

Wand Style Photodiode Sensors



Model 918D-ST-UV

- Better calibration uncertainties than competition
- Highly protective and rugged aluminum housing
- Power levels from pW to 2W with sliding OD3 filter
- Wavelengths from 200 - 1,800 nm
- Ergonomic design
- Lowered price for UV models

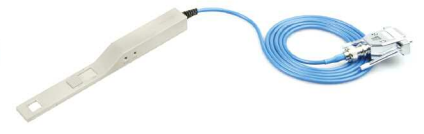
Incorporating a large 10 mm X 10 mm Si or Ge photodiode, these slim detectors are ideal for measurements in tight locations with busy setups. It provides a built-in calibrated OD3 attenuator at the flick of a switch. The UV detector is packaged in clear anodized aluminum housing to avoid burning (resulting in potential damages on optics in the setup), especially in the UV wavelength range. The calibration module is detachable from the BNC connector, allowing interfacing with Newport meters, an oscilloscope, or a current meter as well.

These sensors feature the Attenuator On/Off sensor and the temperature sensor. The power readings are automatically corrected for the Attenuator position and are compensated for the temperature variation, when connected to Power Meter Models 1918-R, 1928-C, 1936-R, and 2936-R.

All detectors are supplied with a NIST traceable calibration report that details individual detector responsivity measured with and without attenuator.



Model 818-ST2/DB or 818-ST2-IR/DB



Model 818-ST2-UV/DB



Model 918D-ST-SL or 918D-ST-IR

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Which Connector Type to Choose?



On the left is the /DB and on the right is the /CM calibration module, respectively.

The 918D-ST series models come with the DB15 calibration module permanently attached to the cable. The 818-ST2 models with /DB suffix come with a detachable BNC/DB15 calibration module that provides direct compatibility with Newport's active power meters. The /CM models come with a detachable BNC/8-pin mini-DIN calibration module that provides compatibility with legacy Newport power meters. In both cases, the adapters contain the detector calibration data, model number, serial number and calibration date for seamless operation with the power meter. For more details about detector compatibility, visit our Low Power Sensor Selection Guide .

Highest Quality Photodiodes

Newport uses the highest quality semiconductor detector materials available in our 818 Series Low-Power Detectors. In addition, each detector arrives with a complete full-spectrum calibration report detailing detector responsivity in 10 nm increments. Newport's advanced in-house calibration facility performs the tightest calibrations in the business, further improving the absolute accuracy of our detectors. For more information, refer to Detector Calibration Services.

Low NEP (Noise Equivalent Power) with a Wide Dynamic Range

Exclusive OD3 attenuator technology extends the calibrated optical dynamic range of our Cylindrical and Hand-Held Wand Detectors by three decades. Our patented attenuator design provides low reflection, high damage threshold and spectral flatness, without the damage susceptibility problems of thin-film attenuators or the spectral variance of simple volume-absorbing attenuators. With the low NEP associated with the photodiodes Newport is using, a wider dynamic range is achieved.

Rugged Aluminum Housing

High power laser beam, especially in the short UV wavelength range, is highly absorbed by plastic material, in which most other wand detectors are packaged. This can potentially result in evaporation of the material and with the UV wavelength optical coating can easily be damaged. Newport's 918D-ST and 818-ST2 Series are designed in aluminum housing to address this issue, and to make it workable in more challenging environments.

Compatible Power Meters for 918D-ST and /DB Models

Optical Power
and Energy Meters
1936-C/R and 2936-C/R

Optical Power Meter
1830-R

Optical Power Meter
High-Performance Hand-Held
1918-R

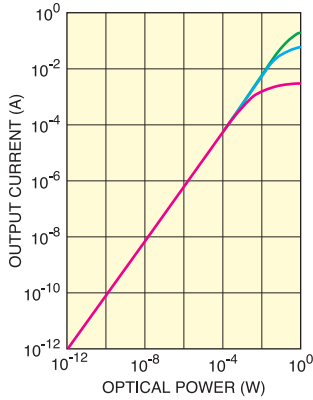


Ordering Information

Model	Description
918D-ST-UV	918D UV-Si Wand Detector, 200–1100 nm, OD3 Attn, DB15
918D-ST-SL	918D Si Wand Detector, 400–1100 nm, OD3 Attn, DB15
918D-ST-IR	918D Ge Wand Detector, 780–1800 nm, OD3 Attn, DB15
818-ST2-UV/DB	UV Metal Wand Detector, UV-Silicon, 200–1100 nm, OD3, DB15
818-ST2/DB	Si Metal Wand Detector, 400–1100 nm, OD3 Attenuator, DB15
818-ST2-IR/DB	Ge Metal Wand Detector, 780–1800 nm, OD3 Attenuator, DB15

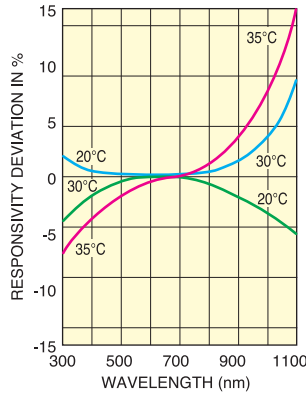
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Performance Graphs

