



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION

Valid To: January 31, 2020

Certificate Number: 4870.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Acoustics & Vibration

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Microphones	(-50 to -20) dB re 1 V/Pa; (3 to 100) mV/Pa 250 Hz	0.14 dB	Precision microphone
Pistonphones (Acoustic Calibrators) –	74 to 135 dB re 1Vpa; 250 Hz	0.13 dB	Precision microphone DMM
Frequency	250 Hz; 1 kHz	0.002 Hz	
Total Harmonic Distortion (%)	<1 % of reading	0.08 %	NI PCI-4461

Parameter/Equipment	Frequency	CMC ^{2,5} (±)	Comments
Vibration	(5 to 9) Hz (10 to 99) Hz (0.1 to 1.999) kHz (2 to 10) kHz	2.1 % 1.6 % 1.1 % 2.8 %	Precision accelerometer

II. Dimensional

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Surface Plates – Flatness ³	Up to 271" <i>D</i>	0.83 μin/in	Federal levels
Surface Plates – Repeatability ³	12" <i>D</i> up to 271" <i>D</i>	(0.09 <i>D</i>) μin/in	Repeat reading gage and electronic amplifier

III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2,6} (±)	Comments
DC Voltage – Measure	(0 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V (100 to 1000) V	9.0 μV/V + 0.3 μV 8.0 μV/V + 0.3 μV 8.0 μV/V + 0.6 μV 10 μV/V + 31 μV 10 μV/V + 0.1 mV	Agilent 3458A
DC Voltage – Generate	Up to 330 mV 330 mV to 3.3 V (3.3 to 33) V (30 to 330) V 330 V to 1.02 kV	18 μV/V + 670 nV 9.1 μV/V + 1.3 μV 9.5 μV/V + 13 μV 13 μV/V + 100 μV 12 μV/V + 1 mV	Fluke 5522A

Parameter/Equipment	Range	CMC ^{2,6} (±)	Comments
DC Current – Measure	Up to 100 nA 1 µA 10 µA 100 µA 1 mA 10 mA 100 mA 1 A	30 µA/A + 0.04 nA 20 µA/A + 0.04 nA 20 µA/A + 0.1 nA 20 µA/A + 0.81 nA 20 µA/A + 5.2 nA 20 µA/A + 52 nA 35 µA/A + 0.52 µA 110 µA/A + 10 µA	Agilent 3458A
DC Current – Generate	Up to 30 µA 330 µA to 3.3 mA (3.3 to 33) mA (33 to 330) mA 330 mA to 1.1 A (1.1 to 3) A (3 to 11) A (11 to 20.5) A	100 µA/A + 13 nA 68 µA/A + 33 nA 67 µA/A + 170 nA 67 µA/A + 1.7 µA 130 µA/A + 27 µA 250 µA/A + 27 µA 330 µA/A + 330 µA 670 µA/A + 500 µA	Fluke 5522A

Parameter/Range	Frequency	CMC ^{2,6} (±)	Comments
AC Voltage – Generate			
(1 to 33) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	530 µV/V + 4 µV 100 µV/V + 4 µV 140 µV/V + 4 µV 670 µV/V + 4 µV 2.3 mV/V + 8 µV 5.3 mV/V + 33 µV	Fluke 5522A
(33 to 330) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	200 µV/V + 5.3 µV 98 µV/V + 5.3 µV 110 µV/V + 5.3 µV 230 µV/V + 5.3 µV 530 µV/V + 21 µV 1.3 mV/V + 47 µV	
330 mV to 3.3 V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	200 µV/V + 33 µV 100 µV/V + 40 µV 130 µV/V + 40 µV 200 µV/V + 33 µV 470 µV/V + 83 µV 1.6 mV/V + 400 µV	

