2460

SourceMeter® SMU Instrument
100 Watts, 7 Amps

The Model 2460 High Current SourceMeter® Source Measure Unit (SMU) Instrument brings advanced Touch, Test, Invent® technology right to your fingertips. It combines an innovative graphical user interface (GUI) with capacitive touchscreen technology to make testing intuitive and minimize the learning curve to help engineers and scientists learn faster, work smarter, and invent easier. With its 7A DC and pulse current capability, the Model 2460 is optimized for characterizing and testing high power materials, devices, and modules such as silicon carbide (SiC), gallium nitride (GaN), DC-DC converters, power MOSFETs, solar cells and panels, LEDs and lighting systems, electrochemical cells and batteries, and much more. These new capabilities, combined with Keithley's decades of expertise in developing high precision, high accuracy SMU instruments, will make the Model 2460 a "go-to instrument" for high current applications in the lab and in the rack for years to come.

- **One tightly coupled instrument that combines capabilities from analyzers, curve tracers, and I-V systems at a fraction of their cost**

- **Wide coverage up to 105V, 7A DC/7A pulse, 100W max.**

- **Five-inch, high resolution capacitive touchscreen GUI**

- **0.012% basic measure accuracy with 6½-digit resolution**

- **Source and sink (4-quadrant) operation**

- **Four "Quickset" modes for fast setup and measurements**

- **Context-sensitive help function**

- **Front panel input banana jacks; rear panel input mass termination screw connections**

- **2460 SCPI and TSP® scripting programming modes**

- **Front-panel USB 2.0 memory I/O port for transferring data, test scripts, or test configurations**

Learn Faster, Work Smarter, Invent Easier

The Model 2460 features a five-inch, full-color, high resolution touchscreen that supports intuitive operation, helps operators become familiar with the instrument quickly, and optimizes overall speed and productivity. A simple icon-based menu structure reduces the number of steps required to configure a test by as much as 50 percent and eliminates the cumbersome multi-layer menu structures typically used on soft-key instruments. Built-in, context-sensitive help supports intuitive operation and minimizes the need to review a separate manual. These capabilities, combined with the Model 2460's high versatility, simplify its operation in both basic and advanced measurement applications, regardless of the user's previous experience in working with SMU instruments.

2460 main home screen
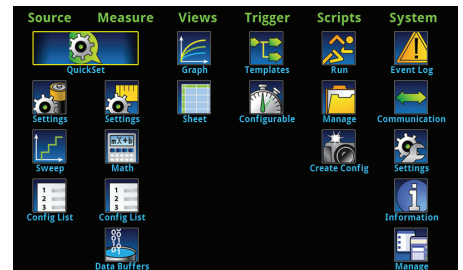
The Model 2460's icon-based menu structure helps even novice users configure tests quickly and confidently.
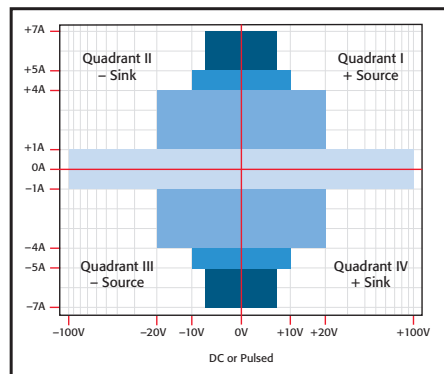
Model 2460 power envelope.

All-in-One SMU Instrument

The Model 2460, built on the fourth generation of the award-winning SourceMeter SMU platform, leverages the proven capabilities of previously introduced high current SMU instruments from Keithley, including the Models 2420, 2425, and 2440. It offers a highly flexible, four-quadrant voltage and current source/load coupled with precision voltage and current measurements. This all-in-one instrument can be used as a:

- Precision power supply with V and I readback
- True current source
- Digital multimeter (DCV, DCI, ohms, and power with 6½-digit resolution)
- Precision electronic load
- Trigger controller

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Ordering Information

2460 100V, 7A, 100W SourceMeter Instrument

2460-NFP 100V, 7A, 100W SourceMeter Instrument, with No Front Panel

2460-RACK 100V, 7A, 100W SourceMeter Instrument, without Handle

2460-NFP-RACK 100V, 7A, 100W SourceMeter Instrument, with No Front Panel and No Handle