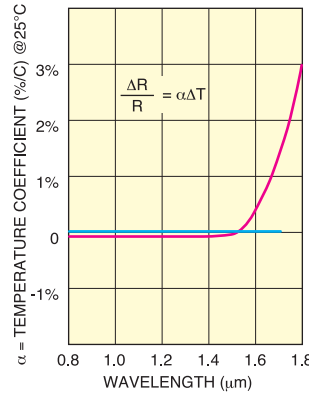


Linearity of photodiode response

- 818-UV
- 818-SL, 818-ST, 818-IS-1
- 818-IR, 818-IG

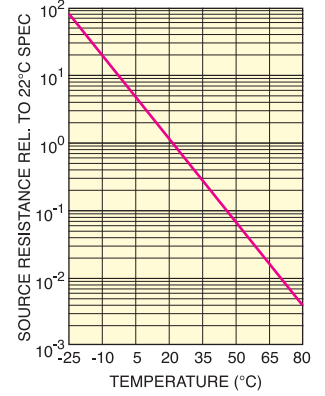


Temperature variation of response vs. wavelength for 818-UV, 818-SL, 818-ST



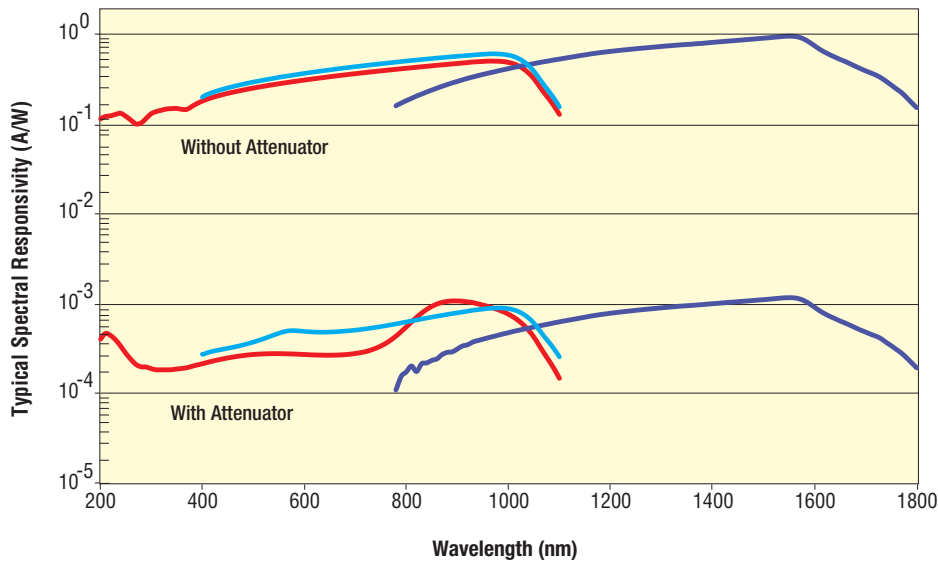
Temperature variation of response vs. wavelength

- 818-IG
- 818-IR



Relative shunt resistance vs. temperature

Typical Spectral Responsivity



- 818-ST2-UV/918D-ST-UV
- 818-ST2-IR/918D-ST-IR
- 818-ST2/918D-ST-SL

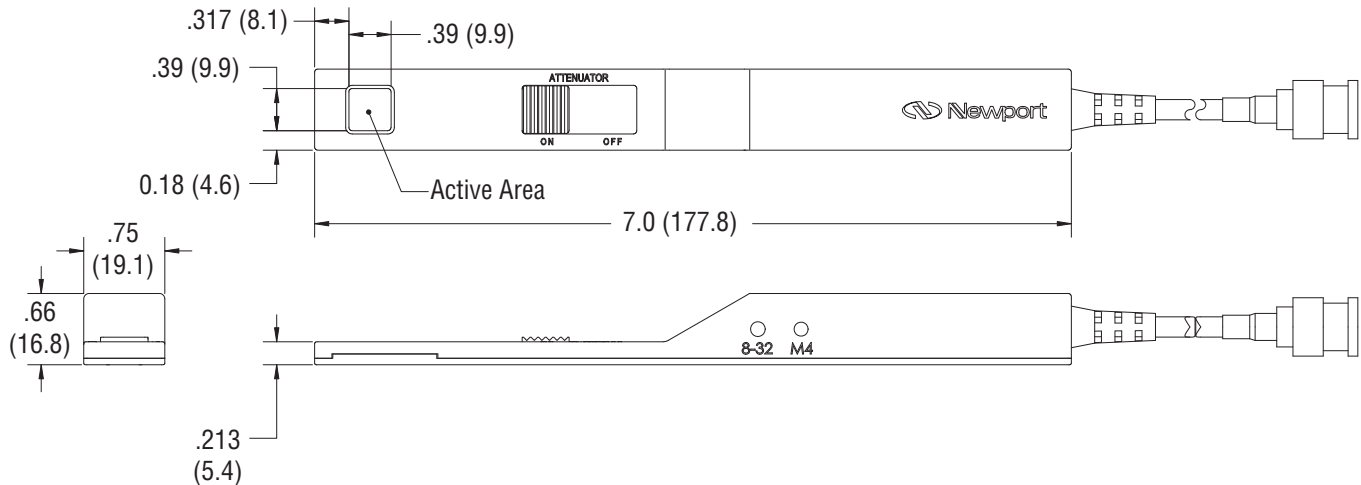
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Specifications

Model	818-ST2-UV 918D-ST-UV	818-ST 2918D-ST-SL	818-ST2-IR 818-ST2-IR
Spectral Range (µm)	200 to 1100	400 to 1100	780 to 1800
Max. Measurable Power (mW)	200	2 W	2 W
Pulse Energy, Maximum - w/ Attenuator (µJ/cm ²)	0.1	1	0.35
Pulse Energy, Maximum - w/o Attenuator (nJ/cm ²)	0.1	1	0.35
Uniformity (%) ¹⁾		±2	
Linearity (%)		±0.5	
Calibration Uncertainty w/o Attenuator	