

General Specifications

5520A/5500A

Warmup Time	Twice the time since last warmed up, to a maximum of 30 minutes
Settling Time	Less than 5 seconds for all functions and ranges except as noted
Standard Interfaces	IEEE-488 (GPIB), RS-232, 5725A (5500A only)
Temperature Performance	Operating: 0°C to 50°C Calibration (tcal): 15°C to 35°C Storage: -20°C to 70°C
Temperature Coefficient	5500A: Temperature coefficient for temperatures outside tcal $\pm 5^\circ\text{C}$ is 10% of the 90-day specification (or 1-year, as applicable) per $^\circ\text{C}$ 5520A: Temperature coefficient for temperatures outside tcal $\pm 5^\circ\text{C}$ is 10% of the stated specification per $^\circ\text{C}$ for temperatures in the range of 0°C to 35°C. Above 35°C, the temperature coefficient is 20% of the stated specification per $^\circ\text{C}$
Relative Humidity	Operating: <80% to 30°C, <70% to 40°C, <40% to 50°C Storage: <95%, noncondensing Note: After long periods of storage at high humidity, a drying out period (with the power on) of at least one week may be required
Altitude	Operating: 3,050m (10,000 ft) maximum Non-operating: 12,200m (40,000 ft) maximum
Safety	Designed to comply with IEC 1010-1 (1992-1); ANSI/ISA-S82.01-1994; CAN/CSA-C22.2 No. 1010.1-92
Analog Low Isolation	20V
EMC	5520A: Designed to comply with IEC 61326-1/1997 5500A: Designed to comply with FCC Rules Part 15
Line Power	Line Voltage (selectable): 100V, 120V, 220V, 240V Line Frequency: 47 to 63 Hz Line Voltage Variation: $\pm 10\%$ about line voltage setting Note: For optimal 5520A performance at full dual outputs (e.g. 1000V, 20A), choose a line voltage setting that is $\pm 7.5\%$ from nominal
Power Consumption	5520A: 600 VA 5500A: 300 VA
Dimensions	Height: 17.8 cm (7 in), standard rack increment, plus 1.5 cm (0.6 in) for feet on bottom of unit Width: 43.2 cm (17 in), standard rack width Depth: 47.3 cm (18.6 in) overall
Weight (without options)	5520A: 22 kg (49 lb) 5500A: 20 kg (44 lb)
Absolute Uncertainty Definition	5500A and 5520A uncertainty specifications include stability, temperature coefficient, linearity, line and load regulation and the traceability of the external standards used for calibration. <i>You do not need to add anything to determine the total uncertainty of your calibrator for the temperature range indicated.</i>
Specification Confidence Interval	>99%

DC Voltage Specifications

5520A

Ranges	Absolute Uncertainty, tcal ±5°C ±(ppm of output + μV)		Stability	Resolution	Maximum Burden Current ¹
	90 Days	1 Year	24 Hours, ±1°C ±(ppm of output + μV)		
0 to 329.9999 mV	15 + 1	20 + 1	3 + 1	0.1 μV	50Ω
0 to 3.299999V	9 + 2	11 + 2	2 + 1.5	1 μV	10 mA
0 to 32.99999V	10 + 20	12 + 20	2 + 15	10 μV	10 mA
30 to 329.9999V	15 + 150	18 + 150	2.5 + 100	100 μV	5 mA
100 to 1000V	15 + 1500	18 + 1500	3 + 300	1000 μV	5 mA
Auxiliary Output (dual output mode only)²					
0 to 329.999 mV	300 + 350	400 + 350	30 + 100	1 μV	5 mA
0.33 to 3.29999V	300 + 350	400 + 350	30 + 100	10 μV	5 mA
3.3 to 7V	300 + 350	400 + 350	30 + 100	100 μV	5 mA
TC Output and Measure in Linear 10 μV/°C and 1 mV/°C Modes					
0 to 329.999 mV	40 + 3	50 + 3	5 + 2	0.1 μV	10Ω

5500A

Ranges	Absolute Uncertainty, tcal ±5°C ±(ppm of output + μV)		Stability	Resolution	Maximum Burden Current ¹
	90 Days	1 Year	24 Hours, ±1°C ±(ppm of output + μV)		
0 to 329.9999 mV	50 + 3	60 + 3	5 + 1	0.1 μV	50Ω
0 to 3.299999V	40 + 5	50 + 5	4 + 3	1 μV	10 mA
0 to 32.99999V	40 + 50	50 + 50	4 + 30	10 μV	10 mA
30 to 329.9999V	45 + 500	55 + 500	4.5 + 300	100 μV	5 mA
100 to 1000V	45 + 1500	55 + 1500	4.5 + 900	1000 μV	5 mA
Auxiliary Output (dual output mode only)²					
0 to 329.999 mV	300 + 350	400 + 350	30 + 100	1 μV	5 mA
0.33 to 3.29999V	300 + 350	400 + 350	30 + 100	10 μV	5 mA
TC Output and Measure in Linear 10 μV/°C					
0 to 329.999 mV	50 + 3	60 + 3	5 + 1	0.1 μV	10Ω

¹ Remote sensing is not provided. Output resistance is <5 mΩ for outputs ≥0.33V. The AUX output has an output resistance of <1Ω. TC output has an output impedance of 10Ω ± 1Ω.

² Two channels of dc voltage output are provided.

Note: Maximum voltage output is 1020V.

DC Current Specifications

5520A

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\text{ppm of output} + \mu\text{A})$		Resolution	Compliance Voltage	Maximum Inductive Load
	90 Days	1 Year			
0 to 329.999 μA	120 + 0.02	150 + 0.02	1 nA	10V	400 μH
0 to 3.29999 mA	80 + 0.05	100 + 0.05	0.01 μA	10V	400 μH
0 to 32.9999 mA	80 + 0.25	100 + 0.25	0.1 μA	7V	400 μH
0 to 329.999 mA	80 + 2.5	100 + 2.5	1 μA	7V	400 μH
0 to 1.09999A	160 + 40	200 + 40	10 μA	6V	400 μH
1.1A to 2.99999A	300 + 40	380 + 40	10 μA	6V	400 μH
0 to 10.9999A	380 + 500	500 + 500	100 μA	4V	400 μH
11 to 20.5A ¹	800 + 750	1000 + 750	100 μA	4V	400 μH

¹ At 20°C, full 20.5A output is available continuously for 20 minutes.

5500A

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \mu\text{A})$		Resolution	Compliance Voltage	Maximum Inductive Load
	90 Days	1 Year			
0 to 3.29999 mA	0.010 + 0.05	0.013 + 0.05	0.01 μA	4.5V	1 μH
0 to 32.9999 mA	0.008 + 0.25	0.01 + 0.25	0.1 μA	4.5V	200 μH
0 to 329.999 mA	0.008 + 3.3	0.01 + 3.3	1 μA	3.0V	200 μH
0 to 2.19999A	0.023 + 44	0.03 + 44	10 μA	3.4V	200 μH
0 to 10.9999A	0.038 + 330	0.06 + 330	100 μA	2.5V	200 μH
5725A Amplifier					
0 to 11A	0.03 + 330	0.04 + 330	100 μA	4V	400 μH

Resistance Specifications

5520A

Ranges ¹	Absolute Uncertainty, tcal ±5°C ±(ppm of output + floor) ²				Resolution	Allowable Current
	ppm of output		Floor Time, Temperature Since Ω Zero			
	90 Days	1 Year	12 Hours ±1°C	7 Days ±5°C		
0 to 10.9999Ω	35	40	0.001Ω	0.01Ω	0.0001Ω	1 to 125 mA
11 to 32.9999Ω	25	30	0.0015Ω	0.015Ω	0.0001Ω	1 to 125 mA
33 to 109.9999Ω	22	28	0.0014Ω	0.015Ω	0.0001Ω	1 to 70 mA
110 to 329.9999Ω	22	28	0.002Ω	0.02Ω	0.0001Ω	1 to 40 mA
330Ω to 1.099999 kΩ	22	28	0.002Ω	0.02Ω	0.001Ω	250 μA to 18 mA
1.1 to 3.299999 kΩ	22	28	0.02Ω	0.2Ω	0.001Ω	250 μA to 5 mA
3.3 to 10.99999 kΩ	22	28	0.02Ω	0.1Ω	0.01Ω	25 μA to 1.8 mA
11 to 32.99999 kΩ	22	28	0.2Ω	1Ω	0.01Ω	25 μA to 0.5 mA
33 to 109.9999 kΩ	22	28	0.2Ω	1Ω	0.1Ω	2.5 μA to 0.18 mA
110 to 329.9999 kΩ	25	32	2Ω	10Ω	0.1Ω	2.5 μA to 0.05 mA
330 kΩ to 1.099999 MΩ	25	32	2Ω	10Ω	1Ω	250 nA to 0.018 mA
1.1 to 3.299999 MΩ	40	60	30Ω	150Ω	1Ω	250 nA to 5 μA
3.3 to 10.99999 MΩ	110	130	50Ω	250Ω	10Ω	25 nA to 1.8 μA
11 to 32.99999 MΩ	200	250	2500Ω	2500Ω	10Ω	25 nA to 500 nA
33 to 109.9999 MΩ	400	500	3000Ω	3000Ω	100Ω	2.5 nA to 180 nA
110 to 329.999 MΩ	2500	3000	100000Ω	100000Ω	1000Ω	2.5 nA to 50 nA
330 to 1100 MΩ	12000	15000	500000Ω	500000Ω	10000Ω	1 nA to 13 nA

¹ Continuously variable from 0 to 1.1 GΩ.

² Applies for a 4-WIRE compensation only. For 2-WIRE and 2-WIRE COMP, add 5 μV per Amp of stimulus current to the floor specification. For example, in 2-WIRE mode, at 1 kΩ, the floor specification within 12 hours of an ohms zero cal for a measurement current of 1 mA is: 0.002Ω + 5 μV/1 mA = (0.002 + 0.005)Ω = 0.007Ω.