Accessories Supplied

2460-KIT Rear Panel Mating Mass Terminated Screw Connector

8608 High Performance Test Leads

USB-B-1 USB Cable, Type A to Type B, 1m (3.3 ft)

CS-1616-3 Safety Interlock Mating Connector

CA-180-3A TSP-Link/Ethernet Cable

Documentation CD

2460 QuickStart Guide

Test Script Builder Software (available at www.keithley.com)

KickStart Startup Software (available at www.keithley.com)

LabVIEW and IVI Drivers (available at www.keithley.com)

Model 2420/2425/2440	Model 2460
Max Voltage: 60V/100V/40V	Max Voltage: 100V
Max Current: 3A/3A/5A	Max Current: 7A
DC Power: 60W/100W/50W	DC Power: 100W
Wideband Noise: 10mVrms ttyp.	Wideband Noise: 2mVrms typ.
Sweep Types: Linear, Log, Custom, Source-Memory	Sweep Types: Linear, Log, Dual Linear, Dual Log, Custom
5000 Point Reading Buffer	>250,000 Point Reading Buffer
>2000 Readings/second	>3000 Readings/second
SCPI Programming	SCPI Programming + TSP Scripting
GPIB, RS-232	GPIB, USB, Ethernet (LXI)
Front/Rear Banana Jacks	Front: Banana Jacks Rear: Mass Screw Terminal Connection

**Comparison of Models 2420, 2425, and 2440 with Model 2460.**

Ease of Use Beyond the Touchscreen

In addition to its advanced touchscreen, the Model 2460's front panel offers a variety of features that enhance its speed, user-friendliness, and learnability, including a USB 2.0 memory I/O port, a HELP key, a rotary navigation/control knob, a front/rear input selector button, and banana jacks for basic bench applications. The USB 2.0 memory port simplifies storing test results and instrument configurations, uploading test scripts into the instrument, and installing system upgrades. All front-panel buttons are backlit to enhance visibility in low-light environments.

5″ color graphical touchscreen display

Online HELP key

USB 2.0 memory I/O

Rotary navigation/control knob

Front/rear input selector
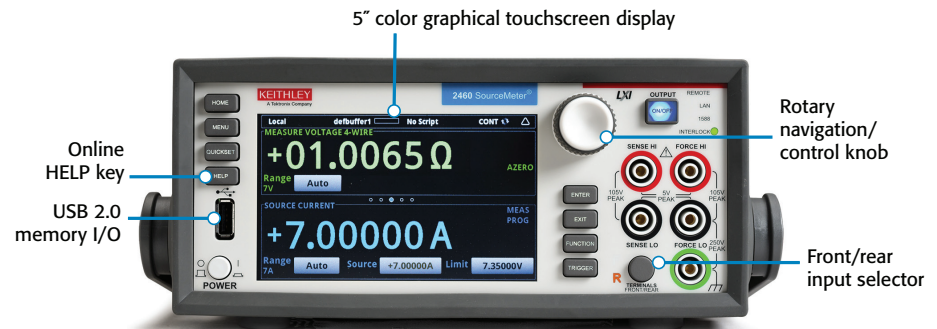
The Model 2460's high resolution, capacitive touchscreen and front panel controls allow for intuitive operation, even by novice users.

Four "Quickset" modes simplify instrument setup. With one touch, the instrument can be quickly configured for various operating modes without the need to configure the instrument indirectly for this operation.
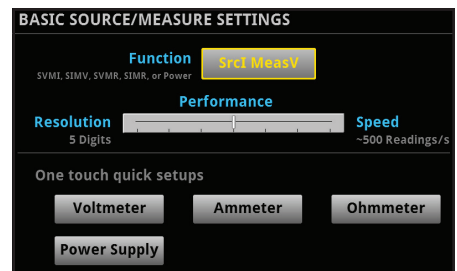

One-touch Quickset modes speed measurement setups and minimize the time to measurements.

