



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**  
**& ANSI/NCSL Z540-1-1994**

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**CALIBRATION**

Valid To: April 30, 2026

Certificate Number: 1486.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1, 5</sup>:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2, 3</sup> ( $\pm$ )	Comments
DC Voltage – Generate	(0 to 330) mV 330 mV to 3.3 V (3.3 to 33) V (33 to 330) V (330 to 1000) V	0.8 $\mu$ V + 16 nV/mV 17 $\mu$ V + 5 $\mu$ V/V 88 $\mu$ V + 7 $\mu$ V/V 0.56 mV + 14 $\mu$ V/V 2.7 mV + 14 $\mu$ V/V	Fluke 5520A
DC Voltage – Measure	Up to 100 mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1000) V	0.33 $\mu$ V + 17 $\mu$ V/V 0.52 $\mu$ V + 8 $\mu$ V/V 8.8 $\mu$ V + 8.1 $\mu$ V/V 35 $\mu$ V + 10 $\mu$ V/V 0.2 mV + 12 $\mu$ V/V	Agilent 3458A
DC Current – Generate	Up to 330 $\mu$ A 330 $\mu$ A 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	16 nA + 0.12 nA/ $\mu$ A 41 nA + 80 nA/mA 0.21 $\mu$ A + 80 nA/mA 2.1 $\mu$ A + 80 nA/mA 33 $\mu$ A + 0.16 mA/A 0.37 mA + 0.13 mA/A 0.49 mA + 0.39 mA/A 9.4 mA + 0.8 mA/A	Fluke 5520A
Clamp-On Ammeters	(3.2 to 200) A (16 to 1000) A	7.5 mA + 2.6 mA/A 37 mA + 2.6 mA/A	5520A w/: 10-turn coil 50-turn coil

Parameter/Equipment	Range	CMC <sup>2,3</sup> ( $\pm$ )	Comments
DC Current – Measure	(0 to 100) nA (0.1 to 1) $\mu$ A (1 to 10) $\mu$ A (10 to 100) $\mu$ A (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A	41 pA + 89 $\mu$ A/A 41 pA + 24 pA/ $\mu$ A 40 pA + 24 pA/ $\mu$ A 82 pA + 22 pA/ $\mu$ A 6 nA + 24 nA/mA 53 nA + 21 nA/mA 0.53 $\mu$ A + 37 nA/mA 10 $\mu$ A + 0.11 mA/A	Agilent 3458A
Resistance – Generate	(0 to 10.9999) $\Omega$ (11 to 32.9999) $\Omega$ (33 to 109.9999) $\Omega$ (110 to 329.9999) $\Omega$ (330 to 1099.999) $\Omega$ (1.1 to 3.299 999) k $\Omega$ (33 to 10.999 99) k $\Omega$ (1 to 32.999 99) k $\Omega$ (33 to 109.999) k $\Omega$ (110 to 329.999) k $\Omega$ (0.33 to 1.099 99) M $\Omega$ (1.1 to 3.299 00) M $\Omega$ (3.3 to 10.9999) M $\Omega$ (11 to 32.9999) M $\Omega$ (33 to 109.9999) M $\Omega$ (110 to 329.9999) M $\Omega$ (330 to 1100) M $\Omega$	1.2 m $\Omega$ + 24 $\mu$ $\Omega$ / $\Omega$ 1.5 m $\Omega$ + 24 $\mu$ $\Omega$ / $\Omega$ 1.9 m $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 4.1 m $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 9.1 m $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 41 m $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 92 m $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 0.41 $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 0.9 $\Omega$ + 22 $\mu$ $\Omega$ / $\Omega$ 8.4 $\Omega$ + 26 $\mu$ $\Omega$ / $\Omega$ 14 $\Omega$ + 26 $\mu$ $\Omega$ / $\Omega$ 93 $\Omega$ + 48 $\mu$ $\Omega$ / $\Omega$ 0.4 k $\Omega$ + 0.1 m $\Omega$ / $\Omega$ 4.4 k $\Omega$ + 0.2 m $\Omega$ / $\Omega$ 16 k $\Omega$ + 0.4 m $\Omega$ / $\Omega$ 0.35 M $\Omega$ + 2.4 m $\Omega$ / $\Omega$ 4.4 M $\Omega$ + 12 m $\Omega$ / $\Omega$	Fluke 5520A
Resistance – Measure	(0 to 10) $\Omega$ (10 to 100) $\Omega$ (0.1 to 1) k $\Omega$ (1 to 10) k $\Omega$ (10 to 100) k $\Omega$ (0.1 to 1) M $\Omega$ (1 to 10) M $\Omega$ (10 to 100) M $\Omega$ (0.1 to 1) G $\Omega$	55 $\mu$ $\Omega$ + 15 $\mu$ $\Omega$ / $\Omega$ 0.52 m $\Omega$ + 13 $\mu$ $\Omega$ / $\Omega$ 0.53 m $\Omega$ + 10 $\mu$ $\Omega$ / $\Omega$ 5.3 m $\Omega$ + 10 $\mu$ $\Omega$ / $\Omega$ 53 m $\Omega$ + 11 $\mu$ $\Omega$ / $\Omega$ 2.3 $\Omega$ + 17 $\mu$ $\Omega$ / $\Omega$ 0.1 k $\Omega$ + 55 $\mu$ $\Omega$ / $\Omega$ 1 k $\Omega$ + 0.52 m $\Omega$ / $\Omega$ 10 k $\Omega$ + 5.1 m $\Omega$ / $\Omega$	Agilent 3458A
Electrical Calibration of Thermocouple Indicating Devices – Type B	(600 to 800) °C (800 to 1000) °C (1000 to 1550) °C (1550 to 1820) °C	0.35 °C 0.27 °C 0.24 °C 0.27 °C	Fluke 5520A