5500A

Ranges ¹	Absolute Uncertainty, tcal ±5°C ±[% of output + Ω] ²		Resolution	Allowable Current
	90 Days	1 Year		
0 to 10.999Ω	0.009 + 0.008 ³	0.012 + 0.008 ³	0.001Ω	1 to 125 mA
11 to 32.999Ω	0.009 + 0.015 ³	0.012 + 0.015 ³	0.001Ω	1 to 125 mA
33 to 109.999Ω	0.007 + 0.015 ³	0.009 + 0.015 ³	0.001Ω	1 to 70 mA
110 to 329.999Ω	0.007 + 0.015 ³	0.009 + 0.015 ³	0.001Ω	1 to 40 mA
330Ω to 1.09999 kΩ	0.007 + 0.06	0.009 + 0.06	0.01Ω	250 μA to 18 mA
1.1 to 3.29999 kΩ	0.007 + 0.06	0.009 + 0.06	0.01Ω	250 μA to 5 mA
3.3 to 10.9999 kΩ	0.007 + 0.6	0.009 + 0.6	0.1Ω	25 μA to 1.8 mA
11 to 32.9999 kΩ	0.007 + 0.6	0.009 + 0.6	0.1Ω	25 μA to 0.5 mA
33 to 109.999 kΩ	0.008 + 6	0.011 + 6	1Ω	2.5 μA to 0.18 mA
110 to 329.999 kΩ	0.009 + 6	0.012 + 6	1Ω	2.5 μA to 0.05 mA
330 kΩ to 1.09999 MΩ	0.011 + 55	0.015 + 55	10Ω	250 nA to 0.018 mA
1.1 to 3.29999 MΩ	0.011 + 55	0.015 + 55	10Ω	250 nA to 5 μA
3.3 to 10.9999 MΩ	0.045 + 550	0.06 + 550	100Ω	25 nA to 1.8 μA
11 to 32.9999 MΩ	0.075 + 550	0.1 + 550	100Ω	25 nA to 500 nA
33 to 109.999 MΩ	0.4 + 5500	0.5 + 5500	1000Ω	2.5 nA to 180 nA
110 to 329.999 MΩ	0.4 + 16500	0.5 + 16500	1000Ω	2.5 nA to 60 nA

¹ Continuously variable from 0 to 330 MΩ.

² Applies for COMP OFF (to the 5500A Calibrator front panel NORMAL terminals) and 2-wire and 4-wire compensation.

³ The floor added is improved to 0.006Ω (0-10.999Ω range) and 0.010Ω (11-329.999Ω range) if the 5500A is zeroed within 8 hours and temperature is ±1°C of zeroing ambient temperature.

AC Voltage (Sinewave) Specifications

5520A

Ranges	Frequency	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ \pm (ppm of output + μV)		Resolution	Maximum Burden ¹
		90 Days	1 Year		
1.0 to 32.999 mV	10 to 45 Hz	600 + 6	800 + 6	1 μV	50 Ω
	45 Hz to 10 kHz	120 + 6	150 + 6		
	10 to 20 kHz	160 + 6	200 + 6		
	20 to 50 kHz	800 + 6	1000 + 6		
	50 to 100 kHz	3000 + 12	3500 + 12		
	100 to 500 kHz	6000 + 50	8000 + 50		
33 to 329.999 mV	10 to 45 Hz	400 + 8	500 + 8	1 μV	50 Ω
	45 Hz to 10 kHz	140 + 8	145 + 8		
	10 to 20 kHz	150 + 8	160 + 8		
	20 to 50 kHz	300 + 8	350 + 8		
	50 to 100 kHz	600 + 32	800 + 32		
	100 to 500 kHz	1600 + 70	2000 + 70		
0.33 to 3.29999V	10 to 45 Hz	250 + 50	300 + 50	10 μV	10 mA
	45 Hz to 10 kHz	140 + 60	150 + 60		
	10 to 20 kHz	160 + 60	190 + 60		
	20 to 50 kHz	250 + 50	300 + 50		
	50 to 100 kHz	550 + 125	700 + 125		
	100 to 500 kHz	2000 + 600	2400 + 600		
3.3 to 32.9999V	10 to 45 Hz	250 + 650	300 + 650	100 μV	10 mA
	45 Hz to 10 kHz	125 + 600	150 + 600		
	10 to 20 kHz	220 + 600	240 + 600		
	20 to 50 kHz	300 + 600	350 + 600		
	50 to 100 kHz	750 + 1600	900 + 1600		
	33 to 329.999V	45 Hz to 1 kHz	150 + 2000		
1 to 10 kHz	160 + 6000	200 + 6000			
10 to 20 kHz	220 + 6000	250 + 6000			
20 to 50 kHz	240 + 6000	300 + 6000			
50 to 100 kHz	1600 + 50000	2000 + 50000			
330 to 1000V	45 Hz to 1 kHz	250 + 10000	300 + 10000	10 mV	2 mA, except 6 mA for 45 to 65 Hz
	1 to 5 kHz	200 + 10000	250 + 10000		
	5 to 10 kHz	250 + 10000	300 + 10000		
Auxiliary Output (dual output mode only)²					
10 to 329.999 mV	10 to 20 Hz	0.15% + 370	0.2% + 370	1 μV	5 mA
	20 to 45 Hz	0.08% + 370	0.1% + 370		
	45 Hz to 1 kHz	0.08% + 370	0.1% + 370		
	1 to 5 kHz	0.15% + 450	0.2% + 450		
	5 to 10 kHz	0.3% + 450	0.4% + 450		
	10 to 30 kHz	4.0% + 900	5.0% + 900		
0.33 to 3.29999V	10 to 20 Hz	0.15% + 450	0.2% + 450	10 μV	5 mA
	20 to 45 Hz	0.08% + 450	0.1% + 450		
	45 Hz to 1 kHz	0.07% + 450	0.09% + 450		
	1 to 5 kHz	0.15% + 1400	0.2% + 1400		
	5 to 10 kHz	0.3% + 1400	0.4% + 1400		
	10 to 30 kHz	4.0% + 2800	5.0% + 2800		
3.3 to 5V	10 to 20 Hz	0.15% + 450	0.2% + 450	100 μV	5 mA
	20 to 45 Hz	0.08% + 450	0.1% + 450		
	45 Hz to 1 kHz	0.07% + 450	0.09% + 450		
	1 to 5 kHz	0.15% + 1400	0.2% + 1400		
	5 to 10 kHz	0.3% + 1400	0.4% + 1400		
	10 to 30 kHz	4.0% + 2800	5.0% + 2800		

¹ Remote sensing is not provided. Output resistance is $< 5 \text{ m}\Omega$ for outputs $\geq 0.33\text{V}$. The AUX output resistance is $< 1\Omega$. The maximum load capacitance is 500 pF, subject to the maximum burden current limits.

² There are two channels of voltage output. The maximum frequency of the dual output is 30 kHz for the 5520A.

Note: Maximum voltage output is 1020V.

5500A

Ranges	Frequency	Absolute Uncertainty, tcal ±5°C ±[% of output + µV]		Resolution	Maximum Burden ¹
		90 Days	1 Year		
1.0 to 32.999 mV	10 to 45 Hz	0.26 + 20	0.35 + 20	1 µV	50Ω
	45 Hz to 10 kHz	0.11 + 20	0.15 + 20		
	10 to 20 kHz	0.15 + 20	0.2 + 20		
	20 to 50 kHz	0.19 + 20	0.25 + 20		
	50 to 100 kHz	0.26 + 33	0.35 + 33		
	100 to 500 kHz	0.75 + 60	1 + 60		
33 to 329.999 mV	10 to 45 Hz	0.19 + 50	0.25 + 50	1 µV	50Ω
	45 Hz to 10 kHz	0.04 + 20	0.05 + 20		
	10 to 20 kHz	0.08 + 20	0.1 + 20		
	20 to 50 kHz	0.12 + 40	0.16 + 40		
	50 to 100 kHz	0.17 + 170	0.24 + 170		
	100 to 500 kHz	0.53 + 330	0.7 + 330		
0.33 to 3.29999V	10 to 45 Hz	0.11 + 250	0.15 + 250	10 µV	10 mA
	45 Hz to 10 kHz	0.02 + 60	0.03 + 60		
	10 to 20 kHz	0.06 + 60	0.08 + 60		
	20 to 50 kHz	0.1 + 300	0.14 + 300		
	50 to 100 kHz	0.17 + 1700	0.24 + 1700		
	100 to 500 kHz	0.38 + 3300	0.5 + 3300		
3.3 to 32.9999V	10 to 45 Hz	0.11 + 2500	0.15 + 2500	100 µV	10 mA
	45 Hz to 10 kHz	0.03 + 600	0.04 + 600		
	10 to 20 kHz	0.06 + 2600	0.08 + 2600		
	20 to 50 kHz	0.14 + 5000	0.19 + 5000		
	50 to 100 kHz	0.17 + 17000	0.24 + 17000		
33 to 329.999V	45 Hz to 1 kHz	0.04 + 6.6 mV	0.05 + 6.6 mV	1 mV	5 mA, except 20 mA for 45 to 65 Hz
	1 to 10 kHz	0.06 + 15 mV	0.08 + 15 mV		
	10 to 20 kHz	0.07 + 33 mV	0.09 + 33 mV		
330 to 1000V	45 Hz to 1 kHz	0.04 + 80 mV	0.05 + 80 mV	10 mV	2 mA, except 6 mA for 45 to 65 Hz
	1 to 5 kHz	0.15 + 100 mV	0.20 + 100 mV		
	5 to 10 kHz	0.15 + 500 mV	0.20 + 500 mV		
5725 Amplifier					
10 to 329.999 mV	45 Hz to 1 kHz	0.04 + 80 mV	0.05 + 80 mV	10 mV	50 mA 70 mA 70 mA
	1 to 20 kHz	0.06 + 100 mV	0.08 + 100 mV		
	20 to 30 kHz	0.08 + 100 mV	0.1 + 100 mV		
100 to 750V	30 to 100 kHz	0.38 + 500 mV	0.5 + 500 mV	10 µV	70 mA
Auxiliary Output (dual output mode only)²					
10 to 329.999 mV	10 to 20 Hz	0.15 + 370	0.2 + 370	1 µV	5 mA
	20 to 45 Hz	0.08 + 370	0.1 + 370		
	45 Hz to 1 kHz	0.08 + 370	0.1 + 370		
	1 to 5 kHz	0.15 + 450	0.2 + 450		
	5 to 10 kHz	0.3 + 450	0.4 + 450		
0.33 to 3.29999V	10 to 20 Hz	0.15 + 450	0.2 + 450	10 µV	5 mA
	20 to 45 Hz	0.08 + 450	0.1 + 450		
	45 Hz to 1 kHz	0.07 + 450	0.09 + 450		
	1 to 5 kHz	0.15 + 1400	0.2 + 1400		
	5 to 10 kHz	0.3 + 1400	0.4 + 1400		

¹ Remote sensing is not provided. Output resistance is <5 mΩ for outputs ≥0.33V. The AUX output resistance is <1Ω. The maximum load capacitance is 500 pF, subject to the maximum burden current limits.