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Comprehensive Built-in Connectivity

Rear panel access to rear-input mass termination connector, remote control interfaces (GPIB, USB 2.0, and LXI/Ethernet), D-sub 9-pin digital I/O port (for internal/external trigger signals and handler control), instrument interlock control, and TSP-Link® jacks make it simple to configure multiple instrument test solutions and eliminate the need to invest in additional adapter accessories.
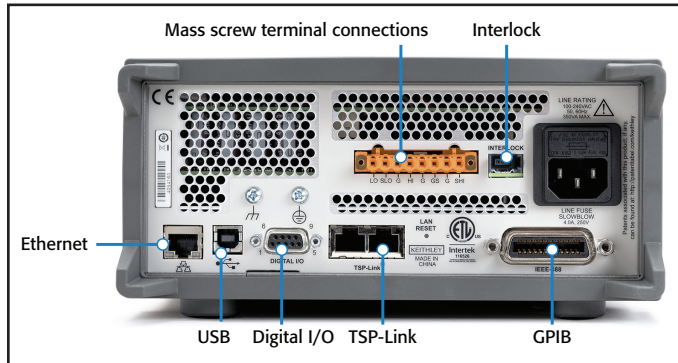
Model 2460 rear panel connections are optimized to maintain signal integrity and speed system setup.

Convert Raw Data to Information

A full graphical plotting window converts raw data and displays it immediately as useful information, such as semiconductor I-V curves and voltammograms. Using the Model 2460's Sheet view, test data can also be displayed in tabular form. The instrument supports exporting data to a spreadsheet for further analysis, dramatically improving productivity for research, benchtop testing, device qualification, and debugging.

TriggerFlow® Building Blocks for Instrument Control and Execution

The Model 2460 incorporates Keithley's TriggerFlow triggering system, which provides user control over instrument execution. TriggerFlow diagrams are created in much the same way that flow charts are developed, using four fundamental building block types:

- Wait – Waits for an event to occur before the flow continues
- Branch – Branches when a condition has been satisfied
- Action – Initiates an action in the instrument, for example, measure, source, delay, set digital I/O, etc.
- Notify – Notifies other equipment that an event has occurred

A TriggerFlow model using a combination of these building blocks can be created from the front panel or by sending remote commands. With the TriggerFlow system, users can build triggering models from very simple to complex with up to 255 block levels. The Model 2460 also includes basic triggering functions, including immediate, timer, and manual triggering.
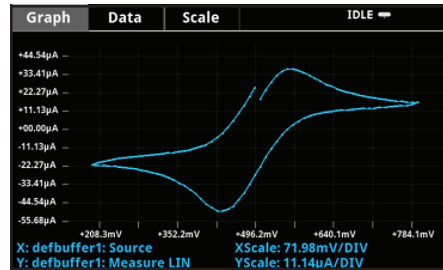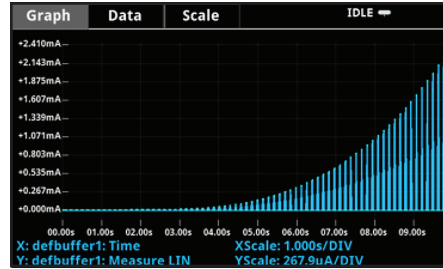
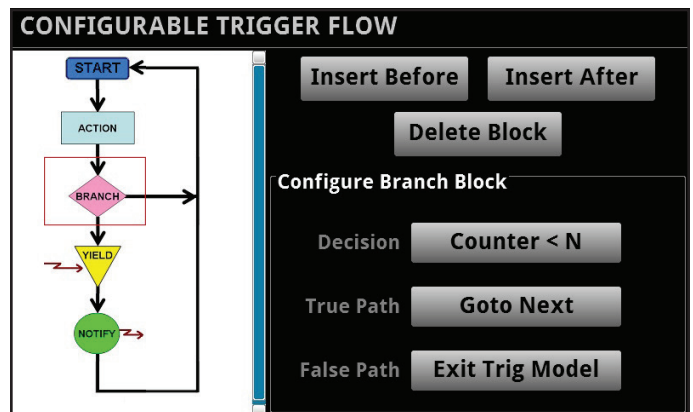

Built-in data display, charting, and spreadsheet export functions simplify converting test results into useful information.

TriggerFlow building blocks allow creating triggering models that range from very simple to highly complex.