Parameter/Range	Frequency	CMC ^{2, 6} (±)	Comments
AC Voltage – Generate (cont)			
(3.3 to 33) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	200 $\mu\text{V}/\text{V}$ + 530 μV 100 $\mu\text{V}/\text{V}$ + 400 μV 160 $\mu\text{V}/\text{V}$ + 400 μV 230 $\mu\text{V}/\text{V}$ + 400 μV 600 $\mu\text{V}/\text{V}$ + 1.1 mV	Fluke 5522A
(33 to 330) V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	130 $\mu\text{V}/\text{V}$ + 1.3 mV 140 $\mu\text{V}/\text{V}$ + 4 mV 170 $\mu\text{V}/\text{V}$ + 4 mV 200 $\mu\text{V}/\text{V}$ + 4 mV 1.3 mV/V + 33 mV	
330 V to 1.02 kV	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	200 $\mu\text{V}/\text{V}$ + 6.7 mV 200 $\mu\text{V}/\text{V}$ + 6.7 mV 200 $\mu\text{V}/\text{V}$ + 6.7 mV	
AC Voltage – Measure			
(0 to 10) mV	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz	0.30 mV/V + 3.0 μV 0.20 mV/V + 1.1 μV 0.30 mV/V + 1.1 μV 1.0 mV/V + 1.1 μV 5.0 mV/V + 1.1 μV 40 mV/V + 20 μV 12 mV/V + 50 μV 70 mV/V + 70 μV 200 mV/V + 80 μV	Agilent 3458A
100 mV	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 2) MHz (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz	0.08 mV/V + 4 μV 0.08 mV/V + 2 μV 0.14 mV/V + 2 μV 0.30 mV/V + 2 μV 0.8 mV/V + 2 μV 3 mV/V + 10 μV 10 mV/V + 10 μV 15 mV/V + 10 μV 40 mV/V + 70 μV 40 mV/V + 80 μV 150 mV/V + 100 μV	

Parameter/Range	Frequency	CMC ^{2, 6} (±)	Comments
AC Voltage – Measure (cont)			
1 V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 2) MHz (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz	0.08 mV/V + 0.04 mV 0.08 mV/V + 0.02 mV 0.14 mV/V + 0.02 mV 0.30 mV/V + 0.02 mV 0.80 mV/V + 0.02 mV 3.0 mV/V + 0.10 mV 10 mV/V + 0.10 mV 15 mV/V + 0.10 mV 40 mV/V + 0.70 mV 40 mV/V + 0.80 mV 150 mV/V + 1.0 mV	Agilent 3458A
10 V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 2) MHz (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz	0.08 mV/V + 0.40 mV 0.08 mV/V + 0.20 mV 0.14 mV/V + 0.20 mV 0.30 mV/V + 0.20 mV 0.80 mV/V + 0.20 mV 3.0 mV/V + 1.0 mV 10 mV/V + 1.0 mV 15 mV/V + 1.0 mV 40 mV/V + 7.0 mV 40 mV/V + 8.0 mV 150 mV/V + 10 mV	
100 V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	0.20 mV/V + 4.0 mV 0.20 mV/V + 2.0 mV 0.20 mV/V + 2.0 mV 0.35 mV/V + 2.0 mV 1.2 mV/V + 2.0 mV 4.0 mV/V + 30 mV 15 mV/V + 100 mV	
1000 V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.40 mV/V + 40 mV 0.40 mV/V + 20 mV 0.60 mV/V + 20 mV 1.2 mV/V + 20 mV 3.0 mV/V + 20 mV	

Parameter/Range	Frequency	CMC ^{2, 6} (±)	Comments
AC Current – Generate			
(29 to 330) µA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.4 mA/A + 67 nA 1 mA/A + 67 nA 830 µA/A + 67 nA 2 mA/A + 100 nA 5.3 mA/A + 130 nA 11 mA/A + 270 nA	Fluke 5522A
330 µA to 3.3 mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.4 mA/A + 100 nA 850 µA/A + 100 nA 670 µA/A + 100 nA 1.3 mA/A + 130 nA 3.3 mA/A + 200 nA 6.7 mA/A + 400 nA	
(3.3 to 33) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.2 mA/A + 1.3 µA 600 µA/A + 1.3 µA 270 µA/A + 1.3 µA 530 µA/A + 1.3 µA 1.3 mA/A + 2 µA 2.7 mA/A + 2.7 µA	
(33 to 330) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.2 mA/A + 13 µA 600 µA/A + 13 µA 270 µA/A + 13 µA 670 µA/A + 33 µA 1.3 mA/A + 67 µA 2.7 mA/A + 130 µA	
330 mA to 1.1 A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	1.2 mA/A + 67 µA 330 µA/A + 67 µA 4 mA/A + 670 µA 17 mA/A + 3.3 mA	
(1.1 to 3) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	1.2 mA/A + 67 µA 400 µA/A + 67 µA 4.0 mA/A + 670 µA 17 mA/A + 3.3 mA	
(3 to 11) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	400 µA/A + 1.3 mA 690 µA/A + 1.3 mA 20 mA/A + 1.3 mA	
(11 to 20.5) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	800 µA/A + 3.3 mA 1 mA/A + 3.3 mA 20 mA/A + 3.3 mA	