² There are two channels of voltage output. The maximum frequency of the dual output is 10 kHz for the 5500A.

Note: Maximum voltage output is 1020V.

AC Current (Sinewave) Specifications

5520A (LCOMP Off)

Ranges	Frequency	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C} \pm (\% \text{ of output} + \mu\text{A})$				Maximum Inductive Load
		90 Days		1 Year		
29.00 to 329.99 μA	10 to 20 Hz	0.16%	0.1 μA	0.2%	0.1 μA	200 μH
	20 to 45 Hz	0.12%	0.1 μA	0.15%	0.1 μA	
	45 Hz to 1 kHz	0.1%	0.1 μA	0.125%	0.1 μA	
	1 to 5 kHz	0.25%	0.15 μA	0.3%	0.15 μA	
	5 to 10 kHz	0.6%	0.2 μA	0.8%	0.2 μA	
	10 to 30 kHz	1.2%	0.4 μA	1.6%	0.4 μA	
0.33 to 3.2999 mA	10 to 20 Hz	0.16%	0.15 μA	0.2%	0.15 μA	200 μH
	20 to 45 Hz	0.1%	0.15 μA	0.125%	0.15 μA	
	45 Hz to 1 kHz	0.08%	0.15 μA	0.1%	0.15 μA	
	1 to 5 kHz	0.16%	0.2 μA	0.2%	0.2 μA	
	5 to 10 kHz	0.4%	0.3 μA	0.5%	0.3 μA	
	10 to 30 kHz	0.8%	0.6 μA	1.0%	0.6 μA	
3.3 to 32.999 mA	10 to 20 Hz	0.15%	2 μA	0.18%	2 μA	50 μH
	20 to 45 Hz	0.075%	2 μA	0.09%	2 μA	
	45 Hz to 1 kHz	0.035%	2 μA	0.04%	2 μA	
	1 to 5 kHz	0.065%	2 μA	0.08%	2 μA	
	5 to 10 kHz	0.16%	3 μA	0.2%	3 μA	
	10 to 30 kHz	0.32%	4 μA	0.4%	4 μA	
33 to 329.99 mA	10 to 20 Hz	0.15%	20 μA	0.18%	20 μA	50 μH
	20 to 45 Hz	0.075%	20 μA	0.09%	20 μA	
	45 Hz to 1 kHz	0.035%	20 μA	0.04%	20 μA	
	1 to 5 kHz	0.08%	50 μA	0.10%	50 μA	
	5 to 10 kHz	0.16%	100 μA	0.2%	100 μA	
	10 to 30 kHz	0.32%	200 μA	0.4%	200 μA	
0.33 to 2.99999A	10 to 45 Hz	0.15%	100 μA	0.18%	100 μA	2.5 μH
	45 Hz to 1 kHz	0.036% ⁴	100 μA	0.05% ⁴	100 μA	
	1 to 5 kHz ²	0.5%	1000 μA	0.6%	1000 μA	
	5 to 10 kHz ³	2.0%	5000 μA	2.5%	5000 μA	
3 to 10.9999A	45 to 100 Hz	0.05%	2000 μA	0.06%	2000 μA	1 μH
	100 to 1 kHz	0.08%	2000 μA	0.10%	2000 μA	
	1 to 5 kHz	2.5%	2000 μA	3.0%	2000 μA	
11 to 20.5A ¹	45 to 100 Hz	0.1%	5000 μA	0.12%	5000 μA	1 μH
	100 Hz to 1 kHz	0.13%	5000 μA	0.15%	5000 μA	
	1 to 5 kHz	2.5%	5000 μA	3.0%	5000 μA	

¹ At 20°C, full 20.5A output is available continuously for 20 minutes.

² For compliance voltages greater than 1V, add 1 mA/V to the floor specification from 1 to 5 kHz.

³ For compliance voltages greater than 1V, add 5 mA/V to the floor specification from 5 to 10 kHz.

⁴ For 1.1 to 2.99999A, 90 day uncertainty is .05% and the 1 year uncertainty is .06%.

5520A (LCOMP On)

Ranges	Frequency	Absolute Uncertainty, tcal ±5°C ±[% of output + µA]				Maximum Inductive Load
		90 Days		1 Year		
29.00 to 329.99 µA	10 to 100 Hz	0.2%	0.2 µA	0.25%	0.2 µA	400 µH
	100 Hz to 1 kHz	0.5%	0.5 µA	0.6%	0.5 µA	
0.33 to 3.2999 mA	10 to 100 Hz	0.2%	0.3 µA	0.25%	0.3 µA	400 µH
	100 Hz to 1 kHz	0.5%	0.8 µA	0.6%	0.8 µA	
3.3 to 32.999 mA	10 to 100 Hz	0.07%	4 µA	0.08%	4 µA	400 µH
	100 Hz to 1 kHz	0.18%	10 µA	0.2%	10 µA	
33 to 329.99 mA	10 to 100 Hz	0.07%	40 µA	0.08%	40 µA	400 µH
	100 Hz to 1 kHz	0.18%	100 µA	0.2%	100 µA	
0.33 to 2.99999A	10 to 100 Hz	0.1%	200 µA	0.12%	200 µA	400 µH
	100 to 440 Hz	0.25%	1000 µA	0.3%	1000 µA	
3 to 20.5A ¹	45 to 100 Hz	0.1%	2000 µA	0.12%	2000 µA	400 µH ²
	100 to 440 Hz	0.8%	5000 µA	1.0%	5000 µA	

¹ At 20°C, full 20.5A output is available continuously for 20 minutes.

² Subject to compliance voltage limit.

5520A Resolution and Compliance Voltage

Ranges	Resolution	Maximum Compliance Voltage
0.029 to 0.32999 mA	0.01 µA	7V rms
0.33 to 3.29999 mA	0.01 µA	7V rms
3.3 to 32.9999 mA	0.1 µA	5V rms
33 to 329.999 mA	1 µA	5V rms
0.33 to 2.99999A	10 µA	4V rms ¹
3 to 20.5A	100 µA	3V rms

¹ Subject to specification adder for compliance voltages greater than 1V rms (previous page).

AC Current (Sinewave) Specifications

5500A

Ranges	Frequency	Absolute Uncertainty, tcal ±5°C ±(% of output + μA)		Resolution	Compliance Voltage	Maximum Inductive Load
		90 Days	1 Year			
29.00 to 329.99 μA	10 to 20 Hz	0.19 + 0.15	0.25 + 0.15	0.01 μA	3V rms	1 μH
	20 to 45 Hz	0.09 + 0.15	0.125 + 0.15			
	45 Hz to 1 kHz	0.09 + 0.15	0.125 + 0.15			
	1 to 5 kHz	0.30 + 0.15	0.4 + 0.15			
	5 to 10 kHz	0.94 + 0.15	1.25 + 0.15			
0.33 to 3.2999 mA	10 to 20 Hz	0.15 + 0.3	0.2 + 0.3	0.01 μA	3V rms	1 μH
	20 to 45 Hz	0.08 + 0.3	0.1 + 0.3			
	45 Hz to 1 kHz	0.08 + 0.3	0.1 + 0.3			
	1 to 5 kHz	0.15 + 0.3	0.2 + 0.3			
	5 to 10 kHz	0.45 + 0.3	0.6 + 0.3			
3.3 to 32.999 mA	10 to 20 Hz	0.15 + 3	0.2 + 3	0.1 μA	3V rms	200 μH, 10 to 500 Hz 1 μH, 500 Hz to 10 kHz
	20 to 45 Hz	0.08 + 3	0.1 + 3			
	45 Hz to 1 kHz	0.07 + 3	0.09 + 3			
	1 to 5 kHz	0.15 + 3	0.2 + 3			
	5 to 10 kHz	0.45 + 3	0.6 + 3			
33 to 329.99 mA	10 to 20 Hz	0.15 + 30	0.2 + 30	1 μA	3V rms	200 μH, 10 to 500 Hz 5 μH, 500 Hz to 10 kHz
	20 to 45 Hz	0.08 + 30	0.1 + 30			
	45 Hz to 1 kHz	0.07 + 30	0.09 + 30			
	1 to 5 kHz	0.15 + 30	0.2 + 30			
	5 to 10 kHz	0.45 + 30	0.6 + 30			
0.33 to 2.19999A	10 to 45 Hz	0.15 + 300	0.2 + 300	10 μA	3V rms	200 μH, 45 to 500 Hz 5 μH, 500 Hz to 5 kHz
	45 Hz to 1 kHz	0.08 + 300	0.1 + 300			
	1 to 5 kHz	0.07 + 300	0.75 + 300			
2.2 to 11A	45 to 65 Hz	0.05 + 2000	0.06 + 2000	100 μA	2.8V rms	200 μH, 45 to 65 Hz 1 μH, 65 Hz to 1 kHz
	65 to 500 Hz	0.08 + 2000	0.1 + 2000			
	500 Hz to 1 kHz	0.25 + 2000	0.33 + 2000			
5725A Amplifier						
1.5 to 11A	45 Hz to 1 kHz	0.08 + 100	0.01 + 100	100 μA	3V rms	400 μH
	1 to 5 kHz	0.19 + 5000	0.25 + 5000			
	5 to 10 kHz	0.75 + 10000	1 + 10000			

