

Newport 1931-C  
**Single Channel High-Performance Optical Power  
Meter**



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# High-Performance Optical Power Meters



2931-C High Performance Dual-Channel Power Meter

- Measurement rep-rates up to 20 kHz
- *True rms* measurements
- Power measurements, 100 pW – 40 Watts
- USB data transfer up to 8 Mbps
- Large variety of programmable input and output controlling triggers
- Sophisticated automation capabilities in testing and laboratory applications

## Additional Benefits

- 5.7" Graphical TFT LCD, 1/4 VGA provides excellent legibility from any angle, in any light condition or colored eyewear
- Data storage via internal memory or USB Flash Drive
- Color plotting, statistics and on-board data post-processing
- Analog and digital filtering
- USB and RS-232 computer interfaces
- Trigger in/out control with alarm levels
- Analog bar graph with 10X zoom
- Advanced Programming toolkit - .NET, LabVIEW, High-speed

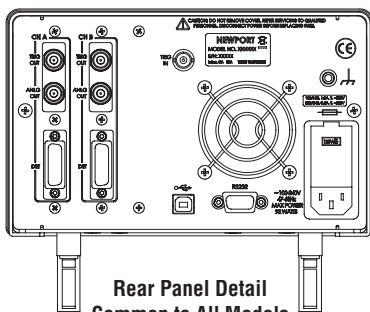
For applications requiring measurement of low-power light sources, Newport's **models 1931-C/2931-C** instruments have broken the barrier of temporal measurement performance with calibrated results. This series of power meters have the ability to handle repetition-rates of up to **20 kHz** at a sampling rate of 250 kHz.

Peak-to-peak and DC source measurements can be displayed in units of W, dBm, dB, and A. Simultaneous measurements of a variety of light sources operating at different power levels and wavelengths can be performed with our Dual-Channel 2931-C Optical Power Meter.

*Low-power measurements*, of pW to tens of Watts can be accomplished with any one of Newport's **918D or 918L Series** Silicon (Si), Germanium (Ge) or Indium Gallium Arsenide (InGaAs) Detectors, covering 190–1800 nm wavelengths. All 918D and 918L Series Detectors have a built-in temperature sensor utilized for sensing, and active compensation of temperature-induced measurement fluctuations.

*True Root-Mean-Square (rms) measurements*, providing the most accurate rms value regardless of the shape of the input waveform.

Advanced features include a 250,000 data point storage buffer, analog and digital filtering, programmable sample rates, moving statistics, plotting and multiple user-configuration storage.



Rear Panel Detail  
Common to All Models  
(Model 2931-C Shown)

## Specifications

Following specifications are preliminary. All efforts were made to accurately specify the performance of this series of instruments at the time of publication, please refer to our web site at [www.newport.com](http://www.newport.com) under Light Test & Measurement Instruments for updated specifications.

|                                                          |                                                                                                                                                                                      |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max Rep Rate<br>( Photodiode Detectors - P-to-P Power)   | 20 kHz                                                                                                                                                                               |
| Signal Sampling Rate                                     | 250 kHz                                                                                                                                                                              |
| Current Sensitivity (full-scale)                         | 25 nA – 25 mA                                                                                                                                                                        |
| Power Range, Photodiodes <sup>(1)(2)</sup>               | 100 pW - 40 W                                                                                                                                                                        |
| Resolution                                               | 100 fA                                                                                                                                                                               |
| Signal-to-Noise, Current Mode (Photodiodes)              | 100 dB, 5 Hz filter (typ)                                                                                                                                                            |
| Bandwidth (-3 dB) (when using photodiode type detectors) | DC to 180 kHz <sup>(1)</sup>                                                                                                                                                         |
| Data Storage Buffer (Internal)                           | 250,000 points                                                                                                                                                                       |
| Data Storage Buffer (External)                           | User's USB Flash-Drive dependent                                                                                                                                                     |
| Display Type                                             | 5.7" Graphical TFT LCD, 1/4 VGA                                                                                                                                                      |
| Analog Output (User Selectable)                          | 0–0.5 V into 50 $\Omega$ , 0–1 V into 1M $\Omega$<br>0–1 V into 50 $\Omega$ , 0–2 V into 1M $\Omega$<br>0–2.5 V into 50 $\Omega$ , 0–5 V into 1M $\Omega$<br>0–10 V into 1M $\Omega$ |
| DC Accuracy                                              | < $\pm$ 0.1% typical                                                                                                                                                                 |
| Peak-to-Peak Accuracy                                    | $\pm$ 1% typical                                                                                                                                                                     |
| Power Requirements                                       | 90–240 VAC                                                                                                                                                                           |
| Weight [lb (kg)]                                         | 11.3 (5.1)                                                                                                                                                                           |
| Dimensions (W x H x D) [in. (mm)]                        | 8.50 (216) x 5.25 (133) x 12.11 (308)                                                                                                                                                |
| Operating Temperature                                    | 10°C to 40°C, <80% RH                                                                                                                                                                |
| Storage Temperature                                      | -25°C to 60°C, <90% RH                                                                                                                                                               |

1) Instrument range is determined by detector used.

2) Specified using model number 818-ST-UV detector at 520 nm and attenuator.

## User Detector Compatibility

The 1931-C/2931-C Series Power Meters are compatible with Newport's new 918D, 918L and legacy 818 Series Low Power Detectors. When using an 818/CM Series Low-Power Detector, a 841-DIN adapter is required for compatibility with the DB-15 connector of the power meter. When using an 818 Series Low-Power Detector, originally purchased without a calibration module, an 818-SCAL-OPT or RCAL-10 calibration module is required for calibrated readings using the power meter. Please contact a Photonics Application Support Engineer for assistance with selecting the appropriate adapter.

## Ordering Information

| Model                  | Description                                                    |
|------------------------|----------------------------------------------------------------|
| 1931-C                 | High Performance Optical Meter                                 |
| 2931-C                 | Dual-Channel High Performance Optical Meter                    |
| 841-DIN <sup>(1)</sup> | Mini-DIN to DB15 Detector Adaptor for 818/CAL Series Detectors |
| PM1-RACK               | Rack Mount Kit, Single                                         |
| PM2-RACK               | Rack Mount Kit, Dual                                           |

(1): Adaptor is required when using 818/CM Series Low-Power Detectors.



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Printed in the USA

DS-05066

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