Parameter/Range	Frequency	CMC ^{2,6} (±)	Comments
AC Current – Measure			
Up to 100 µA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz	4.0 mA/A + 30 nA 1.5 mA/A + 30 nA 0.6 mA/A + 30 nA 0.6 mA/A + 30 nA	Agilent 3458A
100 µA to 1 mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	4.0 mA/A + 200 nA 1.5 mA/A + 200 nA 0.6 mA/A + 500 nA 0.3 mA/A + 0.2 µA 0.6 mA/A + 0.2 µA 4.0 mA/A + 0.4 µA 5.5 mA/A + 1.5 µA	
(1 to 10) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	4.0 mA/A + 2.0 µA 1.5 mA/A + 2.0 µA 0.6 mA/A + 2.0 µA 0.3 mA/A + 2.0 µA 4.0 mA/A + 4.0 µA 5.5 mA/A + 15 µA 4.0 mA/A + 20 µA	
(10 to 100) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	1.5 mA/A + 20 µA 0.6 mA/A + 20 µA 0.3 mA/A + 20 µA 0.6 mA/A + 20 µA 4.0 mA/A + 40 µA 5.5 mA/A + 150 µA 4.0 mA/A + 200 µA	
100 mA to 1 A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (5 to 20) kHz (20 to 50) kHz	4.0 mA/A + 200 µA 1.6 mA/A + 200 µA 0.8 mA/A + 200 µA 3.0 mA/A + 0.2 mA 10 mA/A + 0.4 mA	

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Resistance – Generate	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω 330 Ω to 1.1 kΩ (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ 330 kΩ to 1.1 MΩ (1.1 to 3.3) MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ 330 MΩ to 1.1 GΩ	30 μΩ/Ω + 670 μΩ 24 μΩ/Ω + 1 mΩ 21 μΩ/Ω + 930 μΩ 20 μΩ/Ω + 1.3 mΩ 19 μΩ/Ω + 1.3 mΩ 19 μΩ/Ω + 13 mΩ 19 μΩ/Ω + 13 mΩ 19 μΩ/Ω + 130 mΩ 19 μΩ/Ω + 130 mΩ 26 μΩ/Ω + 1.3 Ω 22 μΩ/Ω + 1.3 Ω 41 μΩ/Ω + 20 Ω 87 μΩ/Ω + 33 Ω 170 μΩ/Ω + 1.7 kΩ 330 μΩ/Ω + 2 kΩ 3.8 mΩ/Ω + 67 kΩ 10 mΩ/Ω + 330 kΩ	Fluke 5522A
Resistance – Measure	Up to 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 G Ω	15 μΩ/Ω + 0.1 mΩ 12 μΩ/Ω + 0.5 mΩ 10 μΩ/Ω + 0.3 mΩ 10 μΩ/Ω + 5.0 mΩ 17 μΩ/Ω + 0.1 Ω 15 μΩ/Ω + 2.0 Ω 50 μΩ/Ω + 0.1 kΩ 0.5 mΩ/Ω + 1.0 kΩ 5.0 mΩ/Ω + 10 kΩ	Agilent 3458A