Unmatched System Integration and Programming Flexibility

When a Model 2460 is configured into a multi-channel I-V test system, its embedded Test Script Processor (TSP®) allows it to run test scripts, so users can create powerful measurement applications with significantly reduced development times. TSP technology also offers channel expansion without a mainframe. Keithley's TSP-Link® channel expansion bus, which uses a 100 Base T Ethernet cable, can connect multiple Model 2460s and other TSP instruments such as Keithley's Model 2450 SourceMeter SMU Instruments, Series 2600B System SourceMeter SMU instruments, and Series 3700A Switch/Multimeter systems in a master-slave configuration that operates as one integrated system. The TSP-Link expansion bus supports up to 32 units per GPIB or IP address, making it easy to scale a system to fit an application's particular requirements. The Model 2460 also includes a SCPI programming mode that takes advantage of all of the instrument's capabilities.

Parallel Test Capability

The TSP technology in the Model 2460 supports testing multiple devices in parallel to meet the needs of device research, advanced semiconductor lab applications, and even high throughput production test. This parallel testing capability allows each instrument in the system to run its own complete test sequence, creating a fully multi-threaded test environment. The number of tests that can be run in parallel on a Model 2460 can be as high as the number of instruments in the system.

Free Instrument Control Start-up Software

The Model 2460 comes with KickStart instrument control/start-up software, which lets users start taking measurements in minutes without programming. In most cases, users merely need to make some quick measurements, graph the data, and store the data to disk for later analysis in software environments such as Excel. KickStart offers:

- Instrument configuration control to perform I-V characterization
- Native X-Y graphing, panning, and zooming
- Spreadsheet/tabular viewing of data
- Saving and exporting data for further analysis
- Saving of test setups
- Screenshot capturing of graph
- Annotation of tests
- Command line dialog for sending and receiving data
- HTML help
- GPIB, USB 2.0, Ethernet compliance

Simplified Programming with Ready-to-Use Instrument Drivers

For those who prefer to create their own customized application software, native National Instruments LabVIEW® drivers, as well as IVI-C and IVI-COM drivers are available at **www.keithley.com**.

TYPICAL APPLICATIONS

Ideal for current/voltage characterization and functional test of a wide range of modern electronic devices:

- **Power semiconductors and materials**
  - **SiC, GaN**
  - **IBGTs**
  - **Power MOSFETs**
  - **Thyristors**
- **Power devices**
  - **Telecom power management chipsets**
  - **DC-DC converters**
- **Electrochemistry**
  - **Galvanic cycling**
  - **Cyclic voltammetry**
  - **Electro-deposition**
- **Energy generation**
  - **Solar cells**
  - **Batteries**
- **Efficient energy consumption**
  - **LEDs/AMOLEDs**
  - **Automotive modules**
  - **Power management modules**
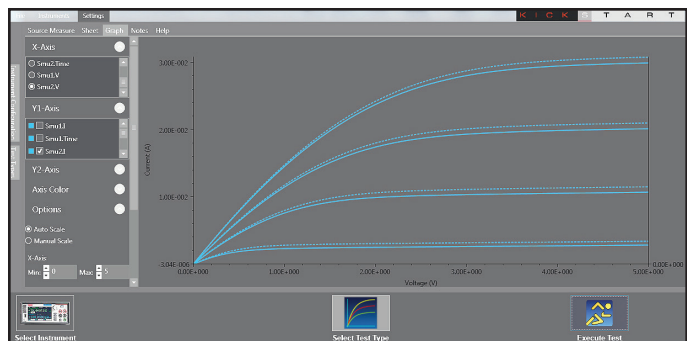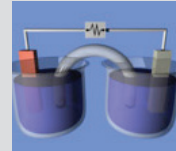
KickStart start-up software lets users be ready to take measurements in minutes.

