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CERTIFICATE OF ACCREDITATION

This is to attest

STANDARD CALIBRATIONS INC

501 RESOURCE ROW
CHESAPEAKE, VIRGINIA 23320 U.S.A.

Calibration Laboratory CL-120

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiration Date September 1, 2027

Effective Date January 20, 2026



International Accreditation Service
Issued under the authority of IAS management

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STANDARD CALIBRATIONS INC

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Accredited to ISO/IEC 17025:2017

Effective Date January 20, 2026

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2,6} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Calipers ⁵	0 in to 60 in	(290 + 10 L) µin L = Length	Direct Method Gage Blocks, Master Rings
Cylindrical Gages ⁵ (Pins, Plugs, Discs)	0 in Ø to 7 in Ø	(3.8 + 2.7 D) µin Ø D = Diameter	Direct Method P&W LMU, Gage Blocks
Linear Indicators ⁵ (Digital, Dial, Test, etc.)	0 in to 4 in	25 µin	Direct Method P&W Type C
Height Gages ⁵	0 in to 84 in	(18 + 2.8 L) µin L = Length	Direct Method Gage Blocks, Surface Plate
Flatness ⁵ Parallelism ⁵	0 in to 1 in Ø 0 in to 0.001 in	6.5 µin 6.5 µin	Direct Method Optical Flats
Gage Blocks ⁵	0 in to 4 in 4 in 13 in	(2.3 + 1.5 L) µin (1.5 + 1.5 L) µin	Comparison Method P&W LMU, Gage Blocks
Micrometers ⁵	0 in to 1 in 1 to 60 in	(3.7 + 1.5 L) µin (3.5 + 3 L) µin L = Length	Direct Method Gage Blocks
Micrometer End Standards ⁵	0 in to 59 in	(25 + 1.6 L) µin L = Length	Comparison Method Starrett 717, Gage Blocks
Plain Rings ⁵	0 in to 8 in Ø	(12 + 2.7 L) µin L = Length	Direct Method P&W LMU, Gage Blocks,
Thread Plugs – Major Diameter Pitch Diameter	(2 TPI to 120 TPI) 0 in to 20 in 0 in to 20 in	(26 + 1.6 L) µin (83 + 3.5 L) µin L = Length	Direct Method P&W Type C Gage Blocks, Thread Wires
Thread Rings – Minor Diameter Pitch Diameter	0 in Ø to 4 in Ø 0 in Ø to 4 in Ø	(36 + 4.3 L) µin (96 + 3.8 L) µin L = Length	Direct Method P&W LMU, Master Ring Gage, Thread Setting Plug

* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.



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Thread Wires ⁵	2 TPI to 120 TPI	(6.9 + 1.5 L) µin	Direct Method P&W LMU, Gage Blocks
Mechanical			
Torque Measuring Devices	5 ozf·in to 2000 lbf·ft	0.081 %	Direct Method Torque Arm, Class F Weights
Torque Wrenches	5 ozf·in to 2000 lbf·ft	0.34 %	Direct Method CDI 4:1 Transducer CDI Load Cell (x4) w/ Display
Pressure Measuring Equipment ⁷	0 in H ₂ O to 100 in H ₂ O 2 psi to 160 psi 58 psi to 810 psi 145 psi to 3988 psi 290 psi to 15970 psi 3000 psi to 30000 psi	0.0058 % + 0.000058 in H ₂ O 0.0007 % 0.0019 % 0.0039 % 0.0044 % 15 psi	Comparison Method Fluke 7252i Fluke PG System Omega PX01S1-30KGI
Vacuum Measuring Equipment ⁷	0 in Hg to 29.8 in Hg	0.01 % FS	Comparison Method Fluke 6270A
Compression – Dynamometers/Load Cells ⁷	0.5 lbf to 5 lbf ⁷ 5 lbf to 300 lbf ⁷ 100 lbf to 2000 lbf ⁷ 500 lbf to 25000 lbf ⁷ 25000 lbf to 60000 lbf	0.41 % 0.073 % 0.095 % 0.2 % 18 lbf	Comparison Method Force Transducers Proving Rings
Tension – Dynamometers/Load Cells ⁷	0.5 lbf to 5 lbf ⁷ 5 lbf to 300 lbf ⁷ 100 lbf to 2000 lbf ⁷ 500 lbf to 25000 lbf ⁷ 25000 lbf to 50000 lbf	0.41 % 0.073 % 0.07 % 0.2 % 18 lbf	Comparison Method Force Transducers Proving Ring
Force Measuring Equipment ⁷	0.125 lbf to 625 lbf	0.011 % + 0.0029 lbf	Direct Method Class 6 Weights
Scales and Balances	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1000 g	0.00020 g 0.00015 g 0.00023 g 0.00039 g 0.00035 g 0.00054 g 0.00041 g 0.00066 g 0.0018 g 0.0033 g	Comparison method using E2 Weights & Class 1 Weights

