



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994**

Davis Calibration

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CALIBRATION

Valid to: January 31, 2013

Certificate Number: AC-1257

I. Electromagnetic - DC/Low Frequency

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
DC Voltage - Source	Up to 220 mV 220 mV to 2.2 V (2.2 to 11) V (11 to 22) V (22 to 220) V 220 V to 1.1 kV	8 µV/V + 600 nV 7 µV/V + 1 µV 7 µV/V + 3.5 µV 7 µV/V + 6.5 µV 8 µV/V + 80 µV 9 µV/V + 500 µV	Fluke 5700A	OEM and GIDEP Sourced Calibration Procedures
DC Voltage - Measure	(10 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV	11 µV/V + 300 nV 10 µV/V + 300 nV 10 µV/V + 500 nV 12 µV/V + 30 µV 22 µV/V + 100 µV	HP 3458A	
DC Current - Source	Up to 220 µA 220 µA to 2.2 mA (2.2 to 22) mA (22 to 100) mA (100 to 220) mA 220 mA to 1 A (1 to 2.2) A (2.2 to 11) A	50 µA/A + 8 nA 50 µA/A + 8 nA 50 µA/A + 80 nA 60 µA/A + 800 nA 60 µA/A + 800 nA + [(200)(I ² ppm)] 80 µA/A + 25 µA 80 µA/A + 25 µA + [(10)(I ² ppm)] 600 µA/A + 330 µA	Fluke 5700A Fluke 5500A	



PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
DC Current - Measure	100 μ A to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1 A	25 μ A/A + 5 nA 25 μ A/A + 50 nA 40 μ A/A + 500 nA 115 μ A/A + 10 μ A	HP 3458A	OEM and GIDEP Sourced Calibration Procedures
Resistance - Source	1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	95 $\mu\Omega$ 181 $\mu\Omega$ 280 $\mu\Omega$ 513 $\mu\Omega$ 1.7 m Ω 3.23 m Ω 13 m Ω 24.7 m Ω 120 m Ω 228 m Ω 1.4 Ω 2.66 Ω 20 Ω 40 Ω 400 Ω 893 Ω 11 k Ω	Fluke 5700A	
Resistance - Measure	Up to 10 Ω (10 to 100) Ω 100 Ω to 1 k Ω (1 to 10) k Ω (10 to 100) k Ω 100 k Ω to 1 M Ω (1 to 10) M Ω (10 to 100) M Ω 100 M Ω to 1 G Ω	18 $\mu\Omega/\Omega$ + 50 $\mu\Omega$ 15 $\mu\Omega/\Omega$ + 500 $\mu\Omega$ 13 $\mu\Omega/\Omega$ + 500 $\mu\Omega$ 13 $\mu\Omega/\Omega$ + 5 m Ω 13 $\mu\Omega/\Omega$ + 50 m Ω 18 $\mu\Omega/\Omega$ + 2 Ω 53 $\mu\Omega/\Omega$ + 100 Ω 503 $\mu\Omega/\Omega$ + 1 k Ω 5 m Ω/Ω + 10 k Ω	HP 3458A	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source	<p>Up to 2.2 mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(2.2 to 22) mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(22 to 220) mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>220 mV to 2.2 V</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p>	<p>550 μV/V + 4.5 μV 210 μV/V + 4.5 μV 105 μV/V + 4.5 μV 370 μV/V + 4.5 μV 850 μV/V + 7 μV 1.1 mV/V + 13 μV 1.7 mV/V + 25 μV 3.4 mV/V + 25 μV</p> <p>550 μV/V + 5 μV 210 μV/V + 5 μV 105 μV/V + 5 μV 370 μV/V + 5 μV 850 μV/V + 7 μV 1.1 mV/V + 12 μV 1.7 mV/V + 25 μV 3.4 mV/V + 25 μV</p> <p>550 μV/V + 13 μV 210 μV/V + 8 μV 105 μV/V + 8 μV 320 μV/V + 8 μV 850 μV/V + 25 μV 1.1 mV/V + 25 μV 1.7 mV/V + 35 μV 3.4 mV/V + 80 μV</p> <p>500 μV/V + 80 μV 160 μV/V + 25 μV 75 μV/V + 6 μV 120 μV/V + 16 μV 250 μV/V + 70 μV 430 μV/V + 130 μV 1.05 mV/V + 350 μV 2.2 mV/V + 850 μV</p>	Fluke 5700A	OEM and GIDEP Sourced Calibration Procedures