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ACCESSORIES AVAILABLE

TEST LEADS AND PROBES

1754	2-wire Universal 10-Piece Test Lead Kit
5805	Kelvin (4-Wire) Spring-Loaded Probes
5808	Low Cost Single-pin Kelvin Probe Set
5809	Low Cost Kelvin Clip Lead Set
8605	High Performance Modular Test Leads
8606	High Performance Modular Probe Kit
8608	High Performance Clip Lead Set

CABLES, CONNECTORS, ADAPTERS

2460-BAN	Screw Terminal Connector to Banana Cable
2460-KIT	Mating Mass Termination Connector
8607	2-Wire, 1000V Banana Cables, 1m (3.3 ft.)
CS-1616-3	Safety Interlock Mating Connector

COMMUNICATION INTERFACES & CABLES

7007-1	Shielded GPIB Cable, 1m (3.3 ft)
7007-2	Shielded GPIB Cable, 1m (6.6 ft)
CA-180-3A	CAT5 Crossover Cable for TSP-Link/Ethernet
KPCI-488LPA	IEEE-488 Interface for PCI Bus
KUSB-488B	IEEE-488 USB-to-GPIB Interface Adapter
USB-B-1	USB Cable, Type A to Type B, 1m (3.3 ft)

TRIGGERING AND CONTROL

2450-TLINK	DB-9 to Trigger Link Connector Adapter.
8501-1	Trigger Link Cable, DIN-to-DIN, 1m (3.3 ft)
8501-2	Trigger Link Cable, DIN-to-DIN, 2m (6.6 ft)

RACK MOUNT KITS

4299-8	Single Fixed Rack Mount Kit
4299-9	Dual Fixed Rack Mount Kit
4299-10	Dual Fixed Rack Mount Kit. Mount one 2460 and one Series 26xxB
4299-11	Dual Fixed Rack Mount Kit. Mount one 2460 and one Series 2400, Series 2000, etc.
2450-BenchKit	Ears and Handle for 2460-NFP-RACK and 2460-RACK models

SERVICES AVAILABLE

2460-3Y-EW	1 Year Factory Warranty extended to 3 years from date of shipment
2460-5Y-EW	1 Year Factory Warranty extended to 5 years from date of shipment
C/2460-3Y-17025	KeithleyCare® 3 Year ISO 17025 Calibration Plan
C/2460-3Y-DATA	KeithleyCare 3 Year Calibration w/Data Plan
C/2460-3Y-STD	KeithleyCare 3 Year Std. Calibration Plan
C/2460-5Y-17025	KeithleyCare 5 Year ISO 17025 Calibration Plan
C/2460-5Y-DATA	KeithleyCare 5 Year Calibration w/Data Plan
C/2460-5Y-STD	KeithleyCare 5 Year Std. Calibration Plan
C/NEW DATA	Calibration Data for New Units
C/NEW DATA ISO	ISO-17025 Calibration Data for New Units

Voltage Specifications [1, 2]

		Source			Measure [3]		
Range	Max. Current	Reso-lution	Accuracy (23° ±5°C), 1 Year ±(% setting+volts)	Noise (RMS) (<10Hz)	Reso-lution[4]	Input Resistance	Accuracy (23° ±5°C), 1 Year ±(% rdg. + volts)
200.0000 mV	7.35 A	5 μV	0.015 % + 200 μV	1 μV	100 nV	>10 GΩ	0.012 % + 200 μV
2.000000 V	7.35 A	50 μV	0.015 % + 300 μV	10 μV	1 μV	>10 GΩ	0.012 % + 300 μV
7.000000 V	7.35 A	250 μV	0.015 % + 2.4 mV	100 μV	1 μV	>10 GΩ	0.015 % + 1 mV
10.00000 V	5.25 A	500 μV	0.015 % + 2.4 mV	100 μV	10 μV	>10 GΩ	0.015 % + 1 mV
20.00000 V	4.20 A	500 μV	0.015 % + 2.4 mV	100 μV	10 μV	>10 GΩ	0.015 % + 1 mV
100.0000 V	1.05 A	2.5 mV	0.015 % + 15 mV	1 mV	100 μV	>10 GΩ	0.015 % + 5 mV

Current Specifications [1, 2, 5]