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Scales and Balances (continued)	2 lb 5 lb 10 lb 20 lb 50 lb	0.00065 lb 0.0016 lb 0.002 lb 0.0032 lb 0.0075 lb	Comparison Method using Class F Weights
Fuel Flow Meters (Turbine, Positive Displacement, Rotometers, Vortex, Ultrasonic Meters)	2 gal/min to 30 gal/min 30 gal/min to 150 gal/min	0.14 % 0.12 %	Comparison method E+H Promass
Water Flow Meters (Turbine, Positive Displacement, Mag, Rotometers, Vortex, Ultrasonic Meters)	2 gal/min to 8.8 gal/min 8.8 gal/min to 29 gal/min 29 gal/min to 79 gal/min 79 gal/min to 199 gal/min 199 gal/min to 309 gal/min 309 gal/min to 794 gal/min 794 gal/min to 1100 gal/min	0.11 % 0.14 % 0.18 % 0.12 % 0.14 % 0.14 % 0.24 %	Comparison method E+H Promass
Thermal			
Temperature Enclosures / Chambers /Ovens ⁷	-196 °C to -40 °C -40 °C to 220 °C 220 °C to 420 °C 420 °C to 660 °C	0.0045 °C 0.0045 °C 0.0068 °C 0.011 °C	Direct Method Fluke 5699 SPRT, Fluke 8508A
Temperature Measuring Equipment ⁷	-196 °C to -40 °C -40 °C to 220 °C 220 °C to 420 °C 420 °C to 660 °C	0.015 °C 0.015 °C 0.018 °C 0.021 °C	Comparison Method Fluke 5699 SPRT, Fluke 8508A
Infrared Thermometry – Measuring Equipment	35 °C to 500 °C	0.27 % + 0.14 °C	Direct Method Fluke 4181
Hygrometers / RH Probes	11 %RH to 95 %RH	0.01 % + 0.57 %RH	Direct Comparison Thunder Scientific 2900
Electrical – DC/LF			
DC Voltage – Generate ^{3,7}	0 mV to 329.9999 mV 0.330 V to 3.299999 V 3.30 V to 32.99999 V 33.0 V to 329.9999 V 330 V to 1020 V	26 µV/V + 0.8 µV 7.1 µV/V + 1 µV 6.3 µV/V + 10 µV 8.7 µV/V + 100 µV 18 µV/V + 1000 µV	Direct Method Fluke 5560A
DC Voltage – Measure ^{4,7}	0 mV to 199.99 mV	4.5 µV/V + 0.58 nV	Direct Method