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source (cont.)	<p>(2.2 to 22) V (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(22 to 220) V (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(220 to 250) V (15 to 50) Hz 50 Hz to 1kHz</p> <p>250 V to 1.1 kV 50 Hz to 1kHz</p>	<p>500 μV/V + 800 μV 160 μV/V + 250 μV 75 μV/V + 60 μV 120 μV/V + 160 μV 250 μV/V + 350 μV 500 μV/V + 1.5 mV 1.25 mV/V + 4.3 mV 2.7 mV/V + 8.5 mV</p> <p>500 μV/V + 8 mV 160 μV/V + 2.5 mV 80 μV/V + 800 μV 220 μV/V + 3.5 mV 500 μV/V + 8 mV 1.5 mV/V + 90 mV 4.7 mV/V + 90 mV 115 mV/V + 190 mV</p> <p>400 μV/V + 16 mV 80 μV/V + 3.5 mV</p> <p>80 μV/V + 3.5 mV</p>	Fluke 5700A	OEM and GIDEP Sourced Calibration Procedures
AC Voltage - Measure	<p>(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 300 kHz to 1MHz (1 to 4) MHz (4 to 8) MHz</p>	<p>302 μV/V + 3 μV 202 μV/V + 1.1 μV 302 μV/V + 1.1 μV 1 mV/V + 1.1 μV 5 mV/V + 1.1 μV 40 mV/V + 2 μV 12 mV/V + 5 μV 70 mV/V + 7 μV 200 mV/V + 8 μV</p>	HP 3458A	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Measure (cont.)	<p>(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 (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz</p> <p>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 (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz</p> <p>(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 (2 to 4) MHz (4 to 8) MHz (8 to 10) MHz</p>	<p>72 μV/V + 4 μV 72 μV/V + 2 μV 142 μV/V + 2 μV 302 μV/V + 2 μV 802 μV/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</p> <p>72 μV/V + 40 μV 72 μV/V + 20 μV 142 μV/V + 20 μV 302 μV/V + 20 μV 802 μV/V + 20 μV 3 mV/V + 100 μV 10 mV/V + 100 μV 15 mV/V + 100 μV 40 mV/V + 700 μV 40 mV/V + 800 μV 150 mV/V + 1 mV</p> <p>72 μV/V + 400 μV 72 μV/V + 200 μV 142 μV/V + 200 μV 302 μV/V + 200 μV 802 μV/V + 200 μV 3 mV/V + 1 mV 10 mV/V + 1 mV 15 mV/V + 1 mV 40 mV/V + 7 mV 40 mV/V + 8 mV 150 mV/V + 10 mV</p>	HP 3458A	OEM and GIDEP Sourced Calibration Procedures

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Measure (cont.)	(10 to 100) V (1 to 40) Hz 40Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (100 to 1 000) V (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	202 μ V/V + 4 mV 202 μ V/V + 2 mV 202 μ V/V + 2 mV 352 μ V/V + 2 mV 1.2 mV/V + 2 mV 4 mV/V + 10 mV 15 mV/V + 10 mV 402 μ V/V + 40 mV 402 μ V/V + 20 mV 602 μ V/V + 20 mV 1.2 mV/V + 20 mV 3 mV/V + 20 mV	HP 3458A	OEM and GIDEP Sourced Calibration Procedures
AC Current - Source	(9 to 220) μA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 μA to 2.2 mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (2.2 to 22) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	700 μ A/A + 25 nA 350 μ A/A + 20 nA 140 μ A/A + 16 nA 600 μ A/A + 40 nA 1.6 mA/A + 80 nA 700 μ A/A + 40 nA 350 μ A/A + 35 nA 140 μ A/A + 35 nA 600 μ A/A + 400 nA 1.6 mA/A + 800 nA 700 μ A/A + 400 nA 350 μ A/A + 350 nA 140 μ A/A + 350 nA 600 μ A/A + 4 μ A 1.6 mA/A + 8 μ A	Fluke 5700A	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Current - Source (cont.)	(22 to 220) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 mA to 2.2 A 20 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (2.2 to 11) A (45 to 65) Hz (65 to 500) Hz 500 Hz to 1 kHz	700 μ A/A + 4 μ A 350 μ A/A + 3.5 μ A 140 μ A/A + 3.5 μ A 600 μ A/A + 40 μ A 1.6 mA/A + 80 μ A 650 μ A/A + 35 μ A 750 μ A/A + 80 μ A 8.5 mA/A + 160 μ A 600 μ A/A + 2 mA 1 mA/A + 2 mA 3.3 mA/A + 2 mA	Fluke 5500A	
AC Current - Measure	(5 to 100) μA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz 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 (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 mA/A + 30 nA 1.5 mA/A + 30 nA 600 μ A/A + 30 nA 600 μ A/A + 30 nA 4 mA/A + 200 nA 1.5 mA/A + 200 nA 600 μ A/A + 200 nA 300 μ A/A + 200 nA 600 μ A/A + 200 nA 4 mA/A + 400 nA 5.5 mA/A + 1.5 μ A 4 mA/A + 2 μ A 1.5 mA/A + 2 μ A 600 μ A/A + 2 μ A 300 μ A/A + 2 μ A 600 μ A/A + 2 μ A 4 mA/A + 4 μ A 5.5 mA/A + 15 μ A	HP 3458A	OEM and GIDEP Sourced Calibration Procedures

