

Model 460B-1 Laser Power Meter

PRODUCT SUMMARY

The Model 460B-1 laser power meter is a low-cost, portable system capable of providing direct measurements of a wide variety of gas, diode, and dye lasers. It is direct reading in terms of watts for average power measurements of CW or repetitively pulsed lasers. Optional accessories are available for measurements of integrated energy (joules), peak power and pulse shape of pulsed lasers. The spectral range extends from 200 nm in the ultraviolet to 1100 nm in the near infrared.

Design of the Model 460B-1 system is predicated upon providing versatility of application, simplicity of operation and accurate direct measurements. Fast, precise, repeatable measurements may be obtained with a minimum of operator skill and effort.

The Model 460B-1 system consists of two standard parts: the 460B-1 laser power meter and the Model 24600 silicon detector head. The meter contains the basic readout, electronics, power supply, and controls. The Model 24600 is a silicon photovoltaic detector that achieves low noise, uniform response over detector surface and ultra-stable performance.

The 460B-1 provides a wide range of laser measurement capability with a minimum of operational control. The digital readout is direct in watts or joules at any user-specified laser wavelengths. The appropriate laser wavelength is annunciated and automatically illuminated on the front panel. An analog output connector at the rear of the power meter permits an analog meter to be used in conjunction with the digital readout for convenience in locally or remotely optimizing laser output power. The front-panel readout is an easily read, 3½-digit bipolar display. A range selector switch provides system sensitivity over seven full-scale decades (expandable to twelve decades with the Model 550-11 laser attenuators). A single control allows electrical zero as well as compensation for unwanted background light. The all-solid-state construction of the complete system, which utilizes advanced detector, amplifier and digital logic technology, results in long-term stability and reliability.



FEATURES

- *Simple to use*
- *Range of seven full-scale decades, expandable to 12 decades*
- *One direct photocurrent channel and up to five laser line calibrations for direct readings*
- *Optional pulse integration capabilities*



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SPECIFICATIONS

Model 460B-1 Laser Power Meter:

Display	Bipolar 3½-digit display with 100% over-range.
Range	Seven full-scale decades: 10^{-8} , 10^{-7} , 10^{-6} , 10^{-5} , 10^{-4} , 10^{-3} , and 10^{-2} . Expandable up to 10^3 with optional 550-11 laser attenuators
Readout Accuracy	$1\% \pm 1$ count
Response Time (Readout)	100 μ sec
Wavelength Annunciator	Photocurrent (in amperes) or one of five laser wavelengths (in nanometers) is automatically illuminated when detector head selector control is switched to proper calibration position.
Zero/Ambient Compensation	Single control provides electrical zero as well as signal suppression of unwanted background light.
Analog/Recorder Output	0-1.999 volt
Length x Width x Height	7.5 x 8.25 x 3 inches (19 x 21 x 7.6 cm)
Power Requirements	9 VDC, 4 watt, 110 VAC/220 VAC (specify at time of order)

Model 24600 Silicon Detector Head:

Spectral Range	200-1100 nanometers
Minimum Pulse Width for Energy Measurements	10^{-6} seconds
Minimum Rise Time-Oscilloscope Display	1.6×10^{-7} seconds
Reference Plane of detector	0.43 inch behind front surface of detector head housing
Sensitive Area	Square - 1.0 cm ²
Detector	Silicon pin photodiode type 1337-1010BQ
Surface Uniformity	1% with 0.5 mm spot scan
Size	2.125 inch diameter x 2.75 inch length (5.6 cm x 7 cm)
Weight	0.4 pound (0.18 kg)



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