

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Enviren Calibrations

202 State Street, Binghamton, NY 13905

(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/NCSL Z540.3-2006

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, Electrical, Mechanical, and Thermodynamic Instruments 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:

Liacy Szenszen

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:
April 08, 2014	August 31, 2022	August 31, 2024
Revision Date	Accreditation No:	Certificate No:
July 07, 2023	76664	L22-581-R1

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: <u>www.pjlabs.com</u>



Enviren Calibrations

202 State Street, Binghamton, NY 13905 Contact Name: Mr. David Carter Phone: 607-723-0999

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	33 mV to 329.9 mV	0.001 6 % of value + 0.000 81 mV	Fluke 5520A
DC Voltage ^F	329.9 V to 3.29 V	0.000 46 % of value + 0.021 mV	WI 7.2.1-48
	3.29 V to 32.9 V	0.000 84 % of value + 0.067 mV	
	30 V to 329.9 V	0.001 4 % of value + 0.12 mV	
	100 V to 1 000 V	0.001 4 % of value + 1.9 mV	
Equipment to Measure	33 µA to 329.9 µA	0.012 % of value + 0.016 µA	
Resistance ^F	329.9 mA to 3.29 mA	0.007 5 % of value + 0.05 µA	
	3.29 mA to 32.9 mA	0.007 4 % of value + 0.34 µA	
	32.9 mA to 329.9 mA	0.006 5 % of value + 6.9 μA	
	0.1 A to 1.09 A	0.015 % of value + 0.038 mA	
	1.1 A to 2.9 A	0.028 % of value + 0.1 mA	
	2.9 A to 10.9 A	0.036 % of value + 0.73 mA	
	11 A to 20.5A	0.077 % of value + 0.79 mA	
	0.1 Ω to 10.9 Ω	0.003 1 % of value + 0.000 78 Ω	
	11 Ω to 32.9 Ω	0.002 4 % of value + 0.001 2 Ω	
	33 Ω to 109.9 Ω	$0.002 \ 2 \ \%$ of value + 0.001 1 Ω	
	110 Ω to 329.9 Ω	0.002 2 % of value + 0.001 6 Ω	
	330 k Ω to 1.09 k Ω	0.002 2 % of value + 0.001 5 Ω	
	110 Ω to 329.9 Ω	$0.002 4 \%$ of value + 0.014 Ω	
	330 k Ω to 1.09 k Ω	0.002 3 % of value + 0.016 Ω	
	1.1 kΩ to 3.29 kΩ	0.002 3 % of value + 0.15 Ω	
	$3.3 \text{ k}\Omega$ to $10.9 \text{ k}\Omega$	0.002 3 % of value + 0.000 15 k Ω	
	11 kΩ to 32.9 kΩ	0.002 6 % of value + 0.001 5 k Ω	
	33 kΩ to 109.9 kΩ	0.25 % of value + 1.6 Ω	
	110 kΩ to 329.9 MΩ	0.48 % of value + 22 Ω	
	330 kΩ to 1.09 MΩ	0.01 % of value + 0.039 kΩ	
	1.1 MΩ to 3.29 MΩ	0.021 % of value + 0.001 8 MΩ	1
	3.3 MΩ to 10.9 MΩ	0.04 % of value + 0.002 1 M Ω	1
	11 MΩ to 32.9 MΩ	0.24 % of value + 0.075 M Ω	1
	33 MΩ to 109.9 MΩ	0.27 % of value + 23 MΩ	1
	110 MΩ to 329.9 MΩ	0.003 1 % of value + 0.000 78 Ω	1
	330 MΩ to 1 100 MΩ	$0.002 4 \%$ of value + 0.001 2 Ω	1



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Equipment to Measure AC			Fluke 5520A
(at the listed frequencies) ^F 10 Hz to 45 Hz	1 mV to 32.9 mV	0.06 % of value + 0.005 5 mV	WI 7.2.1-48
			_
45 Hz to 10 kHz	1 mV to 32.9 mV	0.008 3 % of value + 0.007 9 mV	
10 kHz to 20 kHz	1 mV to 32.9 mV	0.006 9 % of value + 0.011 mV	
20 kHz to 50 kHz	1 mV to 32.9 mV	0.061 % of value + 0.013 mV	
50 kHz to 100 kHz	1 mV to 32.9 mV	0.27 % of value + 0.012 mV	
100 kHz to 500 kHz	1 mV to 32.9 mV	0.13 % of value + 0.33 mV	
Equipment to Measure AC (at the listed frequencies) ^F			
10 Hz to 45 Hz	33 mV to 329.9 mV	0.023 % of value + 0.009 3 mV	
45 Hz to 10 kHz	33 mV to 329.9 mV	0.01 % of value + 0.01 mV	
10 kHz to 20 kHz	33 mV to 329.9 mV	0.012 % of value + 0.01 mV	
20 kHz to 50 kHz	33 mV to 329.9 mV	0.025 % of value + 0.013 mV	
50 kHz to 100 kHz	33 mV to 329.9 mV	0.061 % of value + 0.031 mV	
100 kHz to 500 kHz	33 mV to 329.9 mV	0.15 % of value + 0.082 mV	
Equipment to Measure AC (at the listed frequencies) ^F			
10 Hz to 45 Hz	0.33 V to 3.29 V	0.022 % of value + 0.074 mV	
45 Hz to 10 kHz	0.33 V to 3.29 V	0.011 % of value + 0.093 mV	1
10 kHz to 20 kHz	0.33 V to 3.29 V	0.014 % of value + 0.087 mV	1
20 kHz to 50 kHz	0.33 V to 3.29 V	0.022 % of value + 0.087 mV	1
50 kHz to 100 kHz	0.33 V to 3.29 V	0.053 % of value + 0.16 mV	
100 kHz to 500 kHz	0.33 V to 3.29 V	0.18 % of value + 0.84 mV	