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Electrical Calibration of Thermocouple Indicating Devices – (cont)			
Type C	(0 to 150) °C (150 to 650) °C (650 to 1000) °C (1000 to 1800) °C	0.21 °C 0.25 °C 0.4 °C 0.68 °C	Fluke 5520A
Type E	(-200 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1000) °C	0.4 °C 0.13 °C 0.11 °C 0.13 °C 0.17 °C	
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.22 °C 0.13 °C 0.11 °C 0.14 °C 0.18 °C	
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1000 to 1372) °C	0.27 °C 0.14 °C 0.13 °C 0.21 °C 0.32 °C	
Type N	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1300) °C	0.32 °C 0.18 °C 0.15 °C 0.15 °C 0.22 °C	
Type R	(0 to 250) °C (250 to 400) °C (400 to 1000) °C (1000 to 1767) °C	0.46 °C 0.28 °C 0.27 °C 0.33 °C	
Type S	(0 to 250) °C (250 to 1000) °C (1000 to 1400) °C (1400 to 1767) °C	0.38 °C 0.29 °C 0.3 °C 0.37 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.51 °C 0.21 °C 0.15 °C 0.13 °C	

Parameter/Equipment	Range	CMC <sup>2, 3</sup> ( $\pm$ )	Comments
Capacitance – Generate	(0.19 to 0.3999) nF (0.4 to 1.0999) nF (1.1 to 3.2999) nF (3.3 to 10.9999) nF (11 to 32.9999) nF (33 to 109.999) nF (110 to 329.999) nF (0.33 to 1.099 99) $\mu$ F (1.1 to 3.299 99) $\mu$ F (3.3 to 10.9999) $\mu$ F (11 to 32.9999) $\mu$ F (33 to 109.999) $\mu$ F (110 to 329.999) $\mu$ F (0.33 to 1.099 99) mF (1.1 to 3.299 99) mF (3.3 to 10.9999) mF (11 to 32.9999) mF	9 pF + 4 pF/nF 10 pF + 4 pF/nF 13 pF + 4 pF/nF 15 pF + 2 pF/nF 0.1 nF + 2 pF/nF 0.15 nF + 2 pF/nF 0.5 nF + 2 pF/nF 1.5 nF + 2 nF/ $\mu$ F 5 nF + 2nF/ $\mu$ F 14 nF + 2 nF/ $\mu$ F 60 nF + 3 nF/ $\mu$ F 0.2 $\mu$ F + 4 nF/ $\mu$ F 0.63 $\mu$ F + 4 nF/ $\mu$ F 2 $\mu$ F + 4 $\mu$ F/mF 7 $\mu$ F + 4 $\mu$ F/mF 38 $\mu$ F + 2.5 $\mu$ F/mF 90 $\mu$ F + 6 $\mu$ F/mF	Fluke 5520A
Electrical Calibration of RTD Indicators –			
Pt 385, 100 $\Omega$	(-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	0.042 °C 0.041 °C 0.057 °C 0.073 °C 0.081 °C 0.097 °C 0.19 °C	Fluke 5520A
