FLUKE®

Calibration

5080A Multi-Product Calibrator

Calibration solutions for your analog and digital workload

5080A Multi-Product Calibrator:
expanded workload coverage

Calibrate analog and digital meters, and much more

The Fluke 5080A Multi-Product Calibrator calibrates your analog and digital workload accurately and economically. Its high voltage and current compliance makes analog workload calibration easy and precise. And built-in protection circuitry protects it against damaging input voltages.

This easy-to-use instrument calibrates a wide workload that includes:

- **Analog meters**
- **Digital multimeters**
- **Clamp meters (with coil accessory)**
- **Oscilloscopes to 200 MHz (optional)**
- **Panel meters**
- **Watt meters**
- **Megohm meters (optional)**
- **…and more**

Versatile software applications enable you to record paperless results, and more. Best of all, the 5080A offers this versatile functionality at a price that fits nicely into your budget.

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The high compliance 5080A calibrator includes built-in protection and Fluke quality

Accurate, reliable analog meter calibration

The Fluke 5080A calibrator calibrates your analog workload accurately and reliably, thanks to its high voltage and current compliance. With maximum burden up to 800 mA for voltage, and maximum compliance voltage up to 50 V for current, the 5080A can drive a wide range of analog meters.

Options and accessories expand workload coverage

Options and accessories enable you to use the 5080A to calibrate an even broader workload, including:

- **Clamp meters.** The Fluke 9100-200 10/50 turn coil and 5500A/COIL 50-turn current coil enables the 5080A to calibrate most popular clamp meters at currents up to 1000 A rms.
- **Oscilloscopes.** Calibrate oscilloscopes to 200 MHz quickly, easily, and cost effectively. Verify dynamic response, bandwidth, timing, multiple triggering functions, and input resistance.
- **Megohm meters.** This option sources high ohms, high voltage resistors up to 18 GΩ. It also measures voltage and current outputs.

Protective circuits prevent damage

Mains voltage inadvertently applied to a calibrator's output terminals can cause extensive damage, requiring costly repairs. Electrical protection for calibrator outputs is vital for daily operation. The 5080A calibrator's innovative protection circuitry prevents it from being damaged by reversed input voltage, so you can use it with confidence day after day.

Highest voltage and current compliance

The Fluke 5080A has the highest voltage and current compliance of any calibrator in the Fluke multi-product and multifunction families, making it an ideal solution for calibrating analog meters and other instruments requiring higher drive capability for proper operation.

Maximum burden or compliance voltage				
Model	**DC voltage**	**AC voltage**	**DC current**	**AC current***
5080A	600 mA	800 mA	50 V	44 V
9100	20 mA	20 mA	4 V	4 V
5500A	10 mA	10 mA	4.5 V	3 V
5520A	10 mA	10 mA	7 V	5 V
5700A	50 mA	50 mA	10 V	7 V
5720A	50 mA	50 mA	10 V	7 V

* With AC LCOMP ON

Collect and report calibration data consistently and efficiently

Versatile software applications enable automated calibration as well as paperless data collection and reporting.

- **5080/CAL.** The 5080/CAL software is designed for calibrating analog and digital workload with the 5080A calibrator. It enables you to remotely control the 5080A, manage inventory, collect data and print customized reports, easily and economically.
- **MET/CAL® Lite for 5080A.** MET/CAL Lite provides the power of MET/CAL *Plus* software in a lower cost version designed for use with the 5080A.
- **MET/CAL® *Plus*** For the full spectrum of calibration automation and asset management, choose MET/CAL *Plus* software. Add Manual MET/CAL software where automation is not required.

5080A features at a glance

- High compliance
- Protection circuitry
- Calibrates a wide workload, including analog meters and 3.5 and 4.5 digit DMMs
- Optional 5080/CAL software for easy-to-use, automated calibration

Fluke usability and quality are built into the 5080A

1 Control output by pressing separate STBY and OPR Keys.

2 See the difference between the reference value you entered and the value output by the calibrator. The error difference is calculated and displayed in % or ppm.

3 Press the SCOPE key for on-demand oscilloscope calibration (optional).

4 Press the MEG Ω key for on-demand megohm meter calibration (optional).

5 Soft keys allow access to the menus in the control windows, letting you select parameters such as offset, waveforms, or phase. PREV MENU lets you step backward through these menus.

6 SETUP activates setup softkey menus that enable you to perform calibration functions, display 5080A specifications, change parameters, and initiate various utility features.