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Equipment to Measure AC			Fluke 5520A
(at the listed frequencies) ^F 10 Hz to 45 Hz	3.3 V to 32.9 V	0.022 % of value + 0.82 mV	WI 7.2.1-48
45 Hz to 10 kHz	3.3 V to 32.9 V	0.022 % of value + 0.82 mV 0.011 % of value + 0.9 mV	-
		0.011% of value + 0.9 mV 0.018% of value + 0.84 mV	
10 kHz to 20 kHz 20 kHz to 50 kHz	3.3 V to 32.9 V 3.3 V to 32.9 V	0.018 % of value + 0.84 mV 0.026 % of value + 1 mV	
	3.3 V to 32.9 V		
50 kHz to 100 kHz		0.068 % of value + 2 mV	-
Equipment to Measure AC (at the listed frequencies) ^F			
45 Hz to 1 kHz	33 V to 329.9 V	0.013 % of value + 9.5 mV	-
1 kHz to 10 kHz	33 V to 329.9 V	0.014 % of value + 11 mV	
10 kHz to 20 kHz	33 V to 329.9 V	0.014 % of value + 11 mV	
20 kHz to 50 kHz	33 V to 329.9 V	0.018 % of value + 26 mV	
50 kHz to 100 kHz	33 V to 329.9 V	0.14 % of value + 100 mV	-
Equipment to Measure AC (at the listed frequencies) ^F			
45 Hz to 1 kHz	330 V to 1 000 V	0.022 % of value + 20 mV	
1 kHz to 5 kHz	330 V to 1 000 V	0.019 % of value + 19 mV	-
5 kHz to 10 kHz	330 V to 1 000 V	0.023 % of value + 18 mV	-
Equipment to Measure AC (at the listed frequencies) ^F			
10 Hz to 20 Hz	29 μA to 329.9 μA	0.15 % of value + 0.096 μA	
20 Hz to 45 Hz	29 µA to 329.9 µA	0.12 % of value + 0.093 μA	
45 Hz to 1 kHz	29 µA to 329.9 µA	0.095 % of value + 0.096 μA	
1 kHz to 5 kHz	29 µA to 329.9 µA	0.23 % of value + 0.41 μA	
5 kHz to 10 kHz	29 µA to 329.9 µA	0.23 % of value + 0.41 μA	
10 kHz to 30 kHz	29 µA to 329.9 µA	1.2 % of value + 2.2 μA	
Equipment to Measure AC (at the listed frequencies) ^F	e	-	
10 Hz to 20 Hz	0.33 mA to 3.29 mA	0.15 % of value + 0.000 3 mA	
20 Hz to 45 Hz	0.33 mA to 3.29 mA	0.087 % of value + 0.000 53 mA	
45 Hz to 1 kHz	0.33 mA to 3.29 mA	0.073 % of value + 0.000 31 mA	
1 kHz to 5 kHz	0.33 mA to 3.29 mA	0.15 % of value + 0.000 65 mA	
5 kHz to 10 kHz	0.33 mA to 3.29 mA	0.38 % of value + 0.000 84 mA	
10 kHz to 30 kHz	0.33 mA to 3.29 mA	0.76 % of value + 0.003 7 mA	



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

Electrical	1	1	1
MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure AC			Fluke 5520A
(at the listed frequencies) ^H 10 Hz to 20 Hz	3.3 mA to 32.9 mA	0.14 % of value + 0.003 mA	WI 7.2.1-48
20 Hz to 45 Hz	3.3 mA to 32.9 mA	0.065 % of value + 0.003 4 mA	-
45 Hz to 1 kHz	3.3 mA to 32.9 mA	0.026 % of value + $0.003 7 mA$	-
1 kHz to 5 kHz	3.3 mA to 32.9 mA	0.026 % of value + $0.003 %$ mA	
5 kHz to 10 kHz	3.3 mA to 32.9 mA	0.14 % of value + 0.006 9 mA	-
10 kHz to 30 kHz	3.3 mA to 32.9 mA	0.14 % of value + 0.000 9 mA 0.28 % of value + 0.017 mA	-
Equipment to Measure AC	A	0.20 % 01 value + 0.017 IIIA	
(at the listed frequencies) $^{\rm H}$			
10 Hz to 20 Hz	33 mA to 329.9 mA	0.14 % of value + 0.031 mA	
20 Hz to 45 Hz	33 mA to 329.9 mA	0.065 % of value + 0.036 mA	
45 Hz to 1 kHz	33 mA to 329.9 mA	0.026 % of value + 0.038 mA	
1 kHz to 5 kHz	33 mA to 329.9 mA	0.074 % of value + 0.056 mA	
5 kHz to 10 kHz	33 mA to 329.9 mA	0.15 % of value + 0.11 mA	
10 kHz to 30 kHz	33 mA to 329.9 mA	0.074 % of value + 0.001 2 A	
Equipment to Measure AC (at the listed frequencies)			
10 Hz to 45 Hz	0.33 A to 2.9 A	0.008 7 % of value + 0.001 1 A	
45 Hz to 1 kHz	0.33 A to 2.9 A	0.45 % of value + 0.001 1 A	
1 kHz to 5 kHz	0.33 A to 2.9 A	1.9 % of value + 0.004 A	
5 kHz to 10 kHz	0.33 A to 2.9 A	0.13 % of value + 0.000 38 A	
Equipment to Measure AC (at the listed frequencies) ¹			
45 Hz to 100 Hz	3 A to 10.9 A	0.035 % of value + 0.000 65 A	-
100 kHz to 1 kHz	3 A to 10.9 A	0.46 % of value + 0.000 91 A	-
1 kHz to 5 kHz	3 A to 10.9 A	1.9 % of value + 0.004 A	
Equipment to Measure AC (at the listed frequencies)			
45 Hz to 100 Hz	11 A to 20.5 A	0.04 % of value + 0.002 7 A	
100 Hz to 1 kHz	11 A to 20.5 A	0.072 % of value + 0.002 5 A	
1 kHz to 5 kHz	11 A to 20.5 A	2.3 % of value + 0.001 7 A	
10 to 45 Hz	11 A to 20.5 A	0.09 % of value + 0.004 9 A	
45 Hz to 1 000 Hz	11 A to 20.5 A	0.11 % of value + 0.004 8 A	
1 kHz to 5 kHz	11 A to 20.5 A	2.3 % of value + 0.004 A	