Capacitance Specifications

5520A

Ranges	Absolute Uncertainty, tcal ±5°C ±(% of output + nF)		Resolution	Allowed Frequency or Charge-Discharge Rate	
	90 Days	1 Year		To Meet Specification	Typical for <0.5% Error
0.19 to 0.3999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	10 Hz to 10 kHz	20 kHz
0.4 to 1.0999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	10 Hz to 10 kHz	30 kHz
1.1 to 3.2999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	10 to 3000 Hz	30 kHz
3.3 to 10.9999 nF	0.19 + 0.01	0.25 + 0.01	0.1 pF	10 to 1000 Hz	20 kHz
11 to 32.9999 nF	0.19 + 0.1	0.25 + 0.1	0.1 pF	10 to 1000 Hz	8 kHz
33 to 109.999 nF	0.19 + 0.1	0.25 + 0.1	1 pF	10 to 1000 Hz	4 kHz
110 to 329.999 nF	0.19 + 0.3	0.25 + 0.3	1 pF	10 to 1000 Hz	2.5 kHz
0.33 to 1.09999 μF	0.19 + 1	0.25 + 1	10 pF	10 to 600 Hz	1.5 kHz
1.1 to 3.29999 μF	0.19 + 3	0.25 + 3	10 pF	10 to 300 Hz	800 Hz
3.3 to 10.9999 μF	0.19 + 10	0.25 + 10	100 pF	10 to 150 Hz	450 Hz
11 to 32.9999 μF	0.30 + 30	0.40 + 30	100 pF	10 to 120 Hz	250 Hz
33 to 109.999 μF	0.34 + 100	0.45 + 100	1 nF	10 to 80 Hz	150 Hz
110 to 329.999 μF	0.34 + 300	0.45 + 300	1 nF	To 50 Hz	80 Hz
0.33 to 1.09999 mF	0.34 + 1 μF	0.45 + 1 μF	10 nF	To 20 Hz	45 Hz
1.1 to 3.2999 mF	0.34 + 3 μF	0.45 + 3 μF	10 nF	To 6 Hz	30 Hz
3.3 to 10.9999 mF	0.34 + 10 μF	0.45 + 10 μF	100 nF	To 2 Hz	15 Hz
11 to 32.9999 mF	0.7 + 30 μF	0.75 + 30 μF	100 nF	To 0.6 Hz	7.5 Hz
33 to 110 mF	1.0 + 100 μF	1.1 + 100 μF	10 μF	To 0.2 Hz	3 Hz

Notes

1. The output is continuously variable from 190 pF to 110 mF.
2. Specifications apply to both dc charge/discharge capacitance meters and ac RCL meters.
3. The maximum peak voltage allowable is 3V. The maximum allowable peak current is 150 mA.
4. The maximum lead resistance for no additional error in 2-wire COMP mode is 10 ohms.

Capacitance Specifications

5500A

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \text{nF})$		Resolution	Allowed Frequency or Charge-Discharge Rate	
	90 Days	1 Year		To Meet Specification	Typical for <5% Error
0.33 to 0.4999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	50 to 1000 Hz	10 kHz
0.5 to 1.0999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	50 to 1000 Hz	10 kHz
1.1 to 3.2999 nF	0.38 + 0.01	0.5 + 0.01	0.1 pF	50 to 1000 Hz	10 kHz
3.3 to 10.9999 nF	0.38 + 0.01	0.5 + 0.01	1 pF	50 to 1000 Hz	10 kHz
11 to 32.9999 nF	0.19 + 0.1	0.25 + 0.1	1 pF	50 to 1000 Hz	10 kHz
33 to 109.999 nF	0.19 + 0.1	0.25 + 0.1	10 pF	50 to 1000 Hz	10 kHz
110 to 329.999 nF	0.19 + 0.3	0.25 + 0.3	10 pF	50 to 1000 Hz	10 kHz
0.33 to 1.09999 μF	0.19 + 1	0.25 + 1	100 pF	50 to 1000 Hz	5 kHz
1.1 to 3.29999 μF	0.26 + 3	0.35 + 3	100 pF	50 to 1000 Hz	2 kHz
3.3 to 10.9999 μF	0.26 + 10	0.35 + 10	1 nF	50 to 400 Hz	1.5 kHz
11 to 32.9999 μF	0.3 + 30	0.4 + 30	1 nF	50 to 400 Hz	800 Hz
33 to 109.999 μF	0.38 + 100	0.5 + 100	10 nF	50 to 200 Hz	400 Hz
110 to 329.999 μF	0.5 + 300	0.7 + 300	10 nF	50 to 100 Hz	200 Hz
0.33 to 1.1 mF	1 + 300	1 + 300	100 nF	50 to 100 Hz	150 Hz

Notes

1. The output is continuously variable from 330 pF to 1.1 mF.
2. Specifications apply to both dc charge/discharge capacitance meters and ac RCL meters.
3. For all ranges, the maximum charge and discharge current is 150 mA peak.
The peak voltage is 4V, except the 0.33 to 1.1 mF range is limited to 1V.
4. The maximum lead resistance for no additional error in 2-wire COMP mode is 10 Ω .

Temperature Calibration Specifications

5520A/5500A Thermocouple

TC Type	Range		Absolute Uncertainty, tcal ±5°C ±(°C) ¹ Source/Measure	
	Minimum	Maximum	90 Days	1 Year
B	600°C	800°C	0.42°C	0.44°C
	800°C	1000°C	0.34°C	0.34°C
	1000°C	1550°C	0.30°C	0.30°C
	1550°C	1820°C	0.26°C	0.33°C
C	0°C	150°C	0.23°C	0.30°C
	150°C	650°C	0.19°C	0.26°C
	650°C	1000°C	0.23°C	0.31°C
	1000°C	1800°C	0.38°C	0.50°C
	1800°C	2316°C	0.63°C	0.84°C
E	-250°C	-100°C	0.38°C	0.50°C
	-100°C	-25°C	0.12°C	0.16°C
	-25°C	350°C	0.10°C	0.14°C
	350°C	650°C	0.12°C	0.16°C
	650°C	1000°C	0.16°C	0.21°C
J	-210°C	-100°C	0.20°C	0.27°C
	-100°C	-30°C	0.12°C	0.16°C
	-30°C	150°C	0.10°C	0.14°C
	150°C	760°C	0.13°C	0.17°C
	760°C	1200°C	0.18°C	0.23°C
K	-200°C	-100°C	0.25°C	0.33°C
	-100°C	-25°C	0.14°C	0.18°C
	-25°C	120°C	0.12°C	0.16°C
	120°C	1000°C	0.19°C	0.26°C
	1000°C	1372°C	0.30°C	0.40°C
L	-200°C	-100°C	0.37°C	0.37°C
	-100°C	800°C	0.26°C	0.26°C
	800°C	900°C	0.17°C	0.17°C
N	-200°C	-100°C	0.30°C	0.40°C
	-100°C	-25°C	0.17°C	0.22°C
	-25°C	120°C	0.15°C	0.19°C
	120°C	410°C	0.14°C	0.18°C
	410°C	1300°C	0.21°C	0.27°C
R	0°C	250°C	0.48°C	0.57°C
	250°C	400°C	0.28°C	0.35°C
	400°C	1000°C	0.26°C	0.33°C
	1000°C	1767°C	0.30°C	0.40°C
S	0°C	250°C	0.47°C	0.47°C
	250°C	1000°C	0.30°C	0.36°C
	1000°C	1400°C	0.28°C	0.37°C
	1400°C	1767°C	0.34°C	0.46°C
T	-250°C	-150°C	0.48°C	0.63°C
	-150°C	0°C	0.18°C	0.24°C
	0°C	120°C	0.12°C	0.16°C
	120°C	400°C	0.10°C	0.14°C
U	-200°C	0°C	0.56°C	0.56°C
	0°C	600°C	0.27°C	0.27°C

¹ Does not include thermocouple error.

Notes 1. Resolution is 0.01°C.

2. Temperature standard ITS-90 or IPTS-68 is selectable.

Temperature Calibration Specifications

5520A/5500A RTD

RTD Type	Range		Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C} \pm (^{\circ}\text{C})^1$	
	Minimum	Maximum	90 Days	1 Year
Pt 385, 100 Ω	-200 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
	400 $^{\circ}\text{C}$	630 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$
	630 $^{\circ}\text{C}$	800 $^{\circ}\text{C}$	0.21 $^{\circ}\text{C}$	0.23 $^{\circ}\text{C}$
Pt 3926, 100 Ω	-200 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
Pt 3916, 100 Ω	-200 $^{\circ}\text{C}$	-190 $^{\circ}\text{C}$	0.25 $^{\circ}\text{C}$	0.25 $^{\circ}\text{C}$
	-190 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$
	260 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
Pt 385, 200 Ω	-200 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	260 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.11 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$	0.13 $^{\circ}\text{C}$
	400 $^{\circ}\text{C}$	600 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$	0.14 $^{\circ}\text{C}$
Pt 385, 500 Ω	-200 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$
	260 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	400 $^{\circ}\text{C}$	600 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
Pt 385, 1000 Ω	-200 $^{\circ}\text{C}$	-80 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$
	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$
	260 $^{\circ}\text{C}$	300 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$
	300 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.05 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$
	400 $^{\circ}\text{C}$	600 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$
Ni120, 120 Ω	-80 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.13 $^{\circ}\text{C}$	0.14 $^{\circ}\text{C}$
Cu 427, 10 Ω^2	-100 $^{\circ}\text{C}$	260 $^{\circ}\text{C}$	0.30 $^{\circ}\text{C}$	0.30 $^{\circ}\text{C}$

¹ Applies for COMP OFF (to the 5520A or 5500A front panel NORMAL terminals) and 2-wire and 4-wire compensation.

² Based on MINCO Application Aid No. 18.

Notes 1. Resolution is 0.003 $^{\circ}\text{C}$. 2. Temperature standard ITS-90 or IPTS-68 is selectable.

DC Power Summary Specifications

5520A

	Voltage Range	Absolute Uncertainty, tcal ±5°C ±(% of watts output)		
		Current Range		
		0.33 to 329.99 mA	0.33 to 10.9999A	11 to 20.5A
90 days	33 mV to 1000V	0.021%	0.055%	0.10%
1 year	33 mV to 1000V	0.023%	0.07%	0.12%

Note: Maximum voltage output is 1020V.

5500A

	Voltage Range	Absolute Uncertainty, tcal ±5°C ±(% of watts output)		
		Current Range		
		3.3 to 329.99 mA	0.33 to 4.4999A	4.5 to 11A
90 days	33 mV to 1000V	0.03%	0.08%	0.06%
1 year	33 mV to 1000V	0.04%	0.12%	0.09%
5725A Amplifier Current Range		1.5 to 4.4999A	4.5 to 11A	
90 days	33 mV to 1000V	0.09%	0.07%	
1 year	33 mV to 1000V	0.1%	0.08%	

Note: Maximum voltage output is 1020V.