		Source			Measure [3]		
Range	Max. Voltage	Reso-lution	Accuracy (23° ±5°C), 1 Year ±(% setting + amps)	Noise (RMS) (<10Hz)	Reso-lution[4]	Voltage Burden [6]	Accuracy (23° ±5°C), 1 Year ±(% rdg. + amps)
1.000000 μA	105 V	50 pA	0.025 % + 1 nA	40 pA	10 pA	<100 μV	0.025 % + 700 pA
10.00000 μA	105 V	500 pA	0.025 % + 1.5 nA	40 pA	10 pA	<100 μV	0.025 % + 1 nA
100.0000 μA	105 V	5 nA	0.020 % + 15 nA	100 pA	100 pA	<100 μV	0.020 % + 10 nA
1.000000 mA	105 V	50 nA	0.020 % + 150 nA	1 nA	1 nA	<100 μV	0.020 % + 100 nA
10.00000 mA	105 V	500 nA	0.020 % + 1.5 μA	10 nA	10 nA	<100 μV	0.020 % + 1 μA
100.0000 mA	105 V	5 μA	0.020 % + 15 μA	100 nA	100 nA	<100 μV	0.020 % + 10 μA
1.000000 A	105 V	50 μA	0.050 % + 750 μA	5 μA	1 μA	<100 μV	0.050 % + 500 μA
4.000000 A	21 V	250 μA	0.100 % + 3 mA	25 μA	1 μA	<100 μV	0.100 % + 2.5 mA
5.000000 A	10.5 V	250 μA	0.100 % + 3 mA	25 μA	1 μA	<100 μV	0.100 % + 2.5 mA
7.000000 A	7.35 V	500 μA	0.150 % + 6 mA	125 μA	1 μA	<100 μV	0.150 % + 5 mA

TEMPERATURE COEFFICIENT (0°–18°C and 28°–50°C): ±(0.10 × accuracy specification)/°C.

1. Speed = 1 PLC.
2. All specifications are guaranteed with output ON.
3. Accuracies apply to 2- and 4-wire mode when properly zeroed.
4. 6.5-digit measure resolution.
5. Accuracy specifications guaranteed when using 2460-KIT screw terminal accessory.
6. Four-wire mode.

Resistance Measurement Accuracy (Local or Remote Sense) [7, 8, 9]

Range	Default Resolution [10]	Default Test Current	Normal Accuracy (23°C ±5°C) 1 Year, ±(% rdg. + ohms)	Enhanced Accuracy [11] (23°C ±5°C) 1 Year, ±(% rdg. + ohms)
<2.000000 Ω [12]	1 $\mu\Omega$	User defined	Source I$_{ACC}$ + Meas. V$_{ACC}$	Meas. I$_{ACC}$ + Meas. V$_{ACC}$
20.00000 Ω	10 $\mu\Omega$	100 mA	0.05 % + 0.003 Ω	0.04 % + 0.001 Ω
200.0000 Ω	100 $\mu\Omega$	10 mA	0.05 % + 0.03 Ω	0.04 % + 0.01 Ω
2.000000 kΩ	1 mΩ	1 mA	0.05 % + 0.3 Ω	0.04 % + 0.1 Ω
20.00000 kΩ	10 mΩ	100 μA	0.05 % + 3 Ω	0.04 % + 1 Ω
200.0000 kΩ	100 mΩ	10 μA	0.05 % + 30 Ω	0.05 % + 10 Ω
2.000000 MΩ	1 Ω	10 μA	0.06 % + 100 Ω	0.06 % + 50 Ω
20.00000 MΩ	10 Ω	1 μA	0.14 % + 1000 Ω	0.12 % + 500 Ω
>20.0000 MΩ [12]	—	User defined	Source I$_{ACC}$ + Meas. V$_{ACC}$	Meas. I$_{ACC}$ + Meas. V$_{ACC}$

TEMPERATURE COEFFICIENT (0°–18°C and 28°–50°C): ±(0.10 × accuracy specification)/°C.

SOURCE CURRENT, MEASURE RESISTANCE MODE:
Total uncertainty = I source accuracy + V measure accuracy (4-wire remote sense).

SOURCE VOLTAGE, MEASURE RESISTANCE MODE:
Total uncertainty = V source accuracy + I measure accuracy (4-wire remote sense).

7. Speed = 1 PLC.
8. All specifications are guaranteed with output ON.
9. Accuracies apply to 2- and 4-wire mode when properly zeroed.
10. 6.5-digit measure resolution.
11. Source readback enabled. Offset compensation ON.
12. Source current, measure resistance or source voltage, measure resistance only.