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DC Voltage – Measure ^{4,7} (continued)	0.19999 V to 1.9999 V 1.9999 V to 19.999 V 19.999 V to 199.99 V 199.99 V to 1050 V	3.0 $\mu\text{V/V}$ + 5.8 nV 3.2 $\mu\text{V/V}$ + 58 nV 4.5 $\mu\text{V/V}$ + 0.58 μV 4.6 $\mu\text{V/V}$ + 5.8 μV	Fluke 8508A
DC Current – Generate ^{3,7}	0 μA to 119.999 μA 0.12 mA to 1.19999 mA 1.2 mA to 11.99999 mA 12 mA to 119.9999 mA 0.12 A to 1.19999 A 1.2 A to 3.09999 A 3.1 A to 11.99999 A 12 A to 30.2 A 20 A to 149.999 A 150 A to 1025 A	100 $\mu\text{A/A}$ + 0.006 μA 79 $\mu\text{A/A}$ + 0.015 μA 79 $\mu\text{A/A}$ + 0.08 μA 79 $\mu\text{A/A}$ + 0.8 μA 120 $\mu\text{A/A}$ + 10 μA 230 $\mu\text{A/A}$ + 150 μA 240 $\mu\text{A/A}$ + 250 μA 780 $\mu\text{A/A}$ + 500 μA 0.29 % + 17 mA 0.30 % + 58 mA	Direct Method Fluke 5560A Fluke 55XXA, Fluke 5500A/COIL
DC Current – Measure ^{4,7}	0 μA to 199.99 μA 0.19999 mA to 1.9999 mA 1.9999 mA to 19.999 mA 19.999 mA to 199.99 mA 0.19999 A to 1.9999 A 1.9999 A to 19.999 A	13 $\mu\text{A/A}$ + 5.8 pA 12 $\mu\text{A/A}$ + 58 pA 14 $\mu\text{A/A}$ + 0.58 nA 36 $\mu\text{A/A}$ + 5.8 nA 0.017 % + 58 nA 0.042 % + 0.58 μA	Direct Method Fluke 8508A
DC Shunt Current – Measure ^{4,7}	19.999 A to 300 A	0.019 % + 58 nA	V/R method Fluke 8508A, Shunt
DC Resistance – Generate ^{3,7}	0 Ω to 11.9999 Ω 12 Ω to 119.9999 Ω 120 Ω to 1.19999 k Ω 1.2 k Ω to 11.99999 k Ω 12 k Ω to 119.99999 k Ω 120 k Ω to 1.19999 M Ω 1.2 M Ω to 11.99999 M Ω 12 M Ω to 119.99999 M Ω 120 M Ω to 1200 M Ω	20 $\mu\Omega/\Omega$ + 1 m Ω 20 $\mu\Omega/\Omega$ + 1 m Ω 21 $\mu\Omega/\Omega$ + 2 m Ω 21 $\mu\Omega/\Omega$ + 20 m Ω 21 $\mu\Omega/\Omega$ + 200 m Ω 22 $\mu\Omega/\Omega$ + 2 Ω 30 $\mu\Omega/\Omega$ + 30 Ω 440 $\mu\Omega/\Omega$ + 2.5 k Ω 0.33 % + 100 k Ω	Direct Method Fluke 5560A
DC Resistance – Measure ^{4,7}	0 Ω to 1.9999 Ω 1.9999 Ω to 19.999 Ω 19.999 Ω to 199.99 Ω 0.19999 k Ω to 1.9999 k Ω 1.9999 k Ω to 19.999 k Ω 19.999 k Ω to 199.99 k Ω 0.19999 M Ω to 1.9999 M Ω 1.9999 M Ω to 19.999 M Ω 19.999 M Ω to 199.99 M Ω 0.19999 G Ω to 1.9999 G Ω 1.9999 G Ω to 19.999 G Ω	16 $\mu\Omega/\Omega$ + 5.8 n Ω 9.0 $\mu\Omega/\Omega$ + 58 n Ω 7.5 $\mu\Omega/\Omega$ + 0.58 $\mu\Omega$ 7.5 $\mu\Omega/\Omega$ + 5.8 $\mu\Omega$ 7.5 $\mu\Omega/\Omega$ + 58 $\mu\Omega$ 7.5 $\mu\Omega/\Omega$ + 0.58 m Ω 8.7 $\mu\Omega/\Omega$ + 5.8 m Ω 20 $\mu\Omega/\Omega$ + 58 m Ω 78 $\mu\Omega/\Omega$ + 0.58 Ω 0.076 % + 5.8 Ω 0.085 % + 58 Ω	Direct Method Fluke 8508A

