A	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1 000 Hz	3.3 mA to 33 mA	757.6 μ A/A + 2 μ A	
1 kHz to 5 kHz	3.3 mA to 33 mA	878.8 μ A/A + 2 μ A	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1 000 Hz	33 mA to 330 mA	1.1 mA/A + 20 μ A	
1 kHz to 5 kHz	33 mA to 330 mA	4.2 mA/A + 50 μ A	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1000 Hz	0.33 A to 1.1 A	745.5 μ A/A + 100 μ A	
1 kHz to 5 kHz	0.33 A to 1.1 A	4.1 mA/A + 1 mA	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1 000 Hz	1.1 A to 3 A	933.3 μ A/A + 100 μ A	
1 kHz to 5 kHz	1.1 A to 3 A	966.7 μ A/A + 1 mA	
Equipment to Output AC Current (at the listed frequencies) ^{FO}			
45 Hz to 1 000 Hz	3 A to 11 A	281.8 μ A/A + 2 mA	
1 kHz to 5 kHz	3 A to 11 A	1.5 mA/A + 2 mA	



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Equipment to Output AC Current (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
45 Hz to 1 000 Hz	11 A to 20.5 A	4.8 mA/A + 5 mA	
1 kHz to 5 kHz	11 A to 20.5 A	4.8 mA/A + 5 mA	
Equipment to Measure AC Current At the listed frequencies ^{FO}			HP 3458A
10 Hz to 20 Hz	Up to 120 μ A	4 nA/ μ A + 62nA	
20 Hz to 45 Hz	Up to 120 μ A	1.5 nA/ μ A + 62nA	
45 Hz to 100 Hz	Up to 120 μ A	0.602 nA/ μ A + 62nA	
100 Hz to 1 kHz	Up to 120 μ A	0.602 nA/ μ A + 62nA	
Equipment to Measure AC Current At the listed frequencies ^{FO}			
10 Hz to 20 Hz	120 μ A to 1.2 mA	4 μ A/mA + 321 nA	
20 Hz to 45 Hz	120 μ A to 1.2 mA	1.5 μ A/mA + 321 nA	
45 Hz to 100 Hz	120 μ A to 1.2 mA	0.602 μ A/mA + 321 nA	
100 Hz to 5 kHz	120 μ A to 1.2 mA	0.302 μ A/mA + 321 nA	
5 kHz to 20 kHz	120 μ A to 1.2 mA	0.602 μ A/mA + 321 nA	
20 kHz to 50kHz	120 μ A to 1.2 mA	4 μ A/mA + 521 nA	
50 kHz to 100 kHz	120 μ A to 1.2 mA	5.5 μ A/mA + 1.621 mA	
Equipment to Measure AC Current At the listed frequencies ^{FO}			
10 Hz to 20 Hz	1.2 mA to 12 mA	4 μ A/mA + 3.91 μ A	
20 Hz to 45 Hz	1.2 mA to 12 mA	1.5 μ A/mA + 3.91 μ A	
45 Hz to 100 Hz	1.2 mA to 12 mA	0.605 μ A/mA + 3.91 μ A	
100 Hz to 5 kHz	1.2 mA to 12 mA	0.305 μ A/mA + 3.91 μ A	
5 kHz to 20 kHz	1.2 mA to 12 mA	0.605 μ A/mA + 3.91 μ A	
20 kHz to 50kHz	1.2 mA to 12 mA	4 μ A/mA + 5.91 μ A	
50 kHz to 100 kHz	1.2 mA to 12 mA	5.5 μ A/mA + 16.91 μ A	