Pt 3926, 100 $\Omega$	(-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C	0.041 °C 0.041 °C 0.057 °C 0.073 °C 0.081 °C 0.097 °C	
Pt 3916, 100 $\Omega$	(-190 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C	0.033 °C 0.042 °C 0.049 °C 0.065 °C 0.073 °C 0.19 °C	
Pt 385, 200 $\Omega$	(-200 to 0) °C <td>0.034 °C 0.033 °C 0.042 °C 0.097 °C 0.11 °C 0.11 °C 0.13 °C</br></td> <td></td>	0.034 °C 0.033 °C 0.042 °C 0.097 °C 0.11 °C 	

Parameter/Equipment	Range	CMC <sup>2</sup> ( $\pm$ )	Comments
Electrical Calibration of RTD Indicators – (cont)			
Pt 385, 500 $\Omega$	(-200 to -80) °C (> -80 to 100) °C (> 100 to 260) °C (> 260 to 400) °C (> 400 to 600) °C (> 600 to 630) °C	0.034 °C 0.042 °C 0.05 °C 0.065 °C 0.073 °C 0.089 °C	Fluke 5520A
Pt 385, 1 k $\Omega$	(-200 to 0) °C (> 0 to 100) °C (> 100 to 260) °C (> 260 to 300) °C (> 300 to 600) °C (> 600 to 630) °C	0.026 °C 0.033 °C 0.042 °C 0.049 °C 0.057 °C 0.19 °C	
PtNi 385, 120 $\Omega$	(-80 to 100) °C (> 100 to 260) °C	0.066 °C 0.11 °C	
Cu427, 10 $\Omega$	(-100 to 260) °C	0.24 °C	

Parameter/Range	Frequency	CMC <sup>2,3</sup> ( $\pm$ )	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 200) kHz (200 to 500) kHz	5.5 $\mu$ V + 0.64 $\mu$ V/mV 5 $\mu$ V + 0.12 $\mu$ V/mV 5 $\mu$ V + 0.16 $\mu$ V/mV 5.6 $\mu$ V + 0.8 $\mu$ V/mV 12 $\mu$ V + 2.8 $\mu$ V/mV 47 $\mu$ V + 6.4 $\mu$ V/mV 47 $\mu$ V + 6.4 $\mu$ V/mV	Fluke 5520A
(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 200) kHz (200 to 500) kHz	14 $\mu$ V + 0.24 $\mu$ V/mV 24 $\mu$ V + 87 nV/mV 11 $\mu$ V + 0.13 $\mu$ V/mV 35 $\mu$ V + 0.28 $\mu$ V/mV 47 $\mu$ V + 0.64 $\mu$ V/mV 0.11 mV + 1.6 $\mu$ V/mV 0.11 mV + 1.6 $\mu$ V/mV	
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 200) kHz (200 to 500) kHz	0.12 mV + 0.24 mV/V 88 $\mu$ V + 0.12 mV/V 99 $\mu$ V + 0.15 mV/V 0.12 mV + 0.24 mV/V 0.29 mV + 0.56 mV/V 1.1 mV + 1.9 mV/V 1.1 mV + 1.9 mV/V	