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Electrical Simulation of Thermocouples - Source & Measure ⁷			Direct Method Fluke 5560A
Type B	(600 to 800) °C (800 to 1000) °C (1000 to 1550) °C (1550 to 1820) °C	0.38 °C 0.27 °C 0.24 °C 0.26 °C	
Type E	(-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1000) °C	0.29 °C 0.18 °C 0.17 °C 0.18 °C 0.2 °C	
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.2 °C 0.16 °C 0.15 °C 0.16 °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	0.22 °C 0.15 °C 0.15 °C 0.18 °C 0.25 °C	
Type N	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1300) °C	0.26 °C 0.18 °C 0.17 °C 0.17 °C 0.2 °C	
Type R	(0 to 250) °C (250 to 400) °C (400 to 1000) °C (1000 to 1767) °C	0.36 °C 0.25 °C 0.24 °C 0.26 °C	
Type S	(0 to 250) °C (250 to 1000) °C (1000 to 1400) °C (1400 to 1767) °C	0.32 °C 0.26 °C 0.26 °C 0.3 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.39 °C 0.18 °C 0.15 °C 0.14 °C	
Type U	(-200 to 0) °C (0 to 600) °C	0.56 °C 0.22 °C	

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AC Voltage – Generate ^{3,7}	10 mV, 10 Hz to 20 kHz 10 mV, (20 to 50) kHz 10 mV, (50 to 100) kHz 10 mV, (100 to 500) kHz 100 mV, 10 Hz to 20 kHz 100 mV, (20 to 50) kHz 100 mV, (50 to 100) kHz 100 mV, (100 to 500) kHz 1 V, 10 Hz to 20 kHz 1 V, (20 to 50) kHz 1 V, (50 to 100) kHz 1 V, (100 to 500) kHz 10 V, 10 Hz to 20 kHz 10 V, (20 to 50) kHz 10 V, (50 to 100) kHz 10 V, (100 to 500) kHz 100 V, 10 Hz to 20 kHz 100 V, (20 to 50) kHz 100 V, (50 to 100) kHz 100 V, (100 to 300) kHz 300 V, 10 Hz to 20 kHz 300 V, (20 to 50) kHz 300 V, (50 to 100) kHz 1000 V, 10 Hz to 10 kHz	1700 $\mu\text{V/V} + 6 \mu\text{V}$ 1900 $\mu\text{V/V} + 6 \mu\text{V}$ 2200 $\mu\text{V/V} + 15 \mu\text{V}$ 0.9 % + 30 μV 310 $\mu\text{V/V} + 6 \mu\text{V}$ 400 $\mu\text{V/V} + 8 \mu\text{V}$ 800 $\mu\text{V/V} + 20 \mu\text{V}$ 0.2 % + 30 μV 290 $\mu\text{V/V} + 0.06 \mu\text{V}$ 240 $\mu\text{V/V} + 0.014 \mu\text{V}$ 540 $\mu\text{V/V} + 0.04 \mu\text{V}$ 0.2 % + 0.08 μV 260 $\mu\text{V/V} + 0.35 \mu\text{V}$ 290 $\mu\text{V/V} + 0.05 \mu\text{V}$ 7600 $\mu\text{V/V} + 0.13 \mu\text{V}$ 0.26 % + 0.6 μV 280 $\mu\text{V/V} + 3.5 \mu\text{V}$ 300 $\mu\text{V/V} + 0.5 \mu\text{V}$ 620 $\mu\text{V/V} + 1.3 \mu\text{V}$ 0.17 % + 20 μV 280 $\mu\text{V/V} + 8 \mu\text{V}$ 250 $\mu\text{V/V} + 8 \mu\text{V}$ 0.12 % + 13 μV 110 $\mu\text{V/V} + 80 \text{ mV}$	Direct Method Fluke 5560A
Electrical Simulation of RTDs - Source & Measure ⁷			Direct Method Fluke 5560A
Pt 385, 100 Ω	(-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	0.031 °C 0.031 °C 0.039 °C 0.055 °C 0.063 °C 0.07 °C 0.14 °C	
Pt 3926, 100 Ω	(-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C	0.031 °C 0.031 °C 0.039 °C 0.055 °C	