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Equipment to Measure AC Current At the listed frequencies ^{FO}			HP 3458A
10 Hz to 20 Hz	12 mA to 120 mA	4 μ A/mA + 40.1 μ A	
20 Hz to 45 Hz	12 mA to 120 mA	1.5 μ A/mA + 40.1 μ A	
45 Hz to 100 Hz	12 mA to 120 mA	0.605 μ A/mA + 40.1 μ A	
100 Hz to 5 kHz	12 mA to 120 mA	0.305 μ A/mA + 40.1 μ A	
5 kHz to 20 kHz	12 mA to 120 mA	0.605 μ A/mA + 40.1 μ A	
20 kHz to 50kHz	12 mA to 120 mA	4 μ A/mA + 60.1 μ A	
50 kHz to 100 kHz	12 mA to 120 mA	5.5 μ A/mA + 170.1 μ A	
Equipment to Measure AC Current At the listed frequencies ^{FO}			
10 Hz to 20 Hz	120 mA to 1.2 A	4 mA/A + 410 μ A	
20 Hz to 45 Hz	120 mA to 1.2 A	1.6 mA/A + 410 μ A	
45 Hz to 100 Hz	120 mA to 1.2 A	0.805 mA/A + 410 μ A	
100 Hz to 5 kHz	120 mA to 1.2 A	1 mA/A + 410 μ A	
5 kHz to 20 kHz	120 mA to 1.2 A	3 mA/A + 410 μ A	
20 kHz to 50kHz	120 mA to 1.2 A	10 mA/A + 610 μ A	
Equipment to Measure DC Current ^{FO}			
	0 nA to 120 nA	35 μ A/A + 0.268 nA	
	120 nA to 1.2 μ A	25 μ A/A + 0.272 nA	
	1.2 μ A to 12 μ A	25 μ A/A + 0.463 nA	
	12 μ A to 120 μ A	25 μ A/A + 2,708 nA	
	120 μ A to 1.2 mA	25 μ A/A + 21 nA	
	1.2 mA to 12 mA	25 μ A/A + 213 nA	
	12 mA to 120 mA	40 μ A/A + 2.84 μ A	
	120 mA to 1.05 A	115 μ A/A + 59 μ A	
Equipment to Output DC Current ^{FO}			Fluke 5520A/SC600
	33 μ A to 330 μ A	3.6 μ A/A + 0.02 μ A	
	0.33 mA to 3.3 mA	15.2 mA/A + 0.05 μ A	
	3.3 mA to 33 mA	14.2 mA/A + 0.25 μ A	
	33 mA to 330 mA	757.6 μ A/A + 2.5 μ A	
	1.1 A to 3 A	80 μ A/A + 40 μ A	
	11 A to 20 A	85 μ A/A + 750 μ A	



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Equipment to Output DC Current Resistance ^{FO}	1 Ω to 11 Ω	12.7 $\mu\Omega/\Omega$ + 1 m Ω	Fluke 5520A/SC600
	11 Ω to 33 Ω	30.3 $\mu\Omega/\Omega$ + 1.5 m Ω	
	33 Ω to 110 Ω	11.8 $\mu\Omega/\Omega$ + 1.4 m Ω	
	110 Ω to 330 Ω	7.6 $\mu\Omega/\Omega$ + 2 m Ω	
	0.33 k Ω to 1.1 k Ω	9.6 $\mu\Omega/\Omega$ + 2 m Ω	
	1.1 k Ω to 3.3 k Ω	7.9 $\mu\Omega/\Omega$ + 20 m Ω	
	3.3 k Ω to 11 k Ω	7.5 $\mu\Omega/\Omega$ + 20 m Ω	
	11 k Ω to 33 k Ω	4.8 $\mu\Omega/\Omega$ + 200 m Ω	
	33 k Ω to 110 k Ω	2.3 $\mu\Omega/\Omega$ + 200 m Ω	
	110 k Ω to 330 k Ω	14.2 $\mu\Omega/\Omega$ + 2 Ω	
	0.33 M Ω to 1.1 M Ω	11.8 $\mu\Omega/\Omega$ + 2 Ω	
	1.1 M Ω to 3.3 M Ω	60.6 $\mu\Omega/\Omega$ + 30 Ω	
	3.3 M Ω to 11 M Ω	42.7 $\mu\Omega/\Omega$ + 50 Ω	
	11 M Ω to 33 M Ω	363.6 $\mu\Omega/\Omega$ + 2.5 k Ω	
	33 M Ω to 110 M Ω	35.5 $\mu\Omega/\Omega$ + 3 k Ω	
110 M Ω to 330 M Ω	293.9 $\mu\Omega/\Omega$ + 100 k Ω		
0.33 G Ω to 1.1 G Ω	5.4 m Ω/Ω + 500 k Ω		
Equipment to Measure Resistance ^{FO}	0 Ω to 12 Ω	18 $\mu\Omega/\Omega$ + 334 $\mu\Omega$	HP 3458A
	12 Ω to 120 Ω	15 $\mu\Omega/\Omega$ + 1 384 $\mu\Omega$	
	120 Ω to 1.2 k Ω	13 $\mu\Omega/\Omega$ + 8 500 $\mu\Omega$	
	1.2 k Ω to 12 k Ω	13 $\mu\Omega/\Omega$ + 102.8 m Ω	
	12 k Ω to 120 k Ω	13 $\mu\Omega/\Omega$ + 1.47 Ω	
	120 k Ω to 1.2 M Ω	18 $\mu\Omega/\Omega$ + 10 Ω	
	1.2 M Ω to 12 M Ω	53 $\mu\Omega/\Omega$ + 267 Ω	
	12 M Ω to 120 M Ω	503 $\mu\Omega/\Omega$ + 25.491 k Ω	
120 M Ω to 1.2 G Ω	5 003 $\mu\Omega/\Omega$ + 5.104 M Ω		
Equipment to Output Capacitance (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
10 Hz to 10 kHz	0.19 nF to 0.399 9 nF	7.5 mF/F + 0.01 nF	
10 Hz to 10 kHz	0.4 nF to 1.099 9 nF	127.4 mF/F + 0.01 nF	
10 Hz to 3 kHz	1.1 nF to 3.299 9 nF	7.9 mF/F + 0.01 nF	
10 Hz to 1 kHz	3.3 nF to 10.999 9 nF	12.7 mF/F + 0.01 nF	
10 Hz to 1 kHz	11 nF to 32.999 9 nF	7.9 mF/F + 0.1 nF	
10 Hz to 1 kHz	33 nF to 109.999 nF	1.5 mF/F + 0.1 nF	
10 Hz to 1 kHz	110 nF to 329.999 nF	848.7 μ F/F + 0.3 nF	