AC Power Summary Specifications

5520A (45 Hz to 65 Hz) PF = 1

	Voltage Range	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ \pm (% of watts output)			
		Current Range			
		3.3 to 8.999 mA	9 to 32.999 mA	33 to 89.99 mA	90 to 329.99 mA
90 days	33 to 329.999 mV	0.13%	0.09%	0.13%	0.09%
	330 mV to 1000V	0.11%	0.07%	0.11%	0.07%
1 year	33 to 329.999 mV	0.14%	0.10%	0.14%	0.10%
	330 mV to 1000V	0.12%	0.08%	0.12%	0.08%
		0.33 to 0.8999A	0.9 to 2.9999A	3 to 10.9999A	11 to 20.5A
90 days	33 to 329.999 mV	0.12%	0.10%	0.12%	0.10%
	330 mV to 1000V	0.10%	0.08%	0.11%	0.09%
1 year	33 to 329.999 mV	0.13%	0.11%	0.13%	0.16%
	330 mV to 1000V	0.11%	0.09%	0.12%	0.19%

Note: Maximum voltage output is 1020V.

5500A (45 Hz to 65 Hz) PF = 1

	Voltage Range	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ \pm (% of watts output)			
		Current Range			
		3.3 to 8.999 mA	9 to 32.999 mA	33 to 89.99 mA	90 to 329.99 mA
90 days	33 to 329.999 mV	0.3%	0.2%	0.25%	0.2%
	330 mV to 1000V	0.2%	0.12%	0.2%	0.12%
1 year	33 to 329.999 mV	0.4%	0.25%	0.35%	0.25%
	330 mV to 1000V	0.25%	0.15%	0.25%	0.15%
5725 Amplifier					
90 days	100 to 1000V	0.2%	0.12%	0.2%	0.12%
1 year	100 to 1000V	0.25%	0.15%	0.25%	0.15%
5500A		0.33 to 0.8999A	0.9 to 2.1999A	2.2 to 4.4999A	4.5 to 11A
90 days	33 to 329.999 mV	0.25%	0.2%	0.25%	0.2%
	330 mV to 1000V	0.2%	0.12%	0.18%	0.12%
1 year	33 to 329.999 mV	0.35%	0.25%	0.35%	0.25%
	330 mV to 1000V	0.25%	0.15%	0.2%	0.15%
5725 Amplifier					
90 days	100 to 1000V	0.2%	0.12%	0.18%	0.12%
1 year	100 to 1000V	0.25%	0.15%	0.20%	0.15%

Note: Maximum voltage output is 1020V.

5520A/5500A Phase

1 Year Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$, ($\Delta\Phi$ degrees)						
	10 to 65 Hz	65 to 500 Hz	500 to 1 kHz	1k to 5 kHz	5k to 10 kHz	10k to 30 kHz
5520A	0.10°	0.25°	0.5°	2.5°	5°	10°
5500A	0.15°	0.9°	2.0°	6°	10°	—

Notes 1. The phase adjustment range for dual ac outputs is 0 to ± 179.99 degrees.

2. The phase resolution for dual ac outputs is 0.01 degrees for the 5520A and 0.02 degrees for the 5500A.

Frequency Specifications

5520A

Frequency Range	Resolution	1 Year Absolute Uncertainty, tcal ±5°C	Jitter
0.01 to 119.99 Hz	0.01 Hz	2.5 ppm, ±5 µHz	100 nS
120.0 to 1199.9 Hz	0.1 Hz		
1.200 to 11.999 kHz	1.0 Hz		
12.00 to 119.99 kHz	10 Hz		
120.0 to 1199.9 kHz	100 Hz		
1.200 to 2.000 MHz	1 kHz		

5500A

Frequency Range	Resolution	1 Year Absolute Uncertainty, tcal ±5°C ± (ppm of output + mHz)	Jitter
0.01 to 119.99 Hz	0.01 Hz	25 + 1	2 µs
120.0 to 1199.9 Hz	0.1 Hz	25 + 1	2 µs
1.200 to 11.999 kHz	1.0 Hz	25 + 1 ¹	2 µs ²
12.00 to 119.99 kHz	10 Hz	25 + 15	140 ns
120.0 to 1199.9 kHz	100 Hz	25 + 15	140 ns
1.200 to 2.000 MHz	1 kHz	25 + 15	140 ns

¹ Uncertainty is ±25 ppm + 15 mHz above 10 kHz.

² Jitter above 10 kHz is <140 ns.

Extended AC Voltage Specifications

5520A Sinewave Extended Bandwidth

Ranges	Frequency	1 Year Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \% \text{ of range})$	Maximum Voltage Resolution
Normal Channel (Single Output Mode)			
1 to 33 mV	0.01 to 9.99 Hz	5.0% + 0.5%	Two digits, e.g., 25 mV
34 to 330 mV			Three digits
0.4 to 3.3V			Two digits
4 to 33V			See "5520A AC Voltage (Sinewaves) Specifications"
0.3 to 3.3V	10 Hz to 500 kHz	See "5520A AC Voltage (Sinewaves) Specifications"	Two digits
	500.1 kHz to 1 MHz	-8 dB at 1 MHz, typical	
	1.001 to 2 MHz	-26 dB at 2 MHz, typical	
Auxiliary Output (Dual Output Mode)			
10 to 330 mV	0.01 to 9.99 Hz	5.0% + 0.5%	Three digits
0.4 to 5.0V			Two digits
	10 Hz to 30 kHz	See "5520A AC Voltage (Sinewaves) Specifications"	

5500A Sinewave Extended Bandwidth

Ranges	Frequency	1 Year Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \% \text{ of range})$	Maximum Voltage Resolution
Normal Channel (Single Output Mode)			
1 to 33 mV	0.01 to 9.99 Hz	5.0% + 0.5%	Two digits, e.g., 25 mV
34 to 330 mV			Three digits
0.4 to 3.3V			Two digits
4 to 33V			See "5500A AC Voltage (Sinewaves) Specifications"
0.3 to 3.3V	10 Hz to 500 kHz	See "5500A AC Voltage (Sinewaves) Specifications"	Two digits
	500.1 kHz to 1 MHz	-8 dB at 1 MHz, typical	
	1.001 to 2 MHz	-32 dB at 2 MHz, typical	
Auxiliary Output (Dual Output Mode)			
10 to 330 mV	0.01 to 9.99 Hz	5.0% + 0.5%	Three digits
0.4 to 3.3V			Two digits
	10 Hz to 10 kHz	See "5500A AC Voltage (Sinewaves) Specifications"	

AC Voltage (Non-Sinewave) Specifications

5520A/5500A

Trianglewave and Truncated Sine Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, tcal ±5°C ±(% of output + % of range)	Maximum Voltage Resolution
Normal Channel (Single Output Mode)			
2.9 mV to 93V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 20 kHz	0.5% + 0.25%	
	20 to 100 kHz	5.0% + 0.5%	
5520A Auxiliary Output (Dual Output Mode)			
29 mV to 14V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	
5500A Auxiliary Output (Dual Output Mode)			
29 mV to 9.3V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	

Squarewave Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, tcal ±5°C ±(% of output + % of range)	Maximum Voltage Resolution
Normal Channel (Single Output Mode)			
2.9 mV to 66V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 20 kHz	0.5% + 0.25%	
	20 to 100 kHz	5.0% + 0.5%	
5520A Auxiliary Output (Dual Output Mode)			
29 mV to 14V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	
5500A Auxiliary Output (Dual Output Mode)			
29 mV to 6.6V	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	

5520A/5500A Squarewave Characteristics

Risetime @ 1 kHz Typical	Settling Time @ 1 kHz Typical	Overshoot @ 1 kHz Typical	Duty Cycle Range	Duty Cycle Uncertainty ¹
<1 μs	<10 μs to 1% of final value	<2%	1% to 99%, <3.3V p-p, 0.01 Hz to 100 kHz	±(0.8% of period + 100 ns)

¹ For duty cycles of 10.00% to 90.00%.

5520A/5500A Trianglewave Characteristics (typical)

Linearity to 1 kHz	Aberrations
0.3% of p-p value, from 10% to 90% point	<1% of p-p value, with amplitude >50% of range

AC Current (Non-Sinewave) Specifications

5520A (Trianglewave and Truncated Sinewave)

Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, $t_{cal} \pm 5^{\circ}C$ $\pm(\% \text{ of output} + \% \text{ of range})$	Maximum Current Resolution
0.047 to 0.92999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits, e.g., 0.75 mA
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
0.93 to 9.29999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
9.3 to 92.9999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
93 to 929.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.5%	
	1 to 10 kHz	10.0% + 2.0%	
0.93 to 8.49999A	10 to 45 Hz	0.5% + 1.0%	Six digits on each range
	45 Hz to 1 kHz	0.5% + 0.5%	
	1 to 10 kHz	10.0% + 2.0%	
8.5 to 57A	45 to 500 Hz	0.5% + 0.5%	Six digits on each range
	500 Hz to 1 kHz	1.0% + 1.0%	

5520A (Squarewave)

Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, tcal ±5°C ±(% of output + % of range)	Maximum Current Resolution
0.047 to 0.65999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits, e.g., 50 mA
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
0.66 to 6.59999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
6.6 to 65.9999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	10.0% + 2.0%	
66 to 659.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.5%	
	1 to 10 kHz	10.0% + 2.0%	
0.66 to 5.99999A	10 to 45 Hz	0.5% + 1.0%	Six digits on each range
	45 Hz to 1 kHz	0.5% + 0.5%	
	1 to 10 kHz	10.0% + 2.0%	
6 to 41A	45 to 500 Hz	0.5% + 0.5%	Six digits on each range
	500 Hz to 1 kHz	1.0% + 1.0%	

AC Current (Non-Sinewave) Specifications

5500A (Trianglewave and Truncated Sinewave)

Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \% \text{ of range})$	Maximum Current Resolution
0.047 to 92.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits, e.g., 0.50 mA
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	
93 to 929.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.5%	
	1 to 10 kHz	0.5% + 1.0%	
9.3 to 6.19999A	10 to 45 Hz	5.0% + 1.0%	Two digits on each range
	45 Hz to 1 kHz	0.5% + 0.5%	Six digits on each range
	1 to 10 kHz	5.0% + 1.0%	
6.2 to 31A	45 to 500 Hz	2.0% + 0.5%	Two digits on each range
	500 to 1 kHz	5.0% + 1.0%	Six digits on each range

5500A (Squarewave)

Ranges Peak-to-Peak	Frequency	1 Year Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$ $\pm(\% \text{ of output} + \% \text{ of range})$	Maximum Current Resolution
0.047 to 65.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits, e.g., 50 mA
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.25%	
	1 to 10 kHz	5.0% + 0.5%	
66 to 659.999 mA	0.01 to 10 Hz	5.0% + 0.5%	Two digits on each range
	10 to 45 Hz	0.25% + 0.5%	Six digits on each range
	45 Hz to 1 kHz	0.25% + 0.5%	
	1 to 10 kHz	0.5% + 1.0%	
0.66 to 4.39999A	10 to 45 Hz	5.0% + 1.0%	Two digits on each range
	45 Hz to 1 kHz	0.5% + 0.5%	Six digits on each range
	1 to 10 kHz	5.0% + 1.0%	
4.4 to 22A	45 to 500 Hz	2.0% + 0.5%	Two digits on each range
	500 Hz to 1 kHz	5.0% + 1.0%	Six digits on each range

Ordering Information

Ordering Information

5500A Multi-Product Calibrator

5520A High Performance Multi-Product Calibrator

Options

5500A-SC300 300 MHz/1 ns Oscilloscope Calibration Option

5500A-SC600 600 MHz/300 ps Oscilloscope Calibration Option

5500A-SC1100 1.1 GHz Oscilloscope Calibration Option

Accessories

5500A/COIL 50-Turn Current Coil

5500A/CASE Roll-Aboard Transit Case

5500A/LEADS Comprehensive Test Lead Kit

5500A/HNDL Side Carry Handle

Y5537 Rack Mount Kit

5725A Amplifier (5500A Only)

MET/CAL® Calibration Software (IEEE and RS232)

5500/CAL Calibration Software (RS232)

Pressure Modules (5520A only)

FLUKE-700PCK Pressure Module Calibration Kit (Required)

FLUKE-700P01 Pressure Module 0-10 IN. H2O DIFF

FLUKE-700P02 Pressure Module 0-1 PSID

FLUKE-700P03 Pressure Module 0-5 PSID

FLUKE-700P04 Pressure Module 0-15 PSID

FLUKE-700P05 Pressure Module 0-30 PSIG

FLUKE-700P06 Pressure Module 0-100 PSIG

FLUKE-700P07 Pressure Module 0-500 PSIG

FLUKE-700P08 Pressure Module 0-1000 PSIG

FLUKE-700P09 Pressure Module 1500PSIG

FLUKE-700P22 Pressure Module 0-1 PSID WET

FLUKE-700P23 Pressure Module 0-5 PSID WET

FLUKE-700P24 Pressure Module 0-15 PSID WET

FLUKE-700P29 Pressure Module 3000 PSIG WET

FLUKE-700P30 Pressure Module 5000 PSIG WET

FLUKE-700P31 Pressure Module 10000 PSIG WET

FLUKE-700PA3 Pressure Module 0-5 PSIA

FLUKE-700PA4 Pressure Module 0-15 PSIA

FLUKE-700PA5 Pressure Module 0-30 PSIA

FLUKE-700PA6 Pressure Module 0-100 PSIA

FLUKE-700PD2 Pressure Module ±1 PSID

FLUKE-700PD3 Pressure Module ±5 PSID

FLUKE-700PD4 Pressure Module ±15 PSID

FLUKE-700PD5 Pressure Module -15+30 PSIG

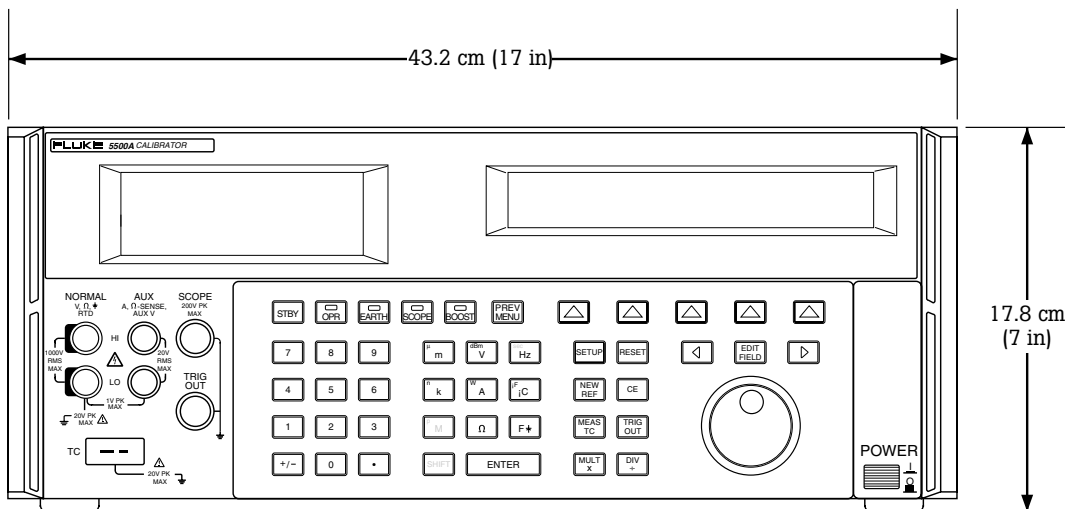
FLUKE-700PD6 Pressure Module -15+100 PSIG

FLUKE-700PD7 Pressure Module -15+200 PSIG

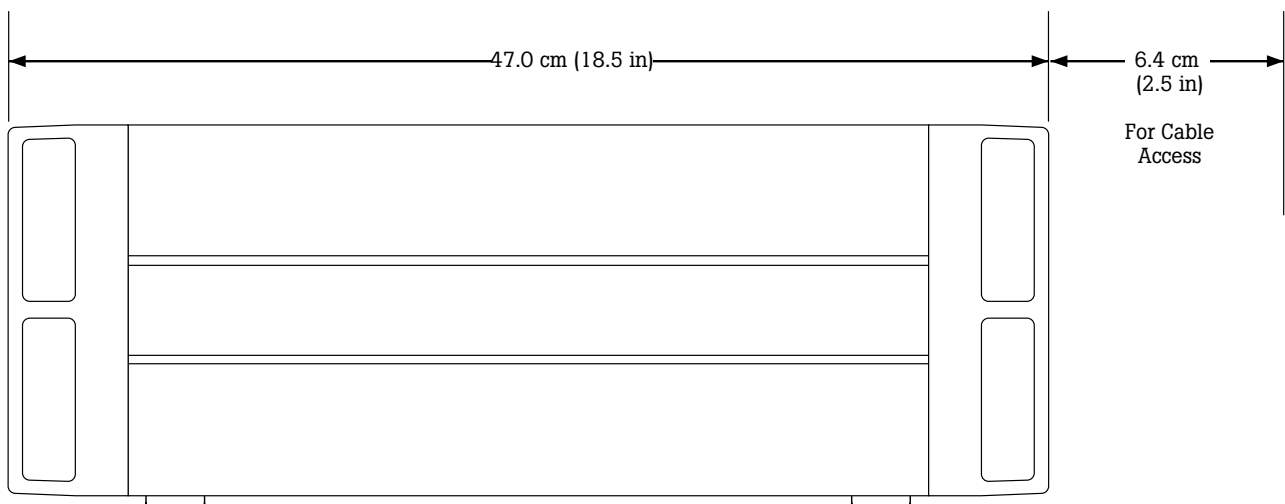
FLUKE-700PV3 Pressure Module -5 PSID

FLUKE-700PV4 Pressure Module -15 PSID

FLUKE-700PMP Pressure Pump



Front view and dimensions.



Side view and dimensions.

Note: 5500A and 5520A dimensions are the same.

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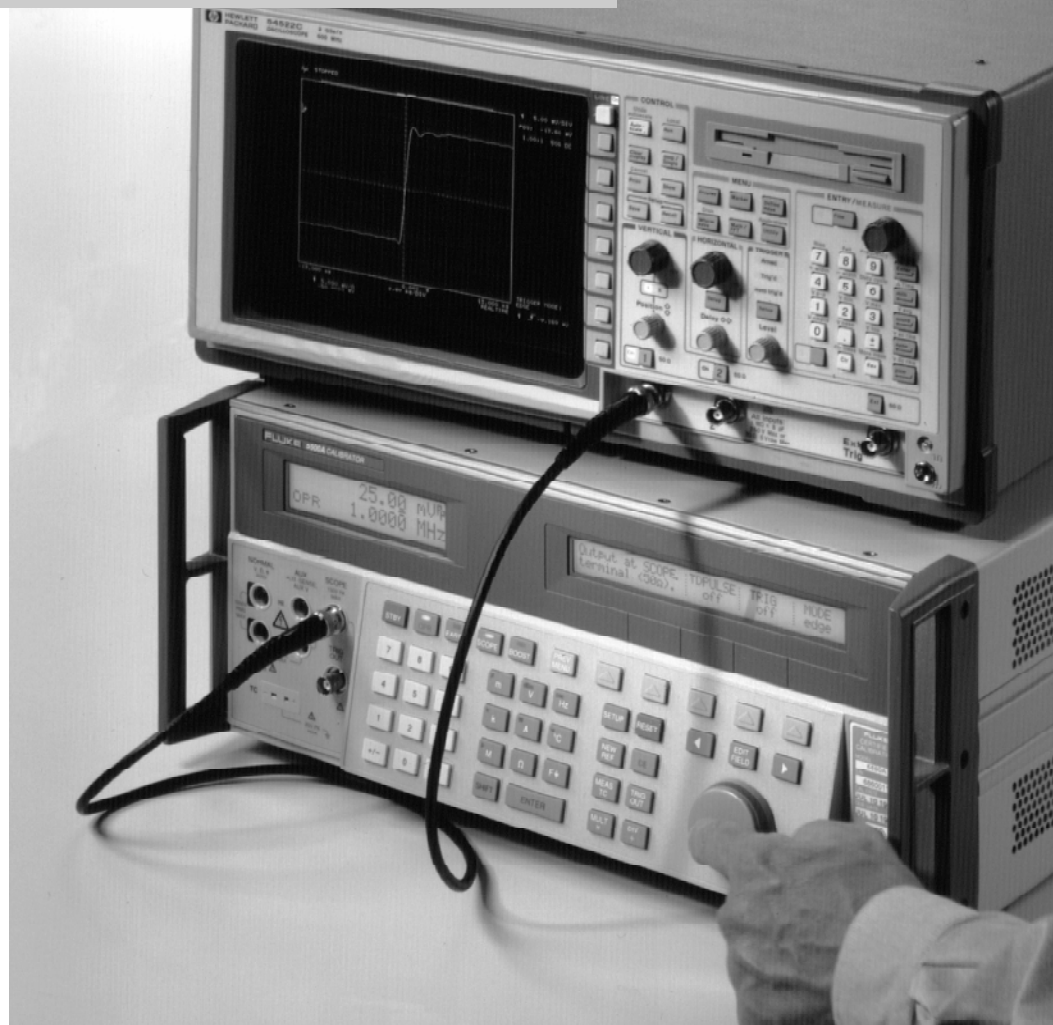
Oscilloscope Calibration Options for Fluke 5500A/5520A Multi-Product Calibrators