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Electrical Simulation of RTDs - Source & Measure ⁷ (Continued)	(300 to 400) °C (400 to 630) °C	0.063 °C 0.071 °C	Direct Method Fluke 5560A
Pt 3916, 100 Ω	(-200 to -190) °C	0.15 °C	
	(-190 to -80) °C	0.023 °C	
	(-80 to 0) °C	0.031 °C	
	(0 to 100) °C	0.039 °C	
	(100 to 260) °C	0.039 °C	
	(260 to 300) °C	0.047 °C	
	(300 to 400) °C	0.055 °C	
	(400 to 600) °C	0.063 °C	
	(600 to 630) °C	0.14 °C	
Pt 385, 200 Ω	(-200 to -80) °C	0.024 °C	
	(-80 to 0) °C	0.024 °C	
	(0 to 100) °C	0.024 °C	
	(100 to 260) °C	0.033 °C	
	(260 to 300) °C	0.071 °C	
	(300 to 400) °C	0.079 °C	
	(400 to 600) °C	0.087 °C	
	(600 to 630) °C	0.095 °C	
Pt 385, 500 Ω	(-200 to -80) °C	0.024 °C	
	(-80 to 0) °C	0.032 °C	
	(0 to 100) °C	0.035 °C	
	(100 to 260) °C	0.045 °C	
	(260 to 300) °C	0.053 °C	
	(300 to 400) °C	0.056 °C	
	(400 to 600) °C	0.066 °C	
	(600 to 630) °C	0.08 °C	
Pt 385, 1000 Ω	(-200 to -80) °C	0.024 °C	
	(-80 to 0) °C	0.032 °C	
	(0 to 100) °C	0.035 °C	
	(100 to 260) °C	0.045 °C	
	(260 to 300) °C	0.053 °C	
	(300 to 400) °C	0.056 °C	
	(400 to 600) °C	0.066 °C	
	(600 to 630) °C	0.08 °C	
PtNi 385, 120 Ω (Ni120)	(-80 to 0) °C	0.024 °C	
	(0 to 100) °C	0.032 °C	
	(100 to 260) °C	0.035 °C	



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AC Voltage – Measure ^{4,7}	10 mV, 10Hz to 2 kHz 10 mV, (2 to 10) kHz 10 mV, (10 to 30) kHz 10 mV, (30 to 100) kHz 10 mV, (100 to 300) kHz 10 mV, 300 kHz to 1 MHz 100 mV, 01 Hz to 2 kHz 100 mV, (2 to 10) kHz 100 mV, (10 to 30) kHz 100 mV, (30 to 100) kHz 100 mV, (100 to 300) kHz 100 mV, 300 kHz to 1 MHz 1 V, 10 Hz to 2 kHz 1 V, (2 to 10) kHz 1 V, (10 to 30) kHz 1 V, (30 to 100) kHz 1 V, (100 to 300) kHz 1 V, 300 kHz to 1 MHz 10 V, 10 Hz to 2 kHz 10 V, (2 to 10) kHz 10 V, (10 to 30) kHz 10 V, (30 to 100) kHz 10 V, (100 to 300) kHz 100 V, (2 to 10) kHz 100 V, (10 to 30) kHz 100 V, (30 to 100) kHz 100 V, (100 to 300) kHz 1050 V, (2 to 10) kHz 1050 V, (10 to 30) kHz	350 μ V/V + 1.1 μ V 410 μ V/V + 1.1 μ V 420 μ V/V + 1.1 μ V 0.3 % + 1.1 μ V 0.96 % + 4 μ V 2.1 % + 4 μ V 110 μ V/V + 0.5 μ V 140 μ V/V + 0.5 μ V 240 μ V/V + 1 μ V 0.054 % + 5 μ V 0.22 % + 30 μ V 1.1 % + 100 μ V 81 μ V/V + 5 μ V 130 μ V/V + 5 μ V 230 μ V/V + 10 μ V 0.054 % + 50 μ V 0.22 % + 300 μ V 1 % + 1 mV 81 μ V/V + 50 μ V 130 μ V/V + 50 μ V 230 μ V/V + 100 μ V 0.054 % + 500 μ V 0.22 % + 3 mV 120 μ V/V + 500 μ V 250 μ V/V + 1 mV 0.061 % + 5 mV 0.37 % + 50 mV 140 μ V/V + 25 mV 290 μ V/V + 25 mV	Direct Method Fluke 8588A
Capacitance – Generate ^{3,7,8}	1.2 nF 12 nF 120 nF 1.2 μ F 12 μ F 120 μ F 1.2 mF 12 mF 120 mF	0.11 % + 0.002 nF 0.1 % + 0.005 nF 0.11 % + 0.03 nF 0.12 % + 0.0003 μ F 0.12 % + 0.003 μ F 0.14 % + 0.025 μ F 0.21 % + 0.00025 mF 0.21 % + 0.003 mF 0.4 % + 0.03 mF	Direct Method Fluke 5560A