SUPPLEMENTAL CHARACTERISTICS

MAX. OUTPUT POWER:	100W, four-quadrant source or sink operation.
SOURCE LIMITS:	**Vsource:** ±7.35V (≤7A range), ±10.5V (≤5A range), ±21V (≤4A range), ±105V (≤1A range). **Isource:** ±7.35A (≤7V range), ±5.25mA (≤10V range), ±4.2A (≤20V range), ±1.05mA (≤ 100V range).
OVERRANGE:	105% of range, source and measure.
REGULATION:	**Voltage: Line:** 0.01% of range. **Load:** 0.01% of range + 100μV. **Current: Line:** 0.01% of range. **Load:** 0.01% of range + 100pA.
SOURCE LIMITS:	**Voltage Source Current Limit:** Bipolar current limit set with single value. Min. 10% of range. **Current Source Voltage Limit:** Bipolar voltage limit set with single value. Min. 10% of range.
V-LIMIT / I-LIMIT ACCURACY:	Add 0.3% of setting and ±0.02% of reading to base specification.
OVERSHOOT:	**Voltage Source:** <0.1% typical (full scale step, resistive load, 20V range, 10mA I-Limit. **Current Source:** <0.1% typical (1mA step, R_{Load} = 10kΩ, 20V range)
RANGE CHANGE OVERSHOOT:	Overshoot into a fully resistive 100kΩ load, 10Hz to 20MHz BW, adjacent ranges: <250mV typical
OUTPUT SETTLING TIME:	Time required to reach 0.1% of final value, 20V range, 100mA I-Limit: <200μs typical.
MAXIMUM SLEW RATE:	1V per μs, 100V range, 100mA limit into a 20kΩ load (typical). 0.6V per μs, 20V range, 100mA limit into a 20kΩ load (typical).
OVER VOLTAGE PROTECTION:	User selectable values, 5% ±0.5V tolerance. Factory default = none.
VOLTAGE SOURCE NOISE:	**10Hz–20MHz (RMS):** <4.5mV typical into a resistive load.
COMMON MODE VOLTAGE:	250V DC.
COMMON MODE ISOLATION:	>1GΩ, <1000pF.
NOISE REJECTION (TYPICAL):	

NPLC	NMRR	CMRR
0.01	—	60 dB
0.1	—	60 dB
1	60 dB	100 dB

LOAD IMPEDANCE:	**Normal Mode:** 20nF typical. **High Capacitance Mode:** Stable into 50μF typical. High-C mode valid for ≥100μA ranges.
MAX. VOLTAGE DROP BETWEEN FORCE and SENSE TERMINALS:	5V.
MAX. SENSE LEAD RESISTANCE:	1MΩ for rated accuracy.
SENSE INPUT IMPEDANCE:	>10GΩ.
GUARD OFFSET VOLTAGE:	<300μV, typical

System Measurement Speeds [13]

Reading rates (readings per second) typical for 60Hz (50Hz), script (TSP®) programmed

NPLC	Trigger Origin	Measure to Memory	Measure to GPIB/USB/LAN	Source Measure to Memory	Source Measure to GPIB/USB/LAN
0.01 NPLC	Internal	3050 (2800)	2800 (2500)	1700 (1600)	1650 (1550)
0.01 NPLC	External	2300 (2100)	2150 (2000)	1650 (1550)	1600 (1450)
0.1 NPLC	Internal	540 (460)	530 (450)	470 (410)	470 (400)
0.1 NPLC	External	500 (420)	500 (420)	460 (390)	450 (350)
1 NPLC	Internal	59 (49)	59 (49)	58 (48)	58 (48)
1 NPLC	External	58 (48)	58 (48)	57 (48)	57 (46)

Reading rates (readings per second) typical for 60Hz (50Hz), SCPI programmed

NPLC	Trigger Origin	Measure to Memory	Measure to GPIB/USB/LAN	Source Measure to Memory	Source Measure to GPIB/USB/LAN
0.01 NPLC	Internal	3000 (2800)	3000 (2790)	1700 (1600)	1550 (1500)
0.01 NPLC	External	2330 (2150)	2330 (2150)	1650 (1550)	1500 (1450)
0.1 NPLC	Internal	540 (460)	540 (460)	470 (410)	460 (400)
0.1 NPLC	External	510 (430)	510 (430)	470 (400)	460 (390)
1 NPLC	Internal	59 (49)	59 (49)	58 (48)	58 (48)
1 NPLC	External	58 (49)	58 (49)	58 (48)	58 (48)

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GENERAL CHARACTERISTICS (default mode unless specified)

FACTORY DEFAULT STANDARD POWER-UP: SCPI MODE.