Company Name 22 Street, Suite #102, City, ST 06010

Contact Name Phone: 777-777-7777

Electrical			
MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	0.19 nF to 0.399 9 nF	0.34 % of value + 0.008 1 nF	Fluke 5520A
Capacitance ^F	0.4 nF to 1.099 9 nF	0.38 % of value + 0.008 nF	WI 7.2.1-48
	1.1 nF to 3.299 9 nF	0.4 % of value + 0.007 8 nF	WI 7.2.1-60
	3.3 nF to 10.999 9 nF	0.19 % of value + 0.009 7 nF	
	11 nF to 32.999 9 nF	0.2 % of value + 0.078 nF	
	33 nF to 109.999 nF	0.19 % of value + 0.091 nF	
	110 nF to 329.999 nF	0.15 % of value + 0.57 nF	
	0.33 μF to 1.099 99 μF 📐	0.19 % of value + 0.000 91 µF	
	1.1 μF to 3.299 99 μF	0.15 % of value + 0.005 7 μF	
	3.3 µF to 10.999 9 µF	0.2 % of value + 0.008 9 µF	
	11 µF to 32.999 9 µF	0.27 % of value + 0.053 μF	
	33 µF to 109.999 µF	0.36 % of value + 0.083 μF	
	110 µF to 329.999 µF	0.31 % of value + 0.51 µF	
	0.33 mF to 1.099 99 mF	0.34 % of value + 0.98 µF	
	1.1 mF to 3.299 9 mF	0.3 % of value + 5.2 μF	
	3.3 mF to 10.999 9 mF	0.35 % of value + 8.8 μF	
	11 mF to 32.999 9 mF	0.58 % of value + 24 μF	-
	33 mF to 110 mF	0.85 % of value + 78 µF	
Equipment to Measure	600 °C to 800 °C	0.37 °C	
Thermocouple Type B ^F	800 °C to 1 000 °C	0.29 °C	
	1 000 °C to 1 550 °C	0.27 °C	-
	1 550 °C to 1 820 °C	0.29 °C	
Equipment to Measure	Up to 150°C	0.27 °C	
Thermocouple Type C ^F	150 °C to 650 °C	0.24 °C	-
	650 °C to 1 000 °C	0.27 °C	
	1 000 °C to 1 800 °C	0.41 °C	1
	1 800 °C to 2 316 °C	0.66 °C	1
Equipment to Measure Thermocouple Type E $^{\rm F}$	-250 °C to -100 °C	0.41 °C	
	-100 °C to -25 °C	0.18 °C	
	-25 °C to 350 °C	0.17 °C	
	350 °C to 650 °C	0.18 °C	
	650 °C to 1 000 °C	0.20 °C	



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	-210 °C to -100 °C	0.25 °C	Fluke 5520A
Thermocouple Type J ^F	-100 °C to -30 °C	0.18 °C	WI 7.2.1-60
	-30 °C to 150°C	0.17 °C	
	150 °C to 760 °C	0.18 °C	
	760 °C to 1 200 °C	0.22 °C	
Equipment to Measure	-200 °C to -100 °C	0.29 °C	
Thermocouple Type K ^F	-100 °C to -25 °C	0.19 °C	
	-25 °C to 120 °C	0.18 °C	
	120 °C to 1 000 °C	0.24 °C	
	1 000 °C to 1 372 °C	0.33 °C	
Equipment to Measure	-200 °C to -100 °C	0.34 °C	
Thermocouple Type L ^F	-100 °C to 800 °C	0.24 °C	
	800 °C to 900 °C	0.18 °C	
Equipment to Measure	-200 °C to -100 °C	0.34 °C	
Thermocouple Type N ^F	-100 °C to -25 °C	0.21°C	1
	-25 °C to 120 °C	0.19 °C	
	120 °C to 410 °C	0.19 °C	
	410 °C to 130 °C	0.24 °C	
Equipment to Measure	Up to 250 °C	0.46 °C	
Thermocouple Type R ^F	250 °C to 400 °C	0.30 °C	
	400 °C to 1 000 °C	0.29 °C	
	1 000 °C to 1 767 °C	0.33 °C	
Equipment to Measure	Up to 250 °C	0.39 °C	
Thermocouple Type S ^F	250 °C to 1 000 °C	0.31 °C	
	1 000 °C to 1 400 °C	0.32 °C	
	1 400 °C to 1 767 °C	0.38 °C	
Equipment to Measure Thermocouple Type T ^F	-250 °C to -150 °C	0.51 °C	1
	-150 °C to 0 °C	0.22 °C	1
	Up to 120 °C	0.18 °C	1
	120 °C to 400 °C	0.16 °C	1
Equipment to Measure	-200 °C to 0 °C	0.56 °C	1
Thermocouple Type U ^F	Up to 600 °C	0.25 °C	1