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AC Current – Generate ³	100 µA, (3 to 45) Hz	0.79 % + 0.2 µA	Direct Method Fluke 5560A
	100 µA, 45 Hz to 1 kHz	0.03 % + 0.2 µA	
	100 µA, (1 to 5) kHz	0.03 % + 0.2 µA	
	100 µA, (5 to 10) kHz	0.5 % + 0.2 µA	
	100 µA, (10 to 30) kHz	1.2 % + 0.2 µA	
	1 mA, (3 to 45) Hz	1.1 % + 0.0004 mA	
	1 mA, 45 Hz to 1 kHz	0.03 % + 0.0004 mA	
	1 mA, (1 to 5) kHz	0.031 % + 0.0004 mA	
	1 mA, (5 to 10) kHz	0.51 % + 0.0004 mA	
	1 mA, (10 to 30) kHz	1.2 % + 0.0004 mA	
	10 mA, (3 to 45) Hz	1.3 % + 0.003 mA	
	10 mA, 45 Hz to 1 kHz	0.03 % + 0.003 mA	
	10 mA, (1 to 5) kHz	0.03 % + 0.003 mA	
	10 mA, (5 to 10) kHz	0.5 % + 0.003 mA	
	10 mA, (10 to 30) kHz	1.2 % + 0.003 mA	
	100 mA, (3 to 45) Hz	0.28 % + 0.03 mA	
	100 mA, 45 Hz to 1 kHz	0.03 % + 0.03 mA	
	100 mA, (1 to 5) kHz	0.03 % + 0.03 mA	
	100 mA, (5 to 10) kHz	0.5 % + 0.03 mA	
	100 mA, (10 to 30) kHz	1.2 % + 0.03 mA	
	1 A, (3 to 45) Hz	0.97 % + 0.0003 A	Direct Method Fluke 552XA
	1 A, 45 Hz to 1 kHz	0.03 % + 0.0003 A	
	1 A, (1 to 5) kHz	0.03 % + 0.0003 A	
	1 A, (5 to 10) kHz	0.5 % + 0.0003 A	
	1 A, (10 to 30) kHz	1.2 % + 0.0003 A	
	3.1 A, (3 to 45) Hz	0.71 % + 0.003 A	
	3.1 A, 45 Hz to 1 kHz	0.1 % + 0.003 A	
	3.1 A, (1 to 5) kHz	0.26 % + 0.003 A	
	3.1 A, (5 to 10) kHz	0.52 % + 0.003 A	
	12 A, (3 to 45) Hz	0.2 % + 0.003 A	
	12 A, 45 Hz to 1 kHz	0.15 % + 0.003 A	
	12 A, (1 to 5) kHz	0.3 % + 0.003 A	
	12 A, (5 to 10) kHz	0.51 % + 0.003 A	
	30 A, (3 to 45) Hz	0.3 % + 0.005 A	
	30 A, 45 Hz to 1 kHz	0.3 % + 0.005 A	
	30 A, (1 to 5) kHz	0.52 % + 0.005 A	
	20 A to 149.999 A (45 Hz to 65 Hz)	0.34 % + 30 mA	
	(65 Hz to 440 Hz)	0.94 % + 6.7 mA	