SOURCE OUTPUT MODES: Fixed DC Level, Memory/Configuration List (mixed function), Sweep (linear and logarithmic), Sweep (dual linear and dual logarithmic.

MEMORY BUFFER: >250,000 readings. Includes selected measured value(s) and time stamp.

REAL-TIME CLOCK: Lithium battery backup (3 yr. + battery life).

REMOTE INTERFACES:

GPIB: IEEE-488.1 compliant. Supports IEEE-488.2 common commands and status model topology.

USB Device (rear panel, type B): 2.0 Full Speed USBTMC.

USB Host (front panel, type A): USB 2.0, support for flash drives, FAT32.

Ethernet: RJ-45 (10/100BT)

DIGITAL I/O INTERFACE:

Lines: 6 Input/Output user defined for digital I/O or triggering

Connector: 9-pin female D

Input Signal Levels: 0.7V (maximum logic low), 3.7V (minimum logic high)

Input Voltage Limits: −0.25V (Abs. minimum), +5.25V (Abs. maximum)

Maximum Source Current: +2.0mA @ >2.7V (per pin)

Source and sink (4-quadrant) operation

Maximum Sink Current: −50mA @ 0.7V (per pin, solid-state fuse protected)

5V Power Supply Pin: Limited to 500mA @ >4V (solid-state fuse protected)

Handler: User definable Start of Test, End of Test, 4 category bits

PROGRAMMABILITY: SCPI or TSP command sets.

TSP MODE: Embedded Test Script Processor (TSP) accessible from any host interface.

IP CONFIGURATION: Static or DHCP

EXPANSION INTERFACE: The TSP-Link expansion interface allows TSP enabled instruments to trigger and communicate with each other.

LXI COMPLIANCE: 1.4 LXI Core 2011.

DISPLAY: 5 inch capacitive touch, color TFT WVGA (800×480) with LED backlight.

INPUT SIGNAL CONNECTIONS: Front: Banana. **Rear:** Mass termination screw terminal.

INTERLOCK: Active High Input.

COOLING: Forced air, variable speed.

OVER TEMPERATURE PROTECTION: Internally sensed temperature overload puts unit in standby mode.

POWER SUPPLY: 100V to 240V RMS, 50−60Hz (automatically detected at power up).

VA RATING: 350 volt-amps max.

ALTITUDE: Maximum 2000 meters above sea level.

EMC: Conforms to European Union EMC Directive.

SAFETY: Compliance with CE and NRTL listed to UL61010-1 and UL61010-2-30. Conforms with European Union Low Voltage Directive.

VIBRATION: MIL-PRF-28800F Class 3 Random.

WARM-UP: 1 hour to rated accuracies.

DIMENSIONS: (With handle and bumpers): 106mm high × 255mm wide × 425mm deep (4.18 in × 10.05 in × 16.75 in). (Without handle and bumpers): 88mm high × 213mm wide × 397mm deep (3.46 in × 8.39 in × 15.63 in.)

WEIGHT: With bumpers and handle: 4.75 kg (10.5 lbs.). Without bumpers and handle: 4.35 kg (9.6 lbs.).

ENVIRONMENT: Operating: 0°−50°C, 70% R.H. up to 35°C. Derate 3% R.H./°C, 35°−50°C, non-condensing. **Storage:** −25°C to 65°C.

ACCESSORIES SUPPLIED: Test Leads, Mating Mass Terminated Screw Connector, USB Cable, Ethernet/TSP Cable, Interlock Adapter, Power Cord, QuickStart Guide, CD User's Manual.

Model 2460 specifications

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