7 RESET returns the instrument to its power-up state.

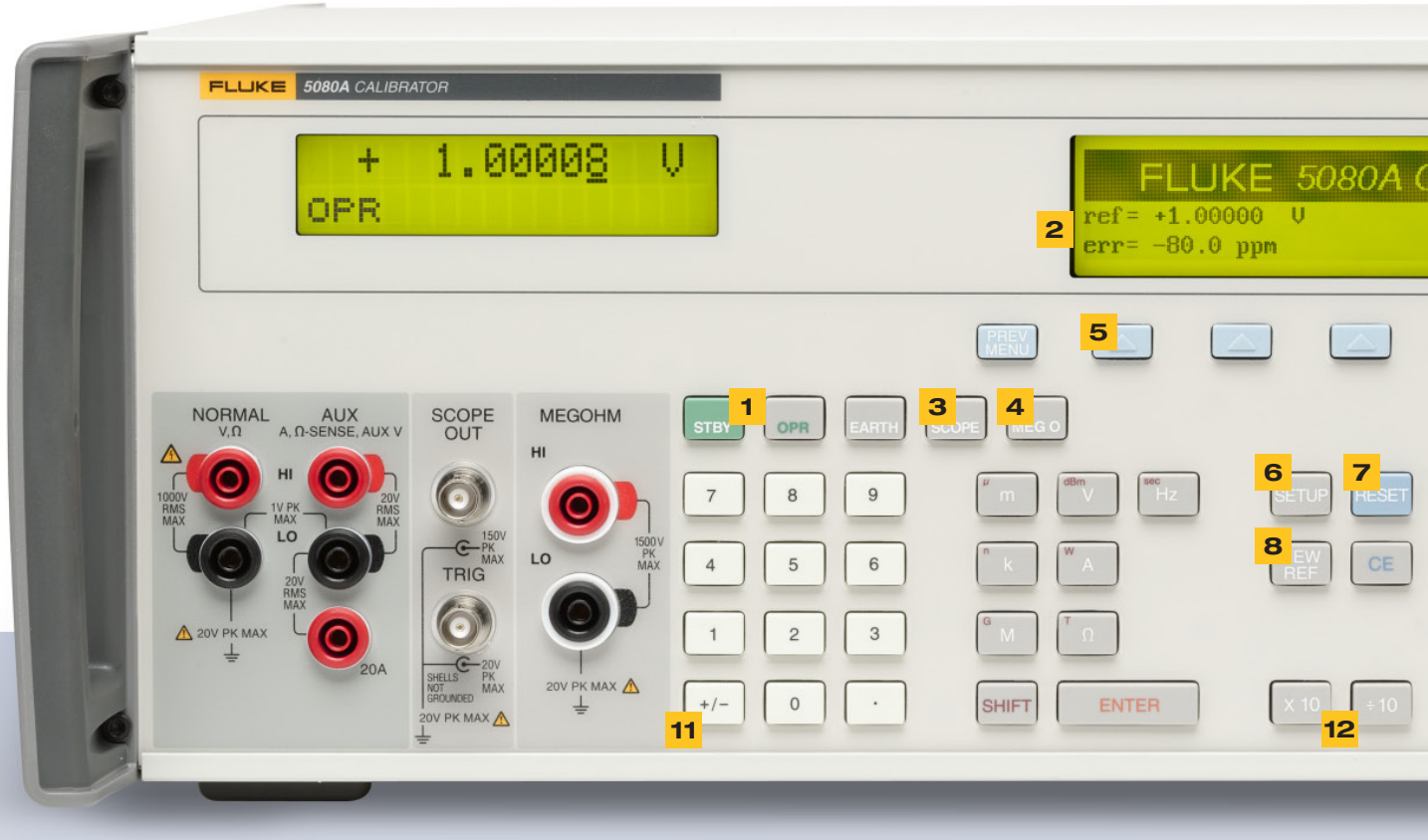
8 NEW REF sets present output as the reference for calculating errors.

9 Control window displays a variety of status messages, softkey menus, and status and other auxiliary information.

10 Edit knob allows you to vary the output. When editing, the difference between the original output and the edited output is automatically computed and displayed in the control window.

11 Calculator-style keypad makes it easy to enter values.

12 MULT [x10] and DIV [÷10] keys simplify stepping up and down in decade multiples of any output setting, and let you step up or down to the next range in a 1–2–5 sequence for oscilloscope calibration.