Extended Specifications
November 1999

General Specifications

These specifications apply to the 5520A-SC1100, 5500A-SC600 and 5500A-SC300 Oscilloscope Calibration Options. General specifications for the 5500A and 5520A can be found in the 5500A/5500A Extended Specifications (order publication number 1264848). The specifications are valid when the calibrator is operated under the conditions specified in the operator manual, and has completed a warm-up period of at least twice the length of time the calibrator was powered off, up to a maximum of 30 minutes.

The 5520A-SC1100 can only be installed in a 5520A calibrator. The 5500A-SC600 and SC300 can be installed in a 5520A or a 5500A calibrator.



Voltage Function Specifications

5520A-SC1100 and 5500A-SC600

Volt Function		DC Signal		Square Wave Signal ¹	
Load		Into 50Ω	Into 1 MΩ	Into 50Ω	Into 1 MΩ
Amplitude Characteristics					
Range		0V to ±6.6V	0V to ±130V	±1 mV to ±6.6V p-p	±1 mV to ±130V p-p
	Range	Resolution			
Resolution	1 mV to 24.999 mV 25 mV to 109.99 mV 110 mV to 2.1999V 2.2V to 10.999V 11V to 130V	1 μV 10 μV 100 μV 1 mV 10 mV			
Adjustment Range		Continuous			
1-Year Absolute Uncertainty, tcal ± 5°C		± (0.25% of output + 40 μV)	± (0.05% of output + 40 μV)	± (0.25% of output + 40 μV)	± (0.1% of output + 40 μV) ²
Sequence		1-2-5 (e.g., 10 mV, 20 mV, 50 mV)			
Square Wave Frequency Characteristics					
Range		10Hz to 10 kHz			
1-Year Absolute Uncertainty, tcal ± 5°C		± (2.5 ppm of setting)			
Typical Abberation (from 50% of leading/trailing edge) 25 mV to 130V: within 4 μs 10 mV to 25 mV: within 8 μs 1 mV to 10 mV: within 14 μs		< (0.5% of output + 100 μV)			

¹ Positive or negative, zero referenced square wave.

² Above 1 kHz, ± (0.25% of output + 40 μV). Assumes connectors and cables are in good condition.

5500A-SC300

Volt Function		DC Signal		Square Wave Signal ¹	
Load		Into 50Ω	Into 1 MΩ	Into 50Ω	Into 1 MΩ
Amplitude Range		0V to ±2.2V	0V to ±33V	±1.8 mV to ±2.2V p-p	±1.8 mV to ±105V p-p
1-Year Absolute Uncertainty, tcal ± 5°C		± (0.25% of output + 100 μV)			
Sequence		1-2-5 (e.g., 10 mV, 20 mV, 50 mV)			
Frequency Range		10 Hz to 10 kHz			

¹ Positive or negative, zero referenced square wave.

Edge Function Specifications

5520A-SC1100 and 5500A-SC600

Edge Characteristics into 50Ω		1-Year Absolute Uncertainty, tcal ±5°C
Amplitude		
Rise Time	< 300 ps	+ 0/-100 ps
Range (p-p)	5.0 mV to 2.5V	± (2% of output + 200 μV)
Resolution	4 digits	
Adjustment Range	± 10% around each sequence value (indicated below)	
Sequence Values	5 mV, 10 mV, 25 mV, 50 mV, 60 mV, 80 mV, 100 mV, 200 mV, 250 mV, 300 mV, 500 mV, 600 mV, 1V, 2.5V	
Other Edge Characteristics		
Frequency Range	1 kHz to 10 MHz ¹	± (2.5 ppm of setting)
Frequency Range	≤ 300 ps ¹	(+ 0 ps/-100ps)
Typical Jitter, Edge to Trigger	< 5 ps [p-p]	
Leading Edge Aberrations ²	within 2 ns from 50% of rising edge]	< (3% of output + 2 mV)
	2 ns to 5 ns	< (2% of output + 2 mV)
	5 ns to 15 ns	< (1% of output + 2 mV)
	after 15 ns	< (0.5% of output + 2 mV)
Typical Duty Cycle	45% to 55%	
Tunnel Diode Pulse Drive	Square wave at 100 Hz to 100 kHz, with variable amplitude of 60V to 100V p-p	
Tunnel Diode Option	≤ 125 ps @ 250 mV p-p	

¹ Frequency range above 2 MHz has rise time specification ≤350 ps.

² Below 250 mV aberrations are typical.

5500A-SC300

Edge Characteristics into 50Ω		1-Year Absolute Uncertainty, tcal ±5°C
Amplitude Range (p-p)	4.5 mV to 2.75V	± (2% of output + 200 μV)
Frequency Range	1 kHz to 1 MHz	± (25 ppm of setting + 15 mHz)
Rise Time	≤1 ns	
Typical Jitter, Edge to Trigger	<5 ps (p-p)	
Leading Edge Aberrations	Within 10 ns	< (2% of output + 2 mV)
	10 to 30 ns	< (1% of output + 2 mV)
	After 30 ns	< (0.5% of output + 2 mV)
Typical Duty Cycle	45% to 55%	

Leveled Sinewave Function Specifications

5520A-SC1100 (> 600 MHz)

Characteristics into 50Ω	Frequency Range	
	50 kHz (reference)	600 MHz to 1.1 GHz
Amplitude Characteristics		
Range	5 mV to 3.5V	
Resolution	< 100 mV: 3 digits; ≥ 100 mV: 4 digits	
Adjustment Range	Continuously Adjustable	
1-Year Absolute Uncertainty, tcal ± 5°C	± (2% of output + 300 μV)	± (7% of output + 300 μV)
Flatness (relative to 50 MHz) ¹	not applicable	± (5% of output + 100 μV)
Short-Term Amplitude Stability	≤ 1 % ²	
Frequency Characteristics		
Resolution	100 kHz	
1-Year Absolute Uncertainty, tcal ± 5°C	± 2.5 ppm	
Distortion Characteristics		
2 nd Harmonic	≤ -33 dBc	
3 rd and Higher Harmonic	≤ -38 dBc	

¹ As measured near oscilloscope bandwidth frequency.

² Within one hour after reference amplitude setting, provided temperature varies no more than ± 5°C.

5520A-SC1100 and 5500A-SC600

Leveled Sine Wave Characteristics into 50Ω	Frequency Range			
	50 kHz (Reference)	50 kHz to 100 MHz	100 MHz to 300 MHz	300 MHz to 600 MHz
Amplitude				
Range (p-p)	5 mV to 5.5V			
1-Year Absolute Uncertainty, tcal ± 5°C	± (2% of output + 300 μV)	± (3.5% of output + 300 μV)	± (4% of output + 300 μV)	± (6% of output + 300 μV)
Flatness (relative to 50 kHz) ¹	Not applicable	± (1.5% of output + 100 μV)	± (2% of output + 100 μV)	± (4% of output + 100 μV)
Short-Term Amplitude Stability	≤ 1% ²			
Frequency				
Resolution	10 kHz			
1-Year Absolute Uncertainty, tcal ± 5°C	± 2.5 ppm			
Distortion				
2 nd Harmonic	≤ -33 dBc			
3 rd and Higher Harmonics	≤ -38 dBc			

¹ As measured near oscilloscope bandwidth frequency.

² Within one hour after reference amplitude setting, provided temperature varies no more than ± 5°C.

5500A-SC300

Leveled Sine Wave Characteristics into 50Ω	Frequency Range		
	50 kHz (Reference)	50 kHz to 100 MHz	100 MHz to 300 MHz ¹
Amplitude			
Range (p-p)		5 mV to 5.5V ¹	
1-Year Absolute Uncertainty, tcal ±5°C	± (2% of output + 200 μV)	± (3.5% of output + 300 μV)	± (4% of output + 300 μV)
Flatness (relative to 50 kHz) ¹	Not applicable	± (1.5% of output + 100 μV)	± (2% of output + 100 μV)
Short-Term Amplitude Stability	≤1% ²		
Frequency			
Resolution	10 kHz		
1-Year Absolute Uncertainty, tcal ±5°C	± 2.5 ppm		
Distortion			
2nd Harmonic	≤ -33 dBc		
3rd and Higher Harmonics	≤ -38 dBc		

¹ Extended frequency range to 350 MHz is provided, but flatness is not specified. Amplitude is limited to 3V for frequencies above 250 MHz.

² Within one hour after reference amplitude setting, provided temperature varies no more than ±5°C.

Time Marker Function Specifications

5520A-SC1100 and 5500A-SC600

Time Marker into 50Ω ¹	5s to 50 ms	20 ms to 100 ns	50 ns to 20 ns	10 ns	5 ns to 2 ns
1-Year Absolute Uncertainty, tcal ±5°C ²	± (25 + t* X 1000) ppm	± 2.5 ppm	± 2.5 ppm	± 2.5 ppm	± 2.5 ppm
Wave Shape	Spike or square	Spike, square, 20%-pulse	Spike or square	Square or sine	Sine
Typical Jitter (p-p)	<10 ppm	<1 ppm	<1 ppm	<1 ppm	<1 ppm
Sequence	5-2-1 from 5s to 2 ns (e.g., 500 ms, 200 ms, 100 ms)				

¹ Output amplitude >1V pk.