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Capacitance – Generate 10 Hz to 10 kHz 10 Hz to 10 kHz 10 Hz to 3 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz (100 to 600) Hz (10 to 300) Hz (10 to 150) Hz (10 to 120) Hz (10 to 80) Hz (0 to 50) Hz (0 to 20) Hz (0 to 6) Hz (0 to 2) Hz (0 to 0.6) Hz (0 to 0.2) Hz	(220 to 400) pF 400 pF to 1.1 nF (1.1 to 3.3) nF (3.3 to 11) nF (11 to 33) nF (33 to 110) nF (110 to 330) nF 330 nF to 1.1 µF (1.1 to 3.3) µF (3.3 to 11) µF (11 to 33) µF (33 to 110) µF (110 to 330) µF 330 µF to 1.1 mF (1.1 to 3.3) mF (3.3 to 11) mF (11 to 33) mF (33 to 110) mF	4.6 mF/F + 6.7 pF 3.7 mF/F + 6.7 pF 3.5 mF/F + 6.7 pF 2.5 mF/F + 6.7 pF 2.1 mF/F + 6.7 pF 2.5 mF/F + 6.7 pF 1.8 mF/F + 20 pF 1.7 mF/F + 670 pF 1.8 mF/F + 2 nF 1.8 mF/F + 6.7 nF 2.8 mF/F + 20 nF 3 mF/F + 67 nF 3 mF/F + 200 nF 3 mF/F + 670 nF 3.3 mF/F + 2 µF 3.6 mF/F + 6.7 µF 5.1 mF/F + 20 µF 7.4 mF/F + 67 µF	Fluke 5522A
Capacitance – Measure (Constant Current)	Up to 2 nF (2 to 20) nF (20 to 200) nF 200 nF to 2 µF (2 to 20) µF (20 to 200) µF 200 µF to 2 mF (2 to 20) mF (20 to 100) mF	13 mF/F + 67 pF 6.7 mF/F + 80 pF 6.7 mF/F + 400 pF 6.7 mF/F + 4 nF 6.7 mF/F + 40 pF 6.7 mF/F + 400 pF 6.7 mF/F + 4 µF 6.7 mF/F + 40 µF 20 mF/F + 130 µF	RIGOL DM3068

Parameter/Equipment	Range	CMC ^{2, 5, 6} (±)	Comments
Electrical Simulation of Thermocouple Indicators ⁷ –			
Type B	(600 to 800) °C (800 to 1000) °C (1000 to 1550) °C (1550 to 1820) °C	0.29 °C + 0.58 % 0.23 °C + 0.58 % 0.2 °C + 0.58 % 0.22 °C + 0.58 %	Fluke 5522A
Type C	(0 to 150) °C (150 to 650) °C (650 to 1000) °C (1000 to 1800) °C (1800 to 2316) °C	0.2 °C + 1.2 % 0.17 °C + 1.2 % 0.21 °C + 1.2 % 0.33 °C + 1.2 % 0.56 °C + 1.2 %	
Type E	(-250 to -100) °C (-100 to -25) °C (-25 to 0) °C (0 to 350) °C (350 to 650) °C (650 to 1000) °C	0.33 °C + 1.2 % 0.11 °C + 1.2 % 0.09 °C + 1.2 % 0.09 °C + 0.58 % 0.11 °C + 0.58 % 0.14 °C + 0.58 %	
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.18 °C + 0.87 % 0.11 °C + 0.87 % 0.09 °C + 0.87 % 0.11 °C + 0.87 % 0.15 °C + 0.87 %	
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 0) °C (0 to 120) °C (120 to 1000) °C (1000 to 1372) °C	0.22 °C + 2.3 % 0.12 °C + 2.3 % 0.11 °C + 2.3 % 0.11 °C + 0.87 % 0.17 °C + 0.87 % 0.27 °C + 0.87 %	
Type L	(-200 to -100) °C (-100 to 800) °C (800 to 900) °C	0.25 °C + 0.87 % 0.17 °C + 0.87 % 0.11 °C + 0.87 %	
Type N	(-200 to -100) °C (-100 to -25) °C (-25 to 0) °C (0 to 120) °C (120 to 410) °C (410 to 1300) °C	0.27 °C + 2.3 % 0.15 °C + 2.3 % 0.13 °C + 2.3 % 0.13 °C + 0.87 % 0.12 °C + 0.87 % 0.18 °C + 0.87 %	