Parameter/Range	Frequency	CMC <sup>2,3</sup> ( $\pm$ )	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	1.3 mV + 0.24 mV/V 0.94 mV + 0.12 mV/V 1.6 mV + 0.18 mV/V 1.4 mV + 0.28 mV/V 3.7 mV + 0.72 mV/V	Fluke 5520A
(33 to 330) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	6.8 mV + 0.15 mV/V 10 mV + 0.16 mV/V 12 mV + 0.2 mV/V 13 mV + 0.24 mV/V 93 mV + 1.6 mV/V	
(330 to 1020) V	45 Hz to 10 kHz	88 mV + 0.24 mV/V	
AC Voltage – Measure			
(1 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	6.1 $\mu$ V + 0.0003 mV/mV 4.1 $\mu$ V + 0.0002 mV/mV 4.2 $\mu$ V + 0.0003 mV/mV 4.9 $\mu$ V + 0.001 mV/mV 9 $\mu$ V + 0.005 mV/mV 45 $\mu$ V + 0.04 mV/mV	Agilent 3458A
(10 to 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	12 $\mu$ V + 0.000 07 mV/mV 2.7 $\mu$ V + 0.000 07 mV/mV 11 $\mu$ V + 0.000 14 mV/mV 12 $\mu$ V + 0.0003 mV/mV 17 $\mu$ V + 0.0008 mV/mV 47 $\mu$ V + 0.003 mV/mV 0.12 mV + 0.01 mV/mV 3.8 mV + 0.02 mV/mV	
100 mV to 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	0.12 mV + 0.000 07 V/V 0.1 mV + 0.000 07 V/V 0.11 mV + 0.000 14 V/V 0.12 mV + 0.0003 V/V 0.17 mV + 0.0008 V/V 0.47 mV + 0.003 V/V 1.2 mV + 0.01 V/V 38 mV + 0.015 V/V	
(1 to 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	1.2 mV + 0.000 07 V/V 1 mV + 0.000 07 V/V 1 mV + 0.000 14 V/V 1.2 mV + 0.0003 V/V 1.7 mV + 0.0008 V/V 4.7 mV + 0.003 V/V 12 mV + 0.01 V/V 0.38 V + 0.015 V/V	

Parameter/Range	Frequency	CMC <sup>2, 3</sup> ( $\pm$ )	Comments
AC Voltage – Measure (cont)			
(10 to 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 (0.3 to 1) MHz	13 mV + 0.0002 V/V 11 mV + 0.0002 V/V 11 mV + 0.0002 V/V 13 mV + 0.0004 V/V 21 mV + 0.001 V/V 57 mV + 0.004 V/V 0.17 V + 0.015 V/V	Agilent 3458A
(100 to 1000) V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	99 mV + 0.0004 V/V 85 mV + 0.0004 V/V 98 mV + 0.0006 V/V 0.14 V + 0.0012 V/V 0.27 V + 0.003 V/V	
AC Current – Measure			
Up to 100 $\mu$ A	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz	57 nA + 4 nA/ $\mu$ A 45 nA + 1.5 nA/ $\mu$ A 40 nA + 0.64 nA/ $\mu$ A	Agilent 3458A
(0.1 to 1) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.43 $\mu$ A + 0.0041 mA/mA 0.31 $\mu$ A + 0.0016 mA/mA 0.26 $\mu$ A + 0.000 67 mA/mA 0.25 $\mu$ A + 0.000 37 mA/mA 0.26 $\mu$ A + 0.000 67 mA/mA 0.63 $\mu$ A + 0.0042 mA/mA 1.8 $\mu$ A + 0.0056 mA/mA	
(1 to 10) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	2.4 $\mu$ A + 0.0041 mA/mA 2.3 $\mu$ A + 0.0016 mA/mA 2.3 $\mu$ A + 0.000 67 mA/mA 2.3 $\mu$ A + 0.000 37 mA/mA 2.3 $\mu$ A + 0.000 67 mA/mA 4.5 $\mu$ A + 0.0041 mA/mA 16 $\mu$ A + 0.0056 mA/mA	
(10 to 100) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	42 $\mu$ A + 0.004 mA/mA 30 $\mu$ A + 0.0015 mA/mA 25 $\mu$ A + 0.0006 mA/mA 24 $\mu$ A + 0.0003 mA/mA 25 $\mu$ A + 0.0006 mA/mA 62 $\mu$ A + 0.004 mA/mA 0.18 mA + 0.0055 mA/mA	
(0.1 to 1) A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 20) kHz (20 to 50) kHz	0.42 mA + 0.0041 A/A 0.3 mA + 0.0017 A/A 0.26 mA + 0.0009 A/A 0.27 mA + 0.0011 A/A 0.37 mA + 0.0031 A/A 0.92 mA + 0.01 A/A	