² Time marker uncertainty is ± 50 ppm when measured off of cardinal points.

* t = time in seconds.

5500A-SC300

Time Marker into 50Ω [1]	5s to 100 μs	50 μs to 2 μs	1 μs to 20 ns	10 ns to 2 ns
1-Year Absolute Uncertainty, tcal ±5°C	± (25 + t* X 1000) pmm	± (25 + t* X 15000) pmm	± 25 ppm	± 25 ppm
Wave Shape	Pulsed Sawtooth	Pulsed Sawtooth	Pulsed Sawtooth	Sine
Sequence	5-2-1 from 5s to 2 ns (e.g., 500 ms, 200 ms, 100 ms)			

¹ Typical Amplitude > 1V

* t = time in seconds.

Trigger Functions 5520A-SC1100, 5500A-SC600 and 5500A-SC300

Available for edge and time marker functions (volt, pulse and video are available for 5520A-SC1100 and 5500A-SC600 only).

Wave Generator Function Specifications

5520A-SC1100, 5500A-SC600 and 5500A-SC300

Wave Generator Characteristics	Square Wave, Sine Wave, and Triangle Wave into 50Ω or 1 MΩ
Amplitude	
Range	Into 1 MΩ: 1.8 mV to 55V p-p Into 50Ω: 1.8 mV to 2.5V p-p (5520A-SC1100 and 5500A-SC600) Into 50Ω: 1.8 mV to 2.2V p-p (5500A-SC300)
1-Year Absolute Uncertainty, tcal ±5°C 10 Hz to 10 kHz	± (3% of p-p output + 100 μV)
Sequence	1-2-5 (eg., 10 mV, 20 mV, 50 mV,...)
Typical DC Offset Range	0 to ± (≥40% of p-p amplitude) ¹
Frequency	
Range	10 Hz to 100 kHz
Resolution	4 or 5 digits depending on frequency

¹ The DC offset plus the wave signal must not exceed 30V rms.

Pulse Generator Function Specifications

5520A-SC1100 and 5500A-SC600

The pulse generator is designed for oscilloscope capture function tests and trigger verification applications.

Pulse Generator Characteristics	Positive Pulse into 50Ω
Typical Rise/Fall Times	2 ns
Amplitude Available	Discrete steps: 2.5V, 1V, 250 mV, 100 mV, 25 mV, 10 mV
Pulse Width¹	
Range	4 ns to 500 ns ¹
Uncertainty ²	5% ± 2 ns
Pulse Period	
Range	20 ms to 200 ns (50 Hz to 6.6 MHz)
1-Year Absolute Uncertainty, tcal ± 5°C	± 2.5 ppm

¹ Pulse width not to exceed 40% of period.

² Pulse width uncertainty for periods less than 2 μs are not specified.

TV Trigger Specifications

5520A-SC1100 and 5500A-SC600. TV Trigger is provided at the Scope Output Terminal

Trigger Signal Type	Parameters
Frame Formats	Selectable NTSC, SECAM, PAL, PAL-M
Polarity	Selectable Inverted or Uninverted Video
Amplitude into 50Ω (p-p)	Adjustable 0 to 1.5V p-p into 50Ω load, (±7% accuracy)
Line Marker	Selectable Line Video Marker

Input Impedance Measurement Specifications

5520A-SC1100 and 5500A-SC600

	Range	Uncertainty
Resistance	40Ω to 60Ω	0.1%
	500 kΩ to 1.5 MΩ	0.1%
Capacitance	5 pF - 50 pF	± (5% of input + 0.5 pF) ¹

¹ Measurements made within 30 minutes of capacitance zero reference. Scope option must be selected for at least five minutes prior to capacitance measurement or zero.

Overload Measurement Specifications

5520A-SC1100 and 5500A-SC600. The overload test function applies dc or ac (1 kHz square wave) power into the 50Ω oscilloscope input and monitors the current. A time measurement counter indicates the time duration of the applied overload signal. When the oscilloscope's input protection circuit reacts and opens up the 50Ω load, the calibrator indication is set to "off" on the right hand display. In order to prevent oscilloscope front end damage, a limited amount of energy is applied by a user settable time limit.

Source Voltage	Time Limit dc or 1 kHz ac
5V to 9V	Settable from 1 Sec to 60 Sec
Typical "On" Current Indication	Typical "Off" Current Indication
5V to 9V	Settable from 1 Sec to 60 Sec

External Frequency Reference Input (5520A only)

The External Reference Input selection allows the user to provide their own high stability 10 MHz reference clock for the 5500A-SC300, 5500A-SC600 and 5520A-SC1100 when fitted in a 5520A mainframe. All functions except Wave Generator and Marker greater than 50ms are then referenced to the external 10 MHz signal. The external reference input must be between 1V to 5V p-p.

Uncertainty of output = uncertainty of reference + 5 μHz.

Ordering Information

Ordering Information

- 5500A** Multi-Product Calibrator
- 5500A/3** Multi-Product Calibrator with 300 MHz Oscilloscope Calibration Option
- 5500A/6** Multi-Product Calibrator with 600 MHz Oscilloscope Calibration Option
- 5520A** High-Performance Multi-Product Calibrator
- 5520A/3** High Performance Multi-Product Calibrator with 300 MHz Oscilloscope Calibration Option
- 5520A/6** High Performance Multi-Product Calibrator with 600 MHz Oscilloscope Calibration Option
- 5520A/1 GHz** High Performance Multi-Product Calibrator with 1.1 GHz Oscilloscope Calibration Option

Options*

- 5500A-SC300** 300 MHz/1 ns Oscilloscope Calibration Option
- 5500A-SC600** 600 MHz/300 ps Oscilloscope Calibration Option
- 5520A-SC1100** 1.1 GHz ps Oscilloscope Calibration Option (5520A only)

* SC options must be installed and calibrated at a Fluke Service Center and include report of calibration.

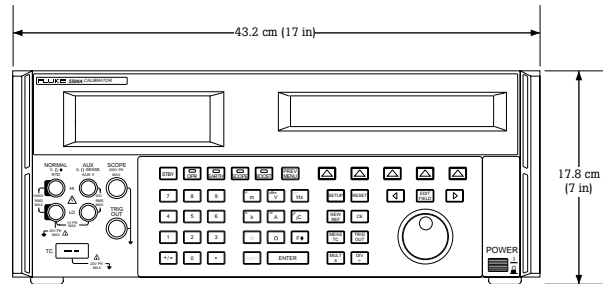
Accessories

- 5500A/COIL** 50-Turn Current Coil
- 5500A/CASE** Roll-Aboard Transit Case
- 5500A/LEADS** Comprehensive Test Lead Kit
- 5800A/TDP** 125 ps Tunnel Diode Pulser
- 5520A/HPROBE** Humidity Measurement Probe
- 5500A/HNDL** Side Carry Handle
- Y5537** Rack Mount Kit
- TC100** Test Cart
- 5725A** Amplifier (5500A Only)
- MET/CAL*** Calibration Software (IEEE and RS232)
- 5500/CAL** Calibration Software (RS232)
- 5800A-7004k** Oscilloscope Cal Cable and Accessory Kit

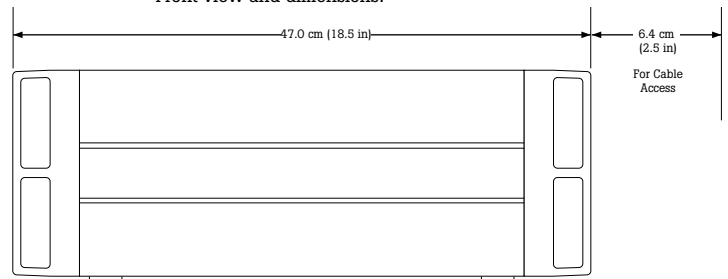
Pressure Modules (5520A only)

- FLUKE-700PCK** Pressure Module Calibration Kit (required)
- FLUKE-700P01** Pressure Module 0-10 IN. H₂O DIFF
- FLUKE-700P02** Pressure Module 0-1 PSID
- FLUKE-700P03** Pressure Module 0-5 PSID
- FLUKE-700P04** Pressure Module 0-15 PSID
- FLUKE-700P05** Pressure Module 0-30 PSIG
- FLUKE-700P06** Pressure Module 0-100 PSIG
- FLUKE-700P07** Pressure Module 0-500 PSIG
- FLUKE-700P08** Pressure Module 0-1000 PSIG
- FLUKE-700P09** Pressure Module 1500 PSIG
- FLUKE-700P22** Pressure Module 0-1 PSID WET
- FLUKE-700P23** Pressure Module 0-5 PSID WET
- FLUKE-700P24** Pressure Module 0-15 PSID WET
- FLUKE-700P29** Pressure Module 3000 PSIG WET
- FLUKE-700P30** Pressure Module 5000 PSIG WET
- FLUKE-700P31** Pressure Module 10000 PSIG WET
- FLUKE-700PA3** Pressure Module 0-5 PSIA
- FLUKE-700PA4** Pressure Module 0-15 PSIA
- FLUKE-700PA5** Pressure Module 0-30 PSIA
- FLUKE-700PA6** Pressure Module 0-100 PSIA
- FLUKE-700PD2** Pressure Module ± 1 PSID
- FLUKE-700PD3** Pressure Module ± 5 PSID

- FLUKE-700PD4** Pressure Module ± 15 PSID
- FLUKE-700PD5** Pressure Module -15+30 PSIG
- FLUKE-700PD6** Pressure Module -15+100 PSIG
- FLUKE-700PD7** Pressure Module -15+200 PSIG
- FLUKE-700PV3** Pressure Module -5 PSID
- FLUKE-700PV4** Pressure Module -15 PSID
- FLUKE-700PMP** Pressure Pump



Front view and dimensions.



Side view and dimensions.

Note: 5500A and 5520A dimensions are the same.

Product Compatibility Chart

Model	5520A-SC1100	5500A-SC600	5500A-SC300
5520A	•	•	•
5500A		•	•
5800A/TDP	•	•	

Fluke. Keeping your world up and running.

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