Parameter/Equipment	Range	CMC ^{2, 5, 6} (±)	Comments
Electrical Simulation of Thermocouple Indicators ⁷ – (cont)			
Type R	(0 to 250) °C (250 to 400) °C (400 to 1000) °C (1000 to 1767) °C	0.38 °C + 0.29 % 0.23 °C + 0.29 % 0.22 °C + 0.29 % 0.27 °C + 0.29 %	Fluke 5522A
Type S	(0 to 250) °C (250 to 1000) °C (1000 to 1400) °C (1400 to 1767) °C	0.31 °C + 0.29 % 0.24 °C + 0.29 % 0.25 °C + 0.29 % 0.31 °C + 0.29 %	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.42 °C + 1.7 % 0.16 °C + 1.7 % 0.11 °C + 0.87 % 0.09 °C + 0.09 %	
Type U	(-200 to 0) °C (0 to 600) °C	0.37 °C + 1.2 % 0.18 °C + 0.87 %	
Electrical Simulation of RTDs ⁷ –			
Pt 385 (100 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.36 °C + 0.005 [t] 0.38 °C + 0.005 [t]	Fluke 5522A [t] = temperature
Pt 3926 (100 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C	0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.36 °C + 0.005 [t]	
Pt 3916 (100 Ω)	(-200 to -190) °C (-190 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	0.38 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.38 °C + 0.005 [t]	

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Electrical Simulation of RTDs ⁷ – (cont)			
Pt 385 (200 Ω)	(-200 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.36 °C + 0.005 [t] 0.36 °C + 0.005 [t] 0.36 °C + 0.005 [t] 0.11 °C + 0.005 [t]	Fluke 5522A [t] = temperature
Pt 385 (500 Ω)	(-200 to -80) °C (-80 to 100) °C (100 to 260) °C (260 to 400) °C (400 to 600) °C (600 to 630) °C	0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t]	
Pt 385 (1000 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 600) °C (600 to 630) °C	0.42 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.35 °C + 0.005 [t] 0.38 °C + 0.005 [t]	
PtNi 385 (120 Ω)	(-80 to 100) °C (100 to 260) °C	0.35 °C + 0.005 [t] 0.36 °C + 0.005 [t]	
Cu 427 (10 Ω)	(-100 to 260) °C	0.40 °C + 0.005 [t]	

IV. Mechanical

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Impulse Hammers	Up to 5000 lbf	2.2 %	Calibrated mass and accelerometers

Parameter/Equipment	Range	CMC ^{2, 4, 5} (±)	Comments
Force Cells	Up to 5000 lbf	2.2 %	Calibrated mass and accelerometers
Pressure (Analog and Transducers)	Up to 2000 psi Up to 1 in H ₂ O (1 to 3) in H ₂ O (3 to 10) in H ₂ O (10 to 30) in H ₂ O	0.16 % 0.0053 % FS + 0.0076 % 0.0045 % FS + 0.0076 % 0.0041 % FS + 0.0076 % 0.0035 % FS + 0.0076 %	Precision pressure gage GE Ruska 7250 lp

V. Time & Frequency

Parameter/Equipment	Range	CMC ^{2, 6} (±)	Comments
Frequency – Measuring Equipment	0.01 Hz to 2.000 MHz	1.7 µHz/Hz + 3.3 µHz	Fluke 5522A-SC600

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ In the statement of CMC, D is the numerical value of the diagonal length of the device measured in inches; FS represents "Full Scale".

⁵ In the statement of CMC, percentages are percentages of reading, unless otherwise indicated.

⁶The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMCs are expressed as either a specific value that covers the full range or as a fraction/percentage of the reading plus a fixed floor specification.

⁷Measure and measuring equipment.



Accredited Laboratory

A2LA has accredited

DGI METROLOGY/DIMENSIONAL GAUGE CO.

Inman, SC

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).



Presented this 9th day of May 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 4870.01
Valid to January 31, 2020

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.