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Current - Measure (cont.)	(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 100 mA to 1 A (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	4 mA/A + 20 μ A 1.5 mA/A + 20 μ A 600 μ A/A + 20 μ A 600 μ A/A + 20 μ A 600 μ A/A + 20 μ A 4 mA/A + 40 μ A 5.5 mA/A + 150 μ A 4 mA/A + 200 μ A 1.6 mA/A + 200 μ A 800 μ A/A + 200 μ A 1 mA/A + 200 μ A 3 mA/A + 200 μ A 10 mA/A + 400 μ A	HP 3458A	
Electrical Simulation of Thermocouple Indicators				OEM and GIDEP Sourced Calibration Procedures
Type B	(600 to 800) $^{\circ}$ C	0.44 $^{\circ}$ C		
	(800 to 1 000) $^{\circ}$ C	0.34 $^{\circ}$ C		
	(1 000 to 1 550) $^{\circ}$ C	0.3 $^{\circ}$ C		
Type C	(1 550 to 1 820) $^{\circ}$ C	0.33 $^{\circ}$ C		
	(0 to 150) $^{\circ}$ C	0.3 $^{\circ}$ C		
	(150 to 650) $^{\circ}$ C	0.26 $^{\circ}$ C		
	(650 to 1 000) $^{\circ}$ C	0.31 $^{\circ}$ C		
	(1 000 to 1 800) $^{\circ}$ C	0.5 $^{\circ}$ C		
Type E	(1 800 to 2 316) $^{\circ}$ C	0.84 $^{\circ}$ C	Fluke 5500A	
	(-250 to -100) $^{\circ}$ C	0.5 $^{\circ}$ C		
	(-100 to -25) $^{\circ}$ C	0.16 $^{\circ}$ C		
	(-25 to 350) $^{\circ}$ C	0.14 $^{\circ}$ C		
	(350 to 650) $^{\circ}$ C	0.16 $^{\circ}$ C		
	(650 to 1 000) $^{\circ}$ C	0.21 $^{\circ}$ C		
Type J	(-210 to -100) $^{\circ}$ C	0.27 $^{\circ}$ C		
	(-100 to -30) $^{\circ}$ C	0.16 $^{\circ}$ C		
	(-30 to 150) $^{\circ}$ C	0.14 $^{\circ}$ C		
	(150 to 760) $^{\circ}$ C	0.17 $^{\circ}$ C		
	(760 to 1 200) $^{\circ}$ C	0.23 $^{\circ}$ C		