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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2,6} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
AC Current – Generate ³ (continued)	150 A to 1025 A (45 Hz to 65 Hz) (65 Hz to 440 Hz)	0.34 % + 0.11 A 1.2 % + 0.12 A	Fluke 552XA, Fluke 5500A Coil
AC Current – Measure ⁴	0.1 µA to 199.99 µA (1 Hz to 10 Hz) (0.01 kHz to 10 kHz) (10 kHz to 30 kHz) 0.2 mA to 1.9999 mA (1 Hz to 10 Hz) (0.01 kHz to 10 kHz) (10 kHz to 30 kHz) 2 mA to 19.999 mA (1 Hz to 10 Hz) (0.01 kHz to 10 kHz) (10 kHz to 30 kHz) 20 mA to 199.99 mA (1 Hz to 10 Hz) (0.01 kHz to 10 kHz) (10 kHz to 30 kHz) 0.2 A to 1.9999 A (0.010 kHz to 2 kHz) (2 kHz to 10 kHz) 2 A to 19.999 A (0.010 kHz to 2 kHz) (2 kHz to 10 kHz)	0.049 % + 58 pA 0.049 % + 58 pA 0.066 % + 58 pA 0.031 % + 0.58 nA 0.030 % + 0.58 nA 0.066 % + 0.58 nA 0.032 % + 5.8 nA 0.030 % + 5.8 nA 0.066 % + 5.8 nA 0.032 % + 58 nA 0.027 % + 58 nA 0.061 % + 58 nA 0.061 % + 0.58 µA 0.072 % + 0.58 µA 0.081 % + 5.8 µA 0.25 % + 5.8 µA	Direct Method Fluke 8508A
Oscilloscopes			Direct Method Fluke 5560A/SC1100
DC Voltage– 50 Ω	(1 to 25) mV (25 to 110) mV (0.11 to 2.2) V (2.2 to 6.6) V	0.24 % + 40 µV 0.25 % + 40 µV 0.25 % + 40 µV 0.26 % + 40 µV	
1 MΩ	(1 to 25) mV (25 to 110) mV (0.11 to 2.2) V (2.2 to 11) V (11 to 130) V	0.052 % + 40 µV 0.051 % + 40 µV 0.057 % + 40 µV 0.051 % + 40 µV 0.052 % + 40 µV	
AC Voltage			



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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2,6} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
50 Ω 10 Hz to 10 kHz Oscilloscopes (continued)	(1 to 25) mV (25 to 110) mV (0.11 to 2.2) V (2.2 to 6.6) V	0.25 % + 40 μVpp 0.25 % + 40 μVpp 0.25 % + 40 μVpp 0.26 % + 40 μVpp	Direct Method Fluke 5560A/SC1100
1 MΩ 10Hz to 10 kHz	(1 to 25) mV (25 to 110) mV (0.11 to 2.2) V (2.2 to 11) V (11 to 130) V	0.1 % + 40 μVpp 0.1 % + 40 μVpp 0.1 % + 40 μVpp 0.1 % + 40 μVpp 0.1 % + 40 μVpp	
Leveled Sine Wave			
Amplitude (50 kHz Reference)	50 kHz to 100 MHz (100 to 300) MHz	1.7 % + 100 μV 3 % + 100 μV	
Up to 5.5 Vp-p	(300 to 600) MHz (600 to 1100) MHz	2.8 % + 100 μV 3.2 % + 100 μV	
Up to 3.4 Vp-p	(2 to 5) ns 10 ns	2000 μs/s 930 μs/s	
Time Marker	(20 to 50) ns 100 ns to 20 ms 50 ms to 5 s	160 μs/s 370 μs/s 5200 μs/s	
Time & Frequency			
Frequency – Generate ^{3,7}	10 MHz (Fixed Reference)	7.4 pHz/Hz	Direct Method Fluke 910R
	100 μHz to 20 MHz 20 MHz to 26.5 GHz 26.5 GHz to 40 GHz	11 pHz/Hz + 0.58 mHz 9.9 pHz/Hz + 0.58 mHz 8.8 pHz/Hz + 0.58 mHz	HP 3325B/Fluke 910R Anritsu MG6394C/Fluke 910R
Frequency – Measure ^{4,7}	1 mHz to 350 MHz 0.35 GHz to 6 GHz 6 GHz to 40 GHz	7.2 pHz/Hz + 58 nHz 7.2 pHz/Hz + 0.58 μHz 11 pHz/Hz + 0.58 Hz	Direct Comparison Keysight 53230A/Fluke 910R
Speed Indicators (Photo) ⁷	1 rpm to 200000 rpm	11 μrpm/rpm + 0.58 rpm	Direct Method HP 3325B/Fluke 910R
RF/Microwave			
Absolute Power - Measure ⁴	26 dBm to 30 dBm (100 kHz to 4.2 GHz) (4.2 GHz to 18 GHz)	0.12 dBm 0.18 dBm	Direct measurement R&S FSMR26, NRP-Z37