Parameter/Range	Frequency	CMC <sup>2, 3</sup> ( $\pm$ )	Comments
AC Current – Generate			
(29 to 330) $\mu$ A	(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	0.13 $\mu$ A + 1.6 nA/ $\mu$ A 0.12 $\mu$ A + 1.2 nA/ $\mu$ A 0.11 $\mu$ A + 1 nA/ $\mu$ A 0.19 $\mu$ A + 2.4 nA/ $\mu$ A 0.35 $\mu$ A + 6.4 nA/ $\mu$ A 0.70 $\mu$ A + 13 nA/ $\mu$ A	Fluke 5520A
330 $\mu$ A 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	0.65 $\mu$ A + 1.6 $\mu$ A/mA 0.45 $\mu$ A + 1 $\mu$ A/mA 0.39 $\mu$ A + 0.8 $\mu$ A/mA 0.69 $\mu$ A + 1.6 $\mu$ A/mA 2.9 $\mu$ A + 1.6 $\mu$ A/mA 3.4 $\mu$ A + 8 $\mu$ A/mA	
(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	6.4 $\mu$ A + 1.4 $\mu$ A/mA 4 $\mu$ A + 0.72 $\mu$ A/mA 2.7 $\mu$ A + 0.32 $\mu$ A/mA 3.7 $\mu$ A + 0.64 $\mu$ A/mA 7.7 $\mu$ A + 1.6 $\mu$ A/mA 14 $\mu$ A + 3.2 $\mu$ A/mA	
(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	65 $\mu$ A + 1.4 $\mu$ A/mA 42 $\mu$ A + 0.72 $\mu$ A/mA 29 $\mu$ A + 0.31 $\mu$ A/mA 68 $\mu$ A + 0.8 $\mu$ A/mA 0.13 mA + 1.6 $\mu$ A/mA 0.27 mA + 3.2 $\mu$ A/mA	
330 mA to 1.1 A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.56 mA + 1.4 mA/A 0.22 mA + 0.4 mA/A 2.4 mA + 4.8 mA/A 11 mA + 20 mA/A	
(1.1 to 3) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	1.7 mA + 1.4 mA/A 0.61 mA + 0.48 mA/A 6.1 mA + 4.8 mA/A 26 mA + 20 mA/A	
(3 to 11) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	3.1 mA + 0.48 mA/A 4 mA + 0.8 mA/A 74 mA + 24 mA/A	
(11 to 20.5) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	15 mA + 0.96 mA/A 17 mA + 1.2 mA/A 0.27 A + 24 mA/A	
Clamp-On Ammeters:			
(3.2 to 200) A	45 Hz to 1 kHz	7.6 mA + 3.1 mA/A	5520A w/: 10-turn coil
(16 to 1000) A	45 Hz to 1 kHz	38 mA + 3.1 mA/A	50-turn coil