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Electrical Simulation of Thermocouple Indicators (cont.)				
Type K	(-200 to -100) °C	0.33 °C		
	(-100 to -25) °C	0.18 °C		
	(-25 to 120) °C	0.16 °C		
	(120 to 1 000) °C	0.26 °C		
	(1 000 to 1 372) °C	0.4 °C		
Type L	(-200 to -100) °C	0.37 °C		
	(-100 to 800) °C	0.26 °C		
	(800 to 900) °C	0.17 °C		
Type N	(-200 to -100) °C	0.4 °C		
	(-100 to -25) °C	0.22 °C		
	(-25 to 120) °C	0.19 °C		
	(120 to 410) °C	0.18 °C		
	(410 to 1 300) °C	0.27 °C		
Type R	(0 to 250) °C	0.57 °C		
	(250 to 400) °C	0.35 °C		
	(400 to 1 000) °C	0.33 °C	Fluke 5500A	OEM and GIDEP Sourced Calibration Procedures
	(1 000 to 1 767) °C	0.4 °C		
Type S	(0 to 250) °C	0.47 °C		
	(250 to 1 000) °C	0.36 °C		
	(1 000 to 1 400) °C	0.37 °C		
	(1 400 to 1 767) °C	0.46 °C		
Type T	(-250 to -150) °C	0.63 °C		
	(-150 to 0) °C	0.24 °C		
	(0 to 120) °C	0.16 °C		
	(120 to 400) °C	0.14 °C		
Type U	(-200 to 0) °C	0.56 °C		
	(0 to 600) °C	0.27 °C		

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of RTDs				
Pt 395 (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	0.05 °C 0.05 °C 0.07 °C 0.09 °C 0.1 °C 0.12 °C 0.23 °C		
Pt 3926 (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	0.05 °C 0.05 °C 0.07 °C 0.09 °C 0.1 °C 0.12 °C		
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	0.25 °C 0.04 °C 0.05 °C 0.06 °C 0.07 °C 0.08 °C 0.09 °C 0.1 °C 0.23 °C	Fluke 5500A	OEM and GIDEP Sourced Calibration Procedures
Pt 385 (200 Ω)	(-200 to -80) °C (-80 to 0) (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	0.04 °C 0.04 °C 0.04 °C 0.05 °C 0.12 °C 0.13 °C 0.14 °C 0.16 °C		



PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of RTDs (cont.) Pt 385 (500 Ω)	(-200 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	0.04 °C 0.05 °C 0.05 °C 0.06 °C 0.08 °C 0.08 °C 0.09 °C 0.11 °C		
Pt 385 (1 000 Ω)	(-200 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	0.03 °C 0.03 °C 0.04 °C 0.05 °C 0.06 °C 0.07 °C 0.07 °C 0.23 °C		
PtNi 385 (120 Ω) [Ni120]	(-80 to 100) °C (100 to 260) °C	0.08 °C 0.14 °C		
Capacitance - Source 50 Hz to 1 kHz 50 Hz to 1 kHz 50 Hz to 1 kHz 50 Hz to 1 kHz 50 Hz to 1 kHz (50 to 400) Hz (50 to 400) Hz (50 to 200) Hz (50 to 100) Hz (50 to 100) Hz	330 pF to 11 nF (11 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	5 mF/F + 10 pF 2.5 mF/F + 100 pF 2.5 mF/F + 300 pF 2.5 mF/F + 1 nF 3.5 mF/F + 3 nF 3.5 mF/F + 10 nF 4 mF/F + 30 nF 5 mF/F + 100 nF 7 mF/F + 300 nF 10 mF/F + 300 nF	Fluke 5500A	OEM and GIDEP Sourced Calibration Procedures

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
DC Power - Source 33 mV to 1.02 kV	(3.3 to 9) mA (9 to 33) mA (33 to 90) mA (90 to 330) mA (330 to 900) mA 900 mA to 2.2 A (2.2 to 4.5) A (4.5 to 11) A	0.04 % of Watts Output 0.03 % of Watts Output 0.04 % of Watts Output 0.03 % of Watts Output 0.08 % of Watts Output 0.06 % of Watts Output 0.12 % of Watts Output 0.9 % of Watts Output		
AC Power - Source (45 to 65) Hz , PF=1 (33 to 330) mV 330 mV to 1 kV	(3.3 to 9) mA (9 to 33) mA (33 to 90) mA (90 to 330) mA (330 to 900) mA 900 mA to 2.2 A (2.2 to 4.5) A (4.5 to 11) A (3.3 to 9) mA (9 to 33) mA (33 to 90) mA (90 to 330) mA (330 to 900) mA 900 mA to 2.2 A (2.2 to 4.5) A (4.5 to 11) A	0.4 % of Watts Output 0.25 % of Watts Output 0.35 % of Watts Output 0.25 % of Watts Output 0.35 % of Watts Output 0.25 % of Watts Output 0.35 % of Watts Output 0.25 % of Watts Output 0.25 % of Watts Output 0.15 % of Watts Output 0.25 % of Watts Output 0.15 % of Watts Output 0.25 % of Watts Output 0.15 % of Watts Output 0.25 % of Watts Output 0.15 % of Watts Output 0.2 % of Watts Output 0.15 % of Watts Output	Fluke 5500A	OEM and GIDEP Sourced Calibration Procedures
Oscilloscopes Amplitude - DC Signal into 50 Ω Load into 1 M Ω Load Amplitude – Square Wave into 50 Ω Load into 1 M Ω Load	0 V to \pm 2.2 V 0 V to \pm 33 V 1.8 mV to 2.2 V p-p 10 Hz to 10 kHz 1.8 mV to 105 V p-p 10 Hz to 10 kHz	2.5 mV/V + 100 μ V 2.5 mV/V + 100 μ V 2.5 mV/V + 100 μ V 2.5 mV/V + 100 μ V	Fluke 5500A-SC300	