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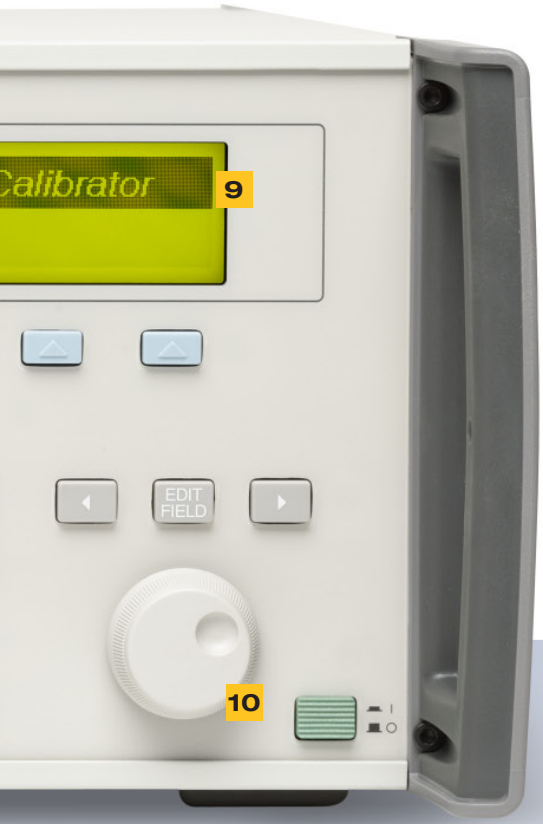
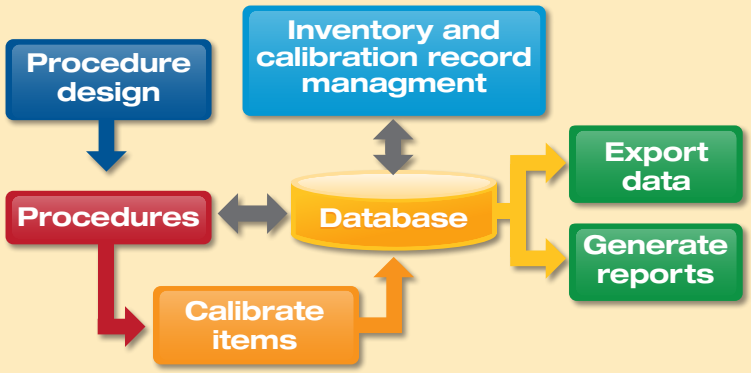


Improve calibration efficiency and throughput with 5080/CAL software

Optional 5080/CAL software is an economical application that enables 5080A remote control, procedure design, record management, data export and customized reporting. Designed for 5080A and its workload, the 5080/CAL is quick to learn and easy to use.



The solutions you need, from the leader in calibration

The Fluke brand is well known around the world for its accurate, dependable, high quality products. Long known as a leader in dc and low frequency ac calibration, Fluke is also recognized for its offerings in rf, temperature, pressure and flow calibration. Fluke provides the calibrators, standards, software, service, support and training you for a complete solution in your cal lab.

Specifications

Voltage and current specifications

Specifications are for 1 year, tcal ± 5 °C

DC voltage			
Range	**Specification (% of output + µV)**	**Resolution**	**Max burden**
0 mV to 329.999 mV	0.013 % + 10	1 µV	60 Ω, output impedance
0 V to 3.29999 V	0.01 % + 15	10 µV	300 mA
0 V to 32.9999 V	0.01 % + 150	100 µV	600 mA
10 V to 101.999 V	0.012 % + 1500	1 mV	300 mA
30 V to 329.999 V	0.012 % + 1500	1 mV	120 mA
100 V to 1020.00 V	0.012 % + 5500	10 mV	40 mA

DC current*			
Range	**Specification (% of output + µA)**	**Resolution**	**Maximum compliance voltage**
0 µA to 329.99 µA	0.075 % + 0.1	10 nA	9 V
0 mA to 3.2999 mA	0.065 % + 0.25	0.1 µA	9 V
0 mA to 32.999 mA	0.05 % + 1.25	1 µA	50 V
0 mA to 329.99 mA	0.05 % + 16.5	10 µA	35 V
0 A to 1.0999 A (in 3 A range)	0.15 % + 220	100 µA	6 V
1.1 A to 2.9999 A	0.19 % + 220	100 µA	6 V
0 A to 10.999 A (in 20 A range)	0.25 % + 2500	1 mA	4 V
11 A to 20.500 A	0.5 % + 3750	1 mA	4 V