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Electrical MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	-200 °C to -80 °C	0.05 °C	Fluke 5520A
RTD Type Pt 385,100 Ω ^F	-80 °C to 0 °C	0.05 °C	WI 7.2.1-60
Ρί 385,100 Ω	Up to 100 °C	0.07 °C	-
	100 °C to 300 °C	0.09 °C	
	300 °C to 400 °C	0.10 °C	
	400 °C to 630 °C	0.12 °C	
	630 °C to 800 °C	0.23 °C	
Equipment to Measure	-200 °C to -80 °C	0.05 °C	
RTD Type	-80 °C to 0 °C	0.05 °C	
Pt 3926,100 Ω ^F	Up to 100 °C	0.07 °C	
	100 °C to 300 °C	0.09 °C	
	300 °C to 400 °C	0.10 °C	
	400 °C to 630 °C	0.12 °C	1
Equipment to Measure	-200 °C to -190 °C	0.25 °C	
RTD Type	-190 °C to -80 °C	0.04 °C	1
Pt 3916,100 Ω ^F	-80 °C to 0 °C	0.05 °C	
	Up to 100 °C	0.06 °C	
	100 °C to 260 °C	0.07 °C	
	260 °C to 300 °C	0.08 °C	
	300 °C to 400 °C	0.09 °C	
	400 °C to 600 °C	0.10 °C	
	600 °C to 630 °C	0.23 °C	
Equipment to Measure	-80 °C to 0 °C	0.04 °C	
RTD Type	Up to 100 °C	0.04 °C	
Pt 385,200 Ω ^F	100 °C to 260 °C	0.05 °C	
	260 °C to 300 °C	0.12 °C	
	300 °C to 400 °C	0.13 °C	1
	400 °C to 600 °C	0.14 °C	
	600 °C to 630 °C	0.16 °C	1



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Electrical MEASURED INSTRUMENT,	RANGE OR NOMINAL DEVICE	CALIBRATION AND MEASUREMENT	CALIBRATION
QUANTITY OR GAUGE	SIZE AS APPROPRIATE	CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	-200 °C to -80 °C	0.04 °C	Fluke 5520A
RTD Type Pt 385,500 Ω ^F	-80 °C to 0 °C	0.05 °C	WI 7.2.1-60
Pt 385,500 12	Up to 100 °C	0.05 °C	-
	100 °C to 260 °C	0.06 °C	
	260 °C to 300 °C	0.08 °C	
	300 °C to 400 °C	0.08 °C	
	400 °C to 600 °C	0.09 °C	
	600 °C to 630 °C	0.11 °C	
Equipment to Measure	-200 °C to -80 °C	0.03 °C	
RTD Type	-80 °C to 0 °C	0.03 °C	
Pt 385,1 000 Ω ^F	Up to 100 °C	0.04 °C	
	100 °C to 260 °C	0.05 °C	
	260 °C to 300 °C	0.06 °C	1
	300 °C to 400 °C	0.07 °C	
	400 °C to 600 °C	0.07 °C	
	600 °C to 630 °C	0.23 °C	
Equipment to Measure	-80 °C to 0 °C	0.08 °C	
RTD Type Ni120,1 209 Ω ^F	Up to 100 °C	0.08 °C	
$11120,1209 \Omega^{-1}$	100 °C to 260 °C	0.14 °C	
Equipment to Measure RTD Type Cu 427, $10\Omega^{F}$	-100 °C to 260 °C	0.30 °C	
Equipment to Simulate	600 °C to 800 °C	0.37 °C	
Thermocouple Type B ^F	800 °C to 1 000 °C	0.29 °C	
	1 000 °C to 1 550 °C	0.27 °C	
	1 550 °C to 1 820 °C	0.29 °C	
Equipment to Simulate Thermocouple Type C ^F	Up to 150 °C	0.27 °C	
	150 °C to 650 °C	0.24 °C	-
	650 °C to 1 000 °C	0.27 °C	
	1 000 °C to 1 800 °C	0.41 °C	1
	1 800 °C to 2 316 °C	0.66 °C]



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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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Simulate Thermocouple Type E ^F	-250 °C to -100 °C	0.41 °C	Fluke 5520A
	-100 °C to -25 °C	0.18 °C	WI 7.2.1-60
	-25 °C to 350 °C	0.17 °C	
	350 °C to 650 °C	0.18 °C	
	650 °C to 1 000 °C	0.20 °C	
Equipment to Simulate	-210 °C to -100 °C	0.25 °C	
Thermocouple Type J ^F	-100 °C to -30 °C	0.18 °C	
	-30 °C to 150 °C	0.17 °C	
	150 °C to 760 °C	0.18 °C	
	760 °C to 1 200 °C	0.22 °C	
Equipment to Simulate	200 °C to -100 °C	0.29 °C	
Thermocouple Type K ^F	-100 °C to -25 °C	0.19 °C	
	-25 °C to 120 °C	0.18 °C	
	120 °C o 1 000 °C	0.24 °C	
	1 000 °C to 1 372 °C	0.33 °C	
Equipment to Simulate	-200 °C to -100 °C	0.34 °C	-
Thermocouple Type L ^F	-100 °C to 800 °C	0.24 °C	-
	800 °C to 900 °C	0.18 °C	-
Equipment to Simulate	-200 °C to -100 °C	0.34 °C	-
Thermocouple Type N ^F	-100 °C to -25 °C	0.21 °C	-
	-25 °C to 120 °C	0.19 °C	-
	120 °C to 410 °C	0.19 °C	-
	410 °C to 130 °C	0.24 °C	-
Equipment to Simulate	Up to 250 °C	0.46 °C	-
Thermocouple Type R $^{\rm F}$	250 °C to 400 °C	0.30 °C	-
	400 °C to 1 000 °C	0.29 °C	-
	1 000 °C to 1 767 °C	0.33 °C	-
Equipment to Simulate	Up to 250 °C	0.39 °C	1
Thermocouple Type S ^F	250 °C to 1 000 °C	0.31 °C	1
	1 000 °C to 1 400 °C	0.32 °C	1
	1 400 °C to 1 767 °C	0.38 °C	1
Equipment to Simulate	-250 °C to -150 °C	0.51 °C	1
Thermocouple Type T ^F	-150 °C to 0 °C	0.22 °C	1
	Up to 120 °C	0.18 °C	1
	120 °C to 400 °C	0.16 °C	1