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Equipment to Output Capacitance (at the listed frequencies) ^{FO}			Fluke 5520A/SC600
10 Hz to 600 Hz	0.33 μ F to 1.099 99 μ F	127.4 μ F/F + 1 nF	
10 Hz to 300 Hz	1.1 μ F to 3.299 99 μ F	6.1 mF/F + 3 nF	
10 Hz to 150 Hz	3.3 μ F to 10.999 9 μ F	1 mF/F + 10 nF	
10 Hz to 120 Hz	11 μ F to 32.999 9 μ F	606.2 μ F/F + 30 nF	
10 Hz to 80 Hz	33 μ F to 109.999 μ F	1.5 mF/F + 0.1 μ F	
0 Hz to 50 Hz	110 μ F to 329.999 μ F	1.6 mF/F + 0.1 μ F	
0 Hz to 20Hz	0.33 mF to 1.0999 9 mF	1.1 mF/F + 1 μ F	
0 Hz to 6 Hz	1.1 mF to 3.299 9 mF	363.7 μ F/F + 3 μ F	
0 Hz to 2 Hz	3.3 mF to 10.999 9 mF	1.1 mF/F + 10 μ F	
0 Hz to 0.6 Hz	11 mF to 32.999 9 mF	3.6 mF/F + 30 μ F	
0 Hz to 0.2 Hz	33 mF to 110 mF	1.1 mF/F + 100 μ F	
Temperature Calibration, Indication, and Control Equipment use the Thermocouple Type E ^{FO}	-250 °C to -100 °C	2.1 x 10 ⁻¹ °C	Fluke 5520A/SC600 Electrical Simulation of Thermocouple Output
	-100 °C to -25 °C	1.9 x 10 ⁻¹ °C	
	-25 °C to 350 °C	1.9 x 10 ⁻¹ °C	
	350 °C to 650 °C	1.9 x 10 ⁻¹ °C	
	650 °C to 1 000 °C	1.9 x 10 ⁻¹ °C	
Temperature Calibration, Indication, and Control Equipment use the Thermocouple Type J ^{FO}	-210 °C to -100 °C	2.2 x 10 ⁻¹ °C	
	-100 °C to -30 °C	2.2 x 10 ⁻¹ °C	
	-30 °C to 150 °C	2.0 x 10 ⁻¹ °C	
	150 °C to 760 °C	1.9 x 10 ⁻¹ °C	
	760 °C to 1 200 °C	1.8 x 10 ⁻¹ °C	
Temperature Calibration, Indication, and Control Equipment use the Thermocouple Type K ^{FO}	-200 °C to -100 °C	4.5 x 10 ⁻¹ °C	
	-100 °C to -25 °C	1.8 x 10 ⁻¹ °C	
	-25 °C to 120 °C	1.7 x 10 ⁻¹ °C	
	120 °C to 1 000 °C	1.7 x 10 ⁻¹ °C	
	1 000 °C to 1372 °C	2.0 x 10 ⁻¹ °C	
Temperature Calibration, Indication, and Control Equipment use the Thermocouple Type S ^{FO}	0 °C to 250 °C	1.2 °C	
	250 °C to 1 000 °C	1.2 °C	
	1 000 °C to 1 400 °C	1.4 °C	
	1 400 °C to 1 767 °C	1.3 °C	



Certificate of Accreditation: Supplement

Precision Measurement Inc.