## II. Mechanical

Parameter/Equipment	Range	CMC <sup>2, 4, 6</sup> ( $\pm$ )	Comments
Vacuum – Measure & Measuring Equipment	(1 to 30) in·Hg	0.000 52 in·Hg + 0.000 16 in·Hg/in·Hg	Pressurements T3550/3 DWT
Pressure – Measure & Measuring Equipment			
Pneumatic	(5 to 400) in·H <sub>2</sub> O	0.007 in·H <sub>2</sub> O + 0.000 16 in·H <sub>2</sub> O/in·H <sub>2</sub> O	Pressurements T3550/3 DWT
	(8 to 17) psia	0.01 %	Mensor CPC6050 with sensor range (8 to 17) psia
	(-15 to 15) psig	0.003 psig	Mensor CPC6050 with sensor range (-15 to 15) psig
	(-15 to 50) psig (> 50 to 150) psig	0.0044 psig 0.008 %	Mensor CPC6050 with sensor range (-15 to 150) psig
	(-15 to 100) psig (> 100 to 300) psig	0.0083 psi 0.008 %	Mensor CPC6050 with sensor range (-15 to 300) psig
	(-15 to 330) psig (> 330 to 1000) psig	0.027 psi 0.008 %	Mensor CPC6050 with sensor range (-15 to 1000) psig
Hydraulic	(> 1000 to 10 000) psig	0.17 psi + 0.000 16 psi/psi	Pressurements W2200-3-P DWT

## III. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2, 4</sup> ( $\pm$ )	Comments
Temperature – Measure	(-197 to 660) °C	0.0036 °C + 0.000 019 x T <sub>Change from -197</sub>	ADT286-ST, 5699 SPRT
	(> 660 to 1200) °C	2 °C + 0.0031 x T <sub>Change from 660</sub>	ADT286-ST, Type-B thermocouple

Parameter/Equipment	Range	CMC <sup>2, 4</sup> ( $\pm$ )	Comments
Temperature – Measuring Equipment	(-80 to 110) °C (> 110 to 300) °C (500 to 1200) °C	0.01 °C + 0.000 006 x T <sub>Change</sub> from -80 0.026 °C + 0.000 032 x T <sub>Change</sub> from 110 1.9 °C + 0.0027 x T <sub>Change</sub> from 500	ADT286-ST, 5699, SPRT, calibration baths ADT286-ST, Type-B thermocouple, calibration furnace
Relative Humidity – Measuring Equipment	(10 to 95) % RH	0.61 % RH	Thunder Scientific 2500S humidity generator

#### IV. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2, 4</sup> ( $\pm$ )	Comments
Frequency – Measuring Equipment	10 mHz to 120 Hz 120 Hz to 1.2 kHz (1.2 to 12) kHz (12 to 120) kHz 120 kHz to 1.2 MHz (1.2 to 2.0) MHz	6.8 µHz + 1.9 µHz/Hz 0.24 mHz + 1.9 µHz/Hz 2.3 mHz + 1.9 µHz/Hz 23 mHz + 1.9 µHz/Hz 0.23 Hz + 1.9 µHz/Hz 2.3 Hz + 1.9 µHz/Hz	Fluke 5520A
Frequency – Measure	1 mHz to 225 MHz	5.8 µHz + 4.1 µHz/Hz	Agilent 53131A
Stopwatches & Timers (Totalize Method)	100 ms to 24 hrs	37 ms	Agilent 53131A, Fluke 5520A

<sup>1</sup> This laboratory offers commercial calibration services.

<sup>2</sup> 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.

<sup>3</sup> The measurands stated are generated using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure the measurand in the ranges indicated. CMCs are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.

<sup>4</sup> The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

<sup>5</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.

<sup>6</sup> In the statement of CMC, % is defined as percent of reading unless otherwise noted.



# Accredited Laboratory

A2LA has accredited

**TRESCAL, INC.**

Winston-Salem, NC

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 the requirements of ANSI/NCSL Z540-1-1994 and 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 21<sup>st</sup> day of March 2024.

A handwritten signature in blue ink, appearing to read "Trace McInturff".

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1486.01  
Valid to April 30, 2026

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