This supplement is in conjunction with certificate #L22-581-R1



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-777-7777

Electrical MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to simulate	-200 °C to 0 °C	0.56 °C	Fluke 5520A
Thermocouple Type U ^F	Up to 600 °C	0.25 °C	WI 7.2.1-60
Equipment to Simulate	-200 °C to -80 °C	0.05 °C	Fluke 8508A
RTD Type Pt 385,100 Ω ^F	-80 °C to 0 °C	0.05 °C	WI 7.2.1-60
	Up to 100 °C	0.07 °C	
	100 °C to 300 °C	0.09 °C	
	300 °C to 400 °C	0.1 °C	
	400 °C to 630 °C	0.12 °C	
	630 °C to 800 °C	0.23 °C	
Equipment to Simulate	-200 °C to -80 °C	0.05 °C	
RTD Type Pt 3926,100 Ω ^F	-80 °C to 0 °C	0.05 °C	
	Up to 100 °C	0.07 °C	
	100 °C to 300 °C	0.09 °C	-
	300 °C to 400 °C	0.1 °C	
	400 °C to 630 °C	0.12 °C	
Equipment to Simulate	-200 °C to -190 °C	0.25 °C	
RTD Type Pt 3916,100 Ω ^F	-190 °C to -80 °C	0.04 °C	
Ft 5910,100 \$2	-80 °C to 0 °C	0.05 °C	
	Up to 100 °C	0.06 °C	
	100 °C to 260 °C	0.07 °C	
	260 °C to 300 °C	0.08 °C	
	300 °C to 400 °C	0.09 °C	
	400 °C to 600 °C	0.1 °C	
	600 °C to 630 °C	0.23 °C	
Equipment to Simulate	-80 °C to 0 °C	0.04 °C	
RTD Type Pt 385,200 Ω^{F}	Up to 100 °C	0.04 °C	
	100 °C to 260 °C	0.05 °C]
	260 °C to 300 °C	0.12 °C]
	300 °C to 400 °C	0.13 °C]
	400 °C to 600 °C	0.14 °C]
	600 °C to 630 °C	0.16 °C]



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

Electrical	I	1	
MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Simulate	-200 °C to -80 °C	0.04 °C	Fluke 8508A
RTD Type Pt 385,500 Ω ^F	-80 °C to 0 °C	0.05 °C	WI 7.2.1-60 WI 7.2.1-45
	Up to 100 °C	0.05 °C	W17.2.1-45
	100 °C to 260 °C	0.06 °C	
	260 °C to 300 °C	0.08 °C	
	300 °C to 400 °C	0.08 °C	
	400 °C to 600 °C	0.09 °C	
	600 °C to 630 °C	0.11 °Cs	
Equipment to Simulate	-200 °C to -80 °C	0.03 °C	
RTD Type Pt 385,1 000 Ω ^F	-80 °C to 0 °C	0.03 °C	
Pt 585,1 000 Ω ²	Up to 100 °C	0.04 °C	
	100 °C to 260 °C	0.05 °C	
	260 °C to 300 °C	0.06 °C	-
	300 °C to 400 °C	0.07 °C	
	400 °C to 600 °C	0.07 °C	
	600 °C to 630 °C	0.23 °C	
Equipment to Simulate	-80 °C to 0 °C	0.08 °C	
RTD Type Ni120,1 209 Ω ^F	Up to 100 °C	0.08 °C	
	100 °C to 260 °C	0.14 °C	
Equipment to Simulate RTD Type Cu 427,10 Ω ^F	-100 °C to 260 °C	0.3 °C	
Equipment to Output DC	20 mV to 200 mV	0.000 27 % of value + 0.1 uV	
Voltage ^F	200 mV to 2 V	0.000 27 % of value + 0.004 uV	
	2 V to 20 V	0.000 27 % of value + 0.04 uV	
	20 V to 200 V	0.000 4 % of value + 0.4 uV	
	200 V to 1 000 V	0.000 4 % of value + 5 uV	
Equipment to Output DC Current ^F	1 μA to 200 μA	0.001 2 % of value + 0.000 4 µA	
	200 µA to 2 mA	0.001 2 % of value + 0.004 µA	
	2 mA to 20 mA	0.001 3 % of value + 0.04 µA	1
	20 mA to 200 mA	0.003 6 % of value + 0.8 μA	
	0.2 A to 2 A	0.017 % of value + 0.16 µA	
	2 A to 20 A	0.038 % of value + 4 μA	1



