

Optical Power Meter, 1830-R



1830-R Optical Power Meter with 918-D-IS-1 Detector

- Drop-in replacement of legacy 1830-C
- USB2.0 (1830-R) and additional GPIB/RS-232 (1830-R-GPIB) Interfaces
- DC power measurements in the 10 pW–2 W range
- A chirping audible tone for alignment
- Hot swappable among detectors
- Two analog output modes: 2V into 1 M Ω /1V into 50 Ω impedance

The all new Model 1830-R Optical Power Meter is a completely redesigned optical meter, replicating much of the functionalities and specifications of the legacy 1830-C Model. The 1830-R is a perfect drop-in replacement for your existing 1830-C, which was also the most popular Newport meter used in fiber optic component production and testing.

DC power measurements can be displayed in units of W, dBm, dB, and Relative Measurement on the instrument's bright 4 1/2 digit annunciated LED, providing a wide dynamic range with power sensitivities down to 10 pW and full scale readings up to 2 W (detector dependent). Relative power measurements, in reference to a previously stored value, is performed with the result displayed either as a ratio or dB.

USB2.0 is the standard computer interface, while the 1830-R-GPIB model offers additional IEEE-488 (GPIB) and the RS-232C ports. Both the 1830-C and the current 19xx-C commands are supported. A built-in beeper, which changes its frequency as a function of incident optical power, can be utilized to optimize optical beam alignment. The analog output that provides a voltage proportional to the detector current can be used for fast control loop applications.

Additional Benefits

- Improved accuracy $\pm 0.25\%$ versus $\pm 0.4\%$ of 1830-C
- Improved analog output accuracy $\pm 0.5\%$ versus $\pm 1\%$ of 1830-C
- Automatic detector temperature compensation (with 918D Series detectors)
- Automatic attenuator position recognition (with 918D Series detectors)
- USB downloadable firmware updates
- A USB memory stick including software and documents shipped with each unit
- CE and RoHS Compliant
- High-readability, large 7-segment display

Compatible with 818 and 918D Series Photodiode Detectors

pW to Watts of optical power, depending on the detector models, can be accomplished with any one of Newport's 818 and higher-end 918D Series UV, Silicon (Si), Germanium (Ge) or Indium Gallium Arsenide (InGaAs) Detectors, covering 200–1800 nm wavelengths. The 918D Series Detectors have a built-in temperature sensor utilized for sensing and actively compensating for temperature-induced measurement fluctuations, making them the most advanced photodiode based detectors available in the market. Also compatible are fiber optic detectors, 818-IS-1 and 918-IS Series.



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Specifications

1830-R General Specifications

Compatible Newport Detectors	918D and 818-xx/DB (Photodiode)
Signal Ranges	Up to 8 decades
Accuracy (%)	±0.25
Maximum Detector Input Current (mA)	10
Analog Output	0-2 V into 1 M Ω , 0-1 V into 50 Ω
Analog Output Bandwidth	DC-20 kHz (Depending on Range)
Display Type	4.5 Digit, 7 Segment
Display Refresh Rate	75 ms (13.3 Hz)
Communication Interfaces	USB2.0 (GPIB and RS-232 Optional)
Power Requirements	100–120, 220–240 VAC ±10%, 50/60 Hz
Autoranging Time (ms)	200 (typical)
GPIB Bus Transfer Time (ms)	10 (typical)
Operating Temperature Range	5°C to 40°C, <80% RH noncondensing up to 31°C, decreasing linearly to 50% at 40
Storage Temperature Range	<90% RH noncondensing, -20°C to 60
Altitude (m)	< 2000
Weight [lb (kg)]	4.5 (2.0)
Dimensions (W x H x D) [in. (mm)]	7.5 (191) x 4.1 (104) x 8.6 (218)

1830-R Power Meter Ordering Information

Model	Description
841-DIN ⁽¹⁾	8-pin DIN to DB15 Adapter, Connect 818-xx/CM Detectors to DB15 Power Meters
DET-ADAP-PD ⁽²⁾	BNC-to-DB15 Adapter for Third Party Detectors

(1) 841-DIN is required when using 818-xx/CM Series Detectors that have an existing calibration module.

(2) DET-ADAP-PD allows the Newport meters to read third party detectors in current (Amps) only.



Newport Corporation, Global Headquarters

1791 Deere Avenue, Irvine, CA 92606, USA

PHONE: 1-800-222-6440 1-949-863-3144 FAX: 1-949-253-1680 EMAIL: sales@newport.com

Complete listings for all global office locations are available online at www.newport.com/contact

www.newport.com

	PHONE	EMAIL		PHONE	EMAIL
Belgium	+32-(0)0800-11 257	belgium@newport.com	Irvine, CA, USA	+1-800-222-6440	sales@newport.com
China	+86-10-6267-0065	china@newport.com	Netherlands	+31-(0)30 6592111	netherlands@newport.com
France	+33-(0)1-60-91-68-68	france@newport.com	United Kingdom	+44-1235-432-710	uk@newport.com
Japan	+81-3-3794-5511	spectra-physics@splasers.co.jp	Germany / Austria / Switzerland	+49-(0)6151-708-0	germany@newport.com
Taiwan	+886 -(0)2-2508-4977	sales@newport.com.tw			

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DS-101104