*Maximum inductive load: 2.5 H

AC voltage sine wave				
Range	**Frequency**	**Specification (% of output + µV)**	**Resolution**	**Max burden**
1.00 mV to 32.99 mV	45 Hz to 65 Hz	0.33 % + 60	10 µV	60 Ω, output impedance
	65 Hz to 1 kHz	0.34 % + 60		
33 mV to 329.99 mV	45 Hz to 65 Hz	0.15 % + 60	10 µV	60 Ω, output impedance
	65 Hz to 1 kHz	0.16 % + 60		
0.33 V to 3.2999 V	45 Hz to 65 Hz	0.10 % + 180	100 µV	300 mA
	65 Hz to 1 kHz	0.11 % + 180		
3.3 V to 32.999 V	45 Hz to 65 Hz	0.10 % + 1800	1 mV	800 mA
	65 Hz to 1 kHz	0.12 % + 1800		
33 V to 101.99 V	45 Hz to 65 Hz	0.14 % + 18000	10 mV	400 mA
	65 Hz to 1 kHz	0.15 % + 18000		
102 V to 329.99 V	45 Hz to 65 Hz	0.14 % + 18000	10 mV	120 mA
	65 Hz to 1 kHz	0.15 % + 18000		
330 V to 1020.0 V	45 Hz to 65 Hz	0.14 % + 180000	100 mV	40 mA
	65 Hz to 1 kHz	0.15 % + 180000		

AC current sine wave[1]			
Range	**Frequency**	**Specifications (% of output + µA)**	**Maximum compliance voltage[2]**
29.0 µA to 329.9 µA	45 Hz to 65 Hz	0.25 % + 0.75	3.3 V
	65 Hz to 1 kHz	0.26 % + 0.75	
0.33 mA to 3.2999 mA	45 Hz to 65 Hz	0.22 % + 0.9	6.5 V
	65 Hz to 1 kHz	0.23 % + 0.9	
3.3 mA to 32.999 mA	45 HZ to 65 Hz	0.10 % + 12	44 V
	65 Hz to 1 kHz	0.19 % + 12	
33 mA to 329.99 mA	45 Hzto 65 Hz	0.10 % + 120	25 V
	65 Hz to 1 kHz	0.19 % + 120	
0.33 A to 1.0999 A	45 Hz to 65 Hz	0.10 % + 1200	4 V
	65 Hz to 1 kHz	0.24 % + 1200	
1.1 A to 2.9999 A	45 Hz to 65 Hz	0.10 % + 1500	4 V
	65 Hz to 1 kHz	0.28 % + 1500	
3.0 A to 10.999 A	45 Hz to 65 Hz	0.25 % + 6000	3 V
	65 Hz to 1 kHz	0.40 % + 6000	
11 A to 20.500 A	45 Hz to 65 Hz	0.50 % + 15000	3 V
	65 Hz to 1 kHz	0.52 % + 15000	

[1]Maximum lnductive load: 2.5 H; [2]LCOMP ON, used to drive inductive loads, available for 45–65 Hz

Resistance, power and frequency specifications

Specifications are for 1 year, tcal ± 5 °C

Resistance		
Range	Specification % of output or Ω	Maximum peak current
0 Ω	0.01 Ω	220 mA
1 Ω	1.0 %	220 mA
1.9 Ω	0.5 %	220 mA
10 Ω	0.15 %	220 mA
19 Ω	0.1 %	160 mA
100 Ω	0.04 %	70 mA
190 Ω	0.04 %	50 mA
1000 Ω	0.025 %	22 mA
1.9 kΩ	0.025 %	16 mA
10 kΩ	0.025 %	3 mA
19 kΩ	0.029 %	1.6 mA
100 kΩ	0.038 %	0.3 mA
190 kΩ	0.042 %	0.16 mA
1 MΩ	0.04 %	30 µA
1.9 MΩ	0.04 %	16 µA
10 MΩ	0.1 %	3 µA
19 MΩ	0.15 %	1.6 µA
100 MΩ	0.5 %	300 nA
190 MΩ	1.0 %	160 nA

DC power				
Voltage range	Current range			
	0.33 mA to 3.2999 mA	3.3 mA to 329.99 mA	0.33 A to 2.9999 A	3 A to 20.5 A
	± (% of watts output)			
33 mV to 1020 V	0.15	0.11	0.22	0.54