Company Name

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MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Voltage			Fluke 8508A
(at the listed frequencies) ¹ 1 Hz to10 Hz	1 mV to 200 mV	0.016 % of volume + 14 vV	WI 7.2.1-45
		0.016% of value + 14 μ V	-
10 Hz to 40 Hz	1 mV to 200 mV	0.013 % of value + 4 µV	_
40 Hz to 100 Hz	1 mV to 200 mV	0.011 % of value + 4 µV	
100 Hz to 2 kHz	1 mV to 200 mV	0.01 % of value + 2 μ V	
2 kHz to 10 kHz	1 mV to 200 mV	0.01 % of value + 4 μ V	
10 kHz to 30 kHz	1 mV to 200 mV	0.03 % of value + 8 μV	
30 kHz to 100 kHz	1 mV to 200 mV	0.071 % of value + 20 μV	7
Equipment to Output AC (at the listed frequencies)	3		
1 Hz to 10 Hz	200 mV to 2 V	0.014 % of value + 1.2 μV	
10 Hz to 40 Hz	200 mV to 2 V	0.011 % of value + 0.2 μV]
40 Hz to 100 Hz	200 mV to 2 V	0.008 7 % of value + 0.2 μV	1
100 Hz to 2 kHz	200 mV to 2 V	$0.006~6~\%$ of value + $0.2~\mu$ V	1
2 kHz to 10 kHz	200 mV to 2 V	0.008 6 % of value + 0.2 μV	1
10 kHz to 30 kHz	200 mV to 2 V	0.021% of value + $0.4 \mu V$	1
30 kHz to 100 kHz	200 mV to 2 V	0.051 % of value + 2 μ V	1
100 kHz to 300 kHz	200 mV to 2 V	0.3 % of value + 20 μV	1
300 MHz to 1 MHz	200 mV to 2 V	1 % of value + 200 μV	1
Equipment to Output AC (at the listed frequencies)	3		
1 Hz to 10 Hz	2 V to 20 V	0.014 % of value + 1.2 μ V	
10 Hz to 40 Hz	2 V to 20 V	0.01 % of value + 0.22 μ V	
40 Hz to 100 Hz	2 V to 20 V	0.008 5 % of value + 0.22 μ V	
100 Hz to 2 kHz	2 V to 20 V	0.006 5 % of value + 0.22 μV]
2 kHz to 10 kHz	2 V to 20 V	0.008 5 % of value + 0.22 μV	
10 kHz to 30 kHz	2 V to 20 V	0.02 % of value + 0.41 μV	
30 kHz to 100 kHz	2 V to 20 V	0.051 % of value + 2 μV]
100 kHz to 300 kHz	2 V to 20 V	0.3 % of value + 20 μV]
300 MHz to 1 MHz	2 V to 20 V	1 % of value + 200 µV	1



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Voltage			Fluke 8508A
(at the listed frequencies) ¹ 1 Hz to 10 Hz	20 V to 200 V	0.014 % of value + 120 μV	WI 7.2.1-45
10 Hz to 40 Hz	20 V to 200 V	0.01% of value + 120 μ V	-
40 Hz to 100 Hz	20 V to 200 V	0.0085% of value + 20 μ V	-
100 Hz to 2 kHz	20 V to 200 V	0.0065% of value + 20 μ V	-
2 kHz to 10 kHz	20 V to 200 V	0.0085% of value + 20 μ V	
10 kHz to 30 kHz	20 V to 200 V	0.02% of value + 40 μ V	
30 kHz to 100 kHz	20 V to 200 V	0.05% of value + 200 μ V	-
100 kHz to 300 kHz	20 V to 200 V	0.3% of value + 2 000 μ V	1
300 MHz to 1 MHz	20 V to 200 V	1% of value + 20 000 μ V	1
Equipment to Output AC (at the listed frequencies)			-
1 Hz to 10 Hz	200 V to 2 000 V	0.014 % of value + 1 200 μV	
10 Hz to 40 Hz	200 V to 2 000 V	0.011 % of value + 400 μV	
40 kHz to 10 kHz	200 V to 2 000 V	0.009 5 % of value + 400 μV	
10 kHz to 30kHz	200 V to 2 000 V	0.02 % of value + 800 μV	
30 kHz to 100 kHz	200 V to 2 000 V	0.051 % of value + 4 000 μV	
Equipment to Output AC ((at the listed frequencies)			-
1 Hz to 10 Hz	1 µA to 200 µA	0.029 % of value + 0.02 μA	
10 Hz to 10 kHz	1 μA to 200 μA	0.028 % of value + 0.02 μA	
10 kHz to 30 kHz	1 µA to 200 µA	0.065 % of value + 0.02 μA	
30 kHz to 100 kHz	1 µA to 200 µA	0.4 % of value + 0.02 μA	
Equipment to Output AC (at the listed frequencies)			
1 Hz to 10 Hz	200 µA to 2 mA	0.029 % of value + 0.2 μA	
10 Hz to 10 kHz	200 µA to 2 mA	0.028 % of value + 0.2 µA]
10 kHz to 30 kHz	200 µA to 2 mA	0.065 % of value + 0.2 μA	
30 kHz to 100 kHz	200 µA to 2 mA	0.4 % of value + 0.2 μA]
Equipment to Output AC (at the listed frequencies) ^F			
1 Hz to 10 Hz	2 mA to 20 mA	0.029 % of value + 2 μA	
10 Hz to 10 kHz	2 mA to 20 mA	0.028 % of value + 2 μA	
10 kHz to 30 kHz	2 mA to 20 mA	0.065 % of value + 2 μA]
30 kHz to 100 kHz	2 mA to 20 mA	0.4 % of value + 2 μA	