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Absolute Power - Measure ⁴ (continued)	(18 GHz to 26.5 GHz) -24 dBm to 26 dBm (100 kHz to 4.2 GHz) (4.2 GHz to 8 GHz) (8 GHz to 12.4 GHz) (12.4 GHz to 18 GHz) (18 GHz to 26.5 GHz)	0.22 dBm 0.10 dBm 0.14 dBm 0.15 dBm 0.17 dBm 0.21 dBm	
Relative Power/Tuned RF Level - Measure ⁴	30 dB to -140 dB (100 kHz to 22 GHz) (22 GHz to 26.5 GHz)	0.014 dB + 0.0058 dB/10 dB 0.022 dB + 0.0058 dB/10 dB	Direct measurement R&S FSMR26, NRP-Z37
Spectral Analysis – Power Measure ⁴	(30 to -120) dBm 20 Hz to 10 MHz 10 MHz to 3.6 GHz (3.6 to 8.0) GHz (8.0 to 22) GHz (22 to 26.5) GHz	0.55 dBm 0.38 dBm 0.93 dBm 1.2 dBm 1.5 dBm	Direct Method R&S FSMR26, NRP-Z37
Total Harmonic Distortion – Measure ⁴	0.001 % to 100 % 10 Hz to 100 kHz	0.85 %	Direct Method R&S FSMR26, NRP-Z37
Amplitude Modulation – Measure ⁴ Carrier Frequency 100 kHz to 10 MHz 10 MHz to 26.5 GHz	5 % to 99 % (10 Hz to 10 kHz) 5 % to 99 % (90 Hz to 150 Hz) (10 Hz to 50 kHz) (50 kHz to 100 kHz)	1.5 % 0.4 % 1.0 % 1.5 %	Direct measurement R&S FSMR26, NRP-Z37
Frequency Modulation - Measure ⁴ Carrier Frequency 100 kHz to 10 MHz 10 MHz to 26.5 GHz	10 Hz to 10 kHz 10 Hz to 100 kHz 100 kHz to 200 kHz	1.0 % 1.0 % 3.0 %	

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Phase Modulation - Measure ⁴ Carrier Frequency 100 kHz to 10 MHz	1 rad to 1000 rad (10 Hz to 10 kHz)	1.0 %	
10 MHz to 26.5 GHz	1 rad to 1000 rad (10 Hz to 5 MHz)	1.0 %	
Chemical/Gas			
Gas Detection Equipment ⁷ – O ₂	12 % 15 % 18 % 20.9 %	0.86 % 0.76 % 0.77 % 0.69 %	Direct comparison to primary standard gas.
Gas Detection Equipment ⁷ –CO	20 ppm 50 ppm 60 ppm 100 ppm	0.060 % 0.048 % 0.040 % 0.026 %	
Gas Detection Equipment ⁷ –H ₂ S	20 ppm 25 ppm	0.12 % 0.093 %	
Gas Detection Equipment ⁷ – CH ₄	50 % LEL 58 % LEL	1.7 % 1.8 %	
Gas Detection Equipment ⁷ – C ₄ H ₈	100 ppm	2.6 %	

¹The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

²When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

³Capability is suitable for the calibration of measuring devices in the stated ranges.

⁴Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.

⁵Metric equivalencies for these ranges and associated CMCs are also available.

⁶In the statement of CMC, L is the length of measurand in inches; D is the diameter in inches/meters; H is the height in inches/meters, and t is the time in seconds.

⁷Also available as site calibration. Note that actual measurement uncertainties achievable at a customer's site can normally be expected to be larger than the uncertainties listed on this Scope of Accreditation.



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⁸The actual frequency applied by the calibrator cannot be selected and may be dependent on the measurement device under calibration. Approximate frequency ranges for a given capacitance or capacitance range may be found in the Fluke 552xA's published specifications.

Notes:

gal = U.S. gallons

TPI = threads per inch

FS = full scale (unless otherwise indicated, the upper value of the range is assumed to be FS)

LEL = Lower explosive limit