AC power*				
Voltage range	Current range			
	3.3 mA to 8.9999 mA	9 mA to 32.999 mA	33 mA to 89.99 mA	90 mA to 329.99 mA
	Specifications, 45 Hz to 65 Hz, PF = 1, ± (% of watts output)			
33 mV to 329.999 mV	0.58	0.45	0.58	0.45
330 mV to 1020 V	0.51	0.36	0.51	0.36
Voltage range	Current range			
	0.33 A to 0.899 A	0.9 A to 2.199 A	2.2 A to 4.499 A	4.5 A to 20.5 A
	Specifications, 45 Hz to 65 Hz, PF = 1, ± (% of watts output)			
33 mV to 329.999 mV	0.59	0.46	0.56	0.72
330 mV to 1020 V	0.52	0.37	0.49	0. 67

*Phase adjustment range for dual ac outputs is 0° to ± 179.9°

Frequency		
Frequency range	Resolution	Specifications, tcal
45.00 Hz to 119.99 Hz	0.01 Hz	0.0050 % ± 2 mHz
120.0 Hz to 1000.0 Hz	0.1 Hz	

General specifications

Standard interfaces	RS-232 and ethernet
Temperature	Operating : 0 °C to 50 °C
	Calibration (tcal): 15 °C to 35 °C
	Storage: -20 °C to +70 °C
Relative humidity	Operating: <80 % to 30 °C <70 % to 40 °C <40 % to 50 °C
	Storage <95 %, non-condensing
Altitude	Operating: 2,000 m (6,500 ft) maximum
	Non-operating: 12,200 m (40,000 ft) maximum
Safety	Meets EN 61010-1:2001, CAN/CSA-C22.2 No. 61010-1-04, UL 61010-1:2004
Analog low isolation	20 V
EMC	Meets EN 61326-1:2006
Power consumption	600 VA
Dimensions (D x W x H)	53.8 cm x 43.2 cm x 44.3 cm x 19.3 cm (including handles) (21.2 in x 17 in x 17.5 in x 7.6 in)
Weight	22 kg (48 lb)

Option specifications

MegOhm option insulation resistance		
Function	Range	Best one year specification
Resistance	10 kΩ to 10 GΩ, plus 18 GΩ single value	0.20 %
Voltage	0 V to 1575 V dc peak	1 %

MegOhm option continuity		
Function	Range	Best one year specification
Resistance	1 Ω to 5.9 kΩ (16 values)	0.1 %
Current	700 mA max	1.2 %

Oscilloscope option		
Function	Range	Best one year specification
DC voltage	0 V to ± 2.2 V (50 Ω)	± 0.35 %
	0 V to ± 33 V (1 MΩ)	
AC voltage squarewave	± 1.8 mV to ± 2.2 V p-p (50 Ω)	± 0.35 %
	± 1.8 mV to ± 105 V p-p (1 MΩ)	
Fast edge	4.5 mV to 2.75 V p-p (50 Ω)	<1 ns rise time
Leveled sinewave	50 kHz to 200 MHz	± 1.5 % flatness
Time markers	5 s to 2 ns	± 5 ppm

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Ordering information

Models

5080A	Multi-product calibrator
5080A/MEG	Calibrator with megohm meter calibration option
5080A/SC	Calibrator with oscilloscope calibration option
5080A/SC/MEG	Calibrator with megohm meter and oscilloscope calibration option

Accessories

9100-200	10/50 turn coils
5500A/COIL	50 turn coil
5080A/CASE	Transit case with wheels

Software

5080/CAL	5080/CAL calibration software
5080A/WS1[1]	Calibrator with MET/CAL® Lite software

Value-added services

Gold CarePlan[2]	Priority extended warranties and annual calibration services
Silver CarePlan[2]	Extended warranties with calibration on repair

Option upgrades[3]

5080A → 5080A/MEG

5080A → 5080A/SC

5080A → 5080A/SC/MEG

[1] MET/CAL Lite is also available for 5080A/MEG, 5080A/SC, and 5080A/SC/MEG
[2] Select from plans up to 5 years, with standard or accredited calibration.
[3] Installable only at Fluke service centers for extra calibration and installation cost.

Fluke Calibration.

Precision, performance, confidence.™

- Electrical
- RF
- Temperature
- Pressure
- Flow
- Software

Fluke Calibration
PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: http://www.fluke.com

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Fluke Calibration provides the broadest range of calibrators and standards, software, service, support and training in electrical, rf, temperature, pressure and flow calibration.

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