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Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Output AC Current			Fluke 8508A
(at the listed frequencies) ¹		0.020 % (.1 20	WI 7.2.1-45
1 Hz to 10 Hz	2 mA to 20 mA	0.029 % of value + 20 μA	_
10 Hz to 10 kHz	2 mA to 20 mA	0.028 % of value + 50 μA	_
10 kHz to 30 kHz	2 mA to 20 mA	0.06 % of value + 20 µA	_
Equipment to Output AC (at the listed frequencies)			
10 Hz to 2 kHz	20 mA to 2 A	0.06 % of value + 2 μA	
2 Hz to 10 kHz	20 mA to 2 A	0.074 % of value + 2 μA	7
10 kHz to 30 kHz	20 mA to 2 A	0.3 % of value + 2 µA	1
Equipment to Output AC (at the listed frequencies)			
10 Hz to 2 kHz	2 A to 20 A	0.08 % of value + 20 μA	
2 kHz to 10 kHz	2 A to 20 A	0.25 % of value + 20 μA	-
Equipment to Output	0.1 Ω to 2 Ω	0.001 6 % of value + 0.004 $\mu\Omega$	7
Resistance ^F	2 Ω to 20 Ω	$0.000 9 \%$ of value + $0.014 \mu\Omega$	1
	20 Ω to 200 Ω	$0.000~75~\%$ of value + $0.05~\mu\Omega$	
	200 Ω to 2 kΩ	$0.000~76~\%$ of value + $0.000~5~\Omega$	-
	$2 \text{ k}\Omega$ to $20 \text{ k}\Omega$	0.000 75 % of value + 0.005 Ω	
	20 k Ω to 200 k Ω	0.00075% of value + 0.05 Ω	
	200 kΩ to 2 MΩ	$0.000 88 \%$ of value + 0.000 5 k Ω	-
	2 MΩ to 20 MΩ	0.001 5 % of value + 0.1 k Ω	-
	20 mΩ to 200 MΩ	0.006% of value + 10 k Ω	-
	200 MΩ to 2 GΩ	0.054% of value + 1 M Ω	-
DC Clamp Meters ^F	20.5 A to 150 A	0.6 % of value + 0.17 A	Fluke 5500A/Coil
	150 A to 1 025 A	0.6 % of value + 0.88 A	& Fluke 5520A WI 7.2.1-57
AC Clamp Meters	20.5 A to 150 A	0.68 % of value + 0.3 A	Fluke 5500A/Coil
45 Hz to 65 Hz ^F	150 A to 1 025 A	0.67 % of value +1.2 A	& Fluke 5520A
AC Clamp Meters	20.5 A to 150 A	1.2 % of value + 0.3 A	- LCOMP OFF WI 7.2.1-57
65 Hz to 440 Hz ^{FO}	150 A to 1 025 A	1.2 % of value + 1.2 A	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,



Company Name 22 Street, Suite #102, City, ST 06010

Contact Name Phone: 777-777-7777

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	-250 °C to -150 °C	0.50 °C	Greenlee IPM-400,
Thermocouple Type T ^o	-150 °C to 0 °C	0.22 °C	Altek 830
	Up to 120 °C	0.18 °C	Omega CL-23A, Fluke 724
	120 °C to 400 °C	0.17 °C	WI 7.2.1-46
Equipment to Measure	-210 °C to -100 °C	0.26 °C	-
Thermocouple Type J ^O	-100 °C to -30 °C	0.19 °C	
	-30 °C to 150 °C	0.18 °C	-
	150 °C to 760 °C	0.19 °C	
	760 °C to 1 200 °C	0.23 °C	-
Equipment to Measure	-200 °C to -100 °C	0.31 °C	Greenlee IPM-400,
Thermocouple Type K ^O	-100 °C to -25 °C	0.21 °C	Altek 830
	-25 °C to 120 °C	0.20 °C	Omega CL-23A, Fluke 724
	120 °C to 1 000 °C	0.26 °C	WI 7.2.1-46
	1 000 °C to 1 372 °C	0.34 °C	
Equipment to Measure RTD Type PT 385 100 Ω ^{FO}	-100 °C to 850 °C	0.4 °C	Greenlee IPM-400, Altek 830, Fluke 724,
Equipment to Measure RTD Type PT 385 1 000 Ω ^{FO}	-200 °C to 630 °C	0.4 °C	Fluke 787 WI 7.2.1-46
Temperature Indication and Control Equipment responding to Voltage ^{FO}	Up to 10 V	0.11 % of value + 0.005 8 V	Greenlee IPM-400, Altek 830, Fluke 724, Fluke 787 WI 7.2.1-46
Temperature Indication and Control Equipment responding to Current ^{FO}	4 mA to 20 mA	0.18 % of value + 0.005 8 mA	Greenlee IPM-400, Altek 830, Fluke 724, Fluke 787 WI 7.2.1-46