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Leveled Sine Wave - Flatness Relative to 50 kHz Time Marker into 50 Ω Load – Source Pulsed Sawtooth Wave Sine Wave Edge Specs into 50Ω Load – Source Amplitude Frequency Wave Generator - Source Amplitude (10 Hz to 10 kHz) Square, Sine, Triangle into 1 MΩ Square, Sine, Triangle into 50 Ω Frequency	[5 mV to 5.5 V] 50 kHz to 100 MHz (100 to 300) MHz 5 sec to 100 μs (50 to 2) μs 1 μs to 20 ns (10 to 2) ns 4.5 mV to 2.75 V 1 kHz to 1 MHz 1.8 mV to 55 V p-p 1.8 mV to 2.5 V p-p 10 Hz to 10 kHz	35 mV/V + 300 μV 40 mV/V + 300 μV (25+1 000t) μs/s (25+15 000t) μs/s 25 μs/s 25 μs/s 20 mV/V + 200 μV 25 μV/V + 15 mHz 30 mV/V + 100 μV 30 mV/V + 100 μV 25 parts in 10 ⁶ + 15 mHz	Fluke 5500A-SC300	OEM and GIDEP Sourced Calibration Procedures

II. Time & Frequency

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Frequency - Source	10 MHz (0.01 to 120) Hz 120 Hz to 1.2 kHz (1.2 to 10) kHz (10 to 12) kHz (12 to 120) kHz 120 kHz to 1.2 MHz (1.2 to 2) MHz	0.06 μHz/Hz 25 μHz/Hz + 1 mHz 25 μHz/Hz + 1 mHz 25 μHz/Hz + 1 mHz 25 μHz/Hz + 15 mHz 25 μHz/Hz + 15 mHz 25 μHz/Hz + 15 mHz 25 μHz/Hz + 15 mHz	Datum 9390-6000 Fluke 5500A-SC300	OEM and GIDEP Sourced Calibration Procedures

III. Thermodynamic

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Temperature	(-80 to 150) °C (20 to 300) °C	0.032 °C 0.045 °C	Hart 5612 w/ 1502 Tweener and Baths	OEM and GIDEP Sourced Calibration Procedures
Relative Humidity	(0 to 100) %RH	1.2 %RH	Vaisala HMI 41/HMP 46 Indicator & Probe	

IV. Mechanical

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY (\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Vacuum	(1 to 30) in Hg	0.018 % of reading	Pressurements T3550/3 Deadweight Tester	OEM and GIDEP Sourced Calibration Procedures
Pressure	(5 to 40) in H ₂ O (40 to 400) in H ₂ O	0.006 in H ₂ O 0.018 % of reading	Pressurements T3550/3 Deadweight Tester	
	(2 to 10,000) psi	0.02 % of reading	Pressurements M2200-3 Deadweight Tester	
Torque Tools	5 in·lb to 1 000 ft·lb	0.32 % of reading	CDI Suretest Torque Measuring System	

Notes:

1. Calibration and Measurement Capabilities (CMC) (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of $k=2$.
2. This laboratory's capabilities include in-laboratory calibrations as well as on-site calibrations at customer-designated locations. Since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
3. The use of (t) signifies an expression of Time in seconds.
4. The CMCs listed for Electromagnetic – DC/Low Frequency and Time & Frequency do not include possible contributions to uncertainty from a "best available" unit under test.
5. This scope is part of and must be included with the Certificate of Accreditation No. AC-1257.



Vice President