658A Lovejoy Rd NW, Fort Walton Beach, FL 32548
 Contact Name: David Haines Phone: 850-225-3013

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

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
Temperature Calibration, Indication, and Control Equipment use the Thermocouple Type T ^{FO}	-250 °C to -150 °C	2.2×10^{-1} °C	Fluke 5520A/SC600 Electrical Simulation of Thermocouple Output
	-150 °C to 0 °C	1.3×10^{-1} °C	
	0 °C to 120 °C	1.3×10^{-1} °C	
	120 °C to 400 °C	1.8×10^{-1} °C	
Equipment to Output Phase Angle at the listed frequencies ^{FO}			Fluke 5520A/SC600
10 Hz to 65 Hz	3 V/0.5 V at 0°	7.2×10^{-2} °	
65 Hz to 500 Hz	3 V/0.5 V at 0°	7.4×10^{-2} °	
500 Hz to 1 kHz	3 V/0.5 V at 0°	7.5×10^{-2} °	
1 kHz to 5 kHz	3 V/0.5 V at 0°	8.5×10^{-2} °	
5 kHz to 10 kHz	3 V/0.5 V at 0°	8.5×10^{-2} °	
10 kHz to 30 kHz	3 V/0.5 V at 0°	2.2×10^{-1} °	
Oscilloscopes ^{FO} Level Sine Amp 50 kHz ref	10 mV (p-p) to 5 V(p-p)	1.7×10^{-3} V (p-p)	
DC Signal Level ^{FO}	6.6 V to 130 V	2.6×10^{-5} VDC	
	1 mV to 6.6 V	5.8×10^{-3} VDC	
Time Marker Output ^{FO} 50 Ω ^{FO}	2 ns to 20 ms	8.8×10^{-6} mps	
	50 ms to 5 s	5.9×10^{-6} s	
Square Wave - Generate ^{FO} 50 Ω 0.01 kHz to 10 kHz	1 mV to 6.6 V (p-p)	2.5×10^{-3} V (p-p)	
Square Wave - Generate ^{FO} 1 M Ω 0.01 kHz to 1 kHz	1 mV (p-p) to 130 V(p-p)	4.3×10^{-2} V (p-p)	
Square Wave - Generate ^{FO} 1 M Ω 1 kHz to 10 kHz	1 mV (p-p) to 130 V(p-p)	3.8×10^{-3} V (p-p)	

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
Balance/Scales ^F	0.001 g to 60 g	62.5 μ g	Rice Lake Class 2 weights
	60 g to 220 g	0.695 mg	
	220 g to 1 kg	12 mg	
	1 kg to 25 kg	120 mg	



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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
Mass/Weights ^F NIST Handbook 105-1 (Class F)	1 mg to 60 g	0.052 mg	Radwag AS60/220.R2
	60 g to 200 g	0.15 mg	Radwag AS60/220.R2
	200 g to 1 000 g	11.9 mg	Radwag PS1000.R1
	1 000 g to 25 kg	117.7 mg	Radwag APP25/2C

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
Vacuum ^{FO}	0 inHg to -29.5 inHg	0.13 in.hg	Crystal Digital Test Gauge
Pressure ^{FO}	10 psi to 100 psi	0.02 psi	Additel Pressure Standards
	30 psi to 300 psi	0.05 psi	
	200 psi to 2 000 psi	0.43 psi	
	1 000 psi to 10 000 psi	2.52 psi	
Torque –Tools ^F	40 ozf•in to 400 ozf•in	0.87 ozf•in	CDI Torque System
	5 lbf•in to 50 lbf•in	0.2 lbf•in	
	15 lbf•in to 150 lbf•in	0.55 lbf•in	
	40 lbf•in to 400 lbf•in	0.76 lbf•in	
	25 lbf•in to 250 lbf•ft	0.07 lbf•ft	
	200 lbf•ft to 1 000 lbf•ft	0.07 lbf•ft	AKO System
Torque Analyzers/Calibrators ^F	40 ozf•in to 400 ozf•in	0.87 ozf•in	Class F weights with 2.5 in wheel 5 in wheel 10 in arm 20 in arm 24 in arm
	5 lbf•in to 50 lbf•in	0.2 lbf•in	
	15 lbf•in to 150 lbf•in	0.55 lbf•in	
	40 lbf•in to 400 lbf•in	0.76 lbf•in	
	20 lbf•in to 250 lbf•ft	0.07 lbf•ft	
	200 lbf•ft to 1 000 lbf•ft	0.12 lbf•ft	

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
Temperature Measuring Devices ^F	40 °F to 105 °F	0.17 °F	Vaisala MI70/HMP77B Votsch VT7010
Relative Humidity Measuring Devices ^F	20 % RH to 90 % RH	0.86 % RH	



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