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-777-7777

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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calipers ^F	4 in to 24 in	4.4 μin/in + 270 μin	Gage Blocks
Indicators F	0.000 05 in to 1 in	2.1 μin/in + 28 μin	WI 7.2.1-08
Micrometers F	0.000 05 in to 24 in	6.7 μin/in + 1.5 μin	- WI 7.2.1-03
Thread Plug Gage ^F Effective Pitch Diameter	0.039 in to 2.36 in	(80 + 5L) µin	IAC Masterscanner WI 7.2.1-15 WI 7.2.1-16
Simple Pitch Diameter ^F	0.039 in to 2.36 in	(80 + 5L) µin	
Major Diameter F	0.039 in to 2.36 in	(80 + 5L) μin	
Minor Diameter F	0.039 in to 2.36 in	(100 + 5L) µin	
Thread Pitch ^F	0.039 in to 2.36 in	$(40 + 5L) \mu in$	
Accumulated Pitch Deviation ^F	0.039 in to 2.36 in	(40 + 5L) μin	-
Flank Angles ^F	Pitch \leq 0.0394 in (1 mm)	(0°6''0')/pitch	
	Pitch > 0.0394 in (1 mm	0°6"0'	1
Taper ^F	0.039 in to 2.36 in	22 µin	1
Thread Rings ^F			
Simple Pitch Diameter	0.118 in to 2.36 in	$(80 + 5L) \mu in$	4
Major Diameter ^F	0.118 in to 2.36 in	$(80 + 5L) \mu in$	4
Minor Diameter ^F	0.118 in to 2.36 in	(100 + 5L) μin	4
Thread Pitch ^F	0.118 in to 2.36 in	(40 + 5L) μin	_
Accumulated Pitch Deviation ^F	0.118 in to 2.36 in	(40 + 5L) μin	_
Flank Angles ^F	Pitch \leq 0.039 4 in (1 mm	(0°6"0')/pitch	
	Pitch > 0.0394 in (1 mm)	0°6"0'	
Taper ^F	0.118 in to 2.36 in	22 µin	
Taper Pipe Thread Plugs ^F			
Effective Pitch Diameter	0.039 in to 2.36 in	$(80 + 5L) \mu in$	4
Simple Pitch Diameter	0.039 in to 2.36 in	$(80 + 5L) \mu in$	4
Major Diameter	0.039 in to 2.36 in	$(80 + 5L) \mu in$	4
Minor Diameter ^F	0.039 in to 2.36 in	(100 + 5L) μin	4
Thread Pitch ^F	0.039 in to 2.36 in	(40 + 5L) μin	4
Accumulated Pitch Deviation ^F	0.039 in to 2.36 in	(40 + 5L) μin	
Flank Angles ^F	Pitch \leq 0.039 4 in (1 mm	(0°6"0')/pitch	4
	Pitch > 0.0394 in (1 mm)	0°6"0'	_
Taper ^F	0.039 in to 2.36 in	22 µin	

This supplement is in conjunction with certificate #L22-581-R1



Company Name

22 Street, Suite #102, City, ST 06010 Contact Name Phone: 777-7777

Dimensional	1		-
MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Taper Pipe Thread Rings ^F			IAC Masterscanner
Effective Pitch Diameter	0.118 in to 2.36 in	$(80 + 5L) \mu in$	WI 7.2.1-15
Simple Pitch Diameter ^F	0.118 in to 2.36 in	(80 + 5L) μin	WI 7.2.1-16
Major Diameter ^F	0.118 in to 2.36 in	(80 + 5L) μin	
Minor Diameter ^F	0.118 in to 2.36 in	$(100 + 5L) \mu in$	
Thread Pitch ^F	0.118 in to 2.36 in	$(40 + 5L) \mu in$	
Accumulated Pitch Deviation ^F	0.118 in to 2.36 in	(40 + 5L) μin	
Flank Angles ^F	Pitch \le 0.039 4 in (1 mm)	(0°6''0')/pitch	
	Pitch > 0.039 4 in (1 mm)	0°6"0'	
Taper ^F	0.118 in to 2.36 in	22 µin	1
Thread Set Plug Gages ^F			
Effective Pitch Diameter	0.118 in to 2.36 in	(80 + 5L) μin	
Simple Pitch Diameter ^F	0.118 in to 2.36 in	(80 + 5L) μin	
Major Diameter ^F	0.118 in to 2.36 in	(80 + 5L) μin	
Minor Diameter F	0.118 in to 2.36 in	$(100 + 5L) \mu in$	
Thread Pitch ^F	0.118 in to 2.36 in	$(40 + 5L) \mu in$	
Accumulated Pitch Deviation ^F	0.118 in to 2.36 in	(40 + 5L) μin	
Flank Angle ^F s	Pitch \le 0.039 4 in (1 mm)	(0°6''0')/pitch	
	Pitch > 0.039 4 in (1 mm)	0°6"0'	
Taper ^F	0.118 in to 2.36 in	22 µin	
Plug Gages (OD) ^F			
Taper	0.039 in to 2.36 in	5 μin	
Diameter ^F	0.039 in to 2.36 in	$(80 + 2L) \mu in$	
Ring Gages (ID) ^F			
Taper	0.118 in to 2.36 in	5 μin	4
Diameter ^F	0.118 in to 2.36 in	$(40 + 5L) \mu in$	
Luer Tapered Plugs ^F			
Small Diameter	Up to 60 mm	(80 + 2L) µin	_
Large Diameter ^F	Up to 60 mm	(80 + 2L) μin	
Taper ^F	1:64 mm/mm Through 1:0 mm/mm	0.000 13 mm	



Enviren Calibrations

202 State Street, Binghamton, NY 13905 Contact Name: David Carter Phone: 607-723-0999

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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Luer Tapered Rings ^F Small Diameter	Up to 60 mm	(80 + 2L) μin	IAC Masterscanner WI 7.2.1-15 WI 7.2.1-16
Large Diameter ^F	Up to 60 mm	(80 + 2L) µin	
Taper ^F	1:64 mm/mm Through 1:0 mm/mm	0.000 13 mm	

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	11.3 % RH	1.4 % RH	Vaisala HMK-15
Humidity ^{FO}	75.5 % RH	1.6 % RH	with:LiCl
Fixed points	97.6 % RH	2.1 % RH	NaCl, K2SO4 WI 7.2.1-69
Equipment to Measure	10 % RH to 90 % RH	1.8 % RH	Vaisala HMI41
Humidity ^{FO}	90 % RH to 95 % RH	2.9 % RH	with HMP-46 humidity Probe WI 7.2.1-69

Mechanical

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MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure	10 Hz to 29 Hz	3.9 % of reading	Agate 3050
Acceleration ^F	30 Hz to 99 Hz	4.1 % of reading	WI 7.2.1-65
	100 Hz to 4 999 Hz	3.8 % of reading	
	5 000 Hz to 10 000 Hz	3.8 % of reading	

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.



Enviren Calibrations 202 State Street, Binghamton, NY 13905 Contact Name: David Carter Phone: 607-723-0999

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

- 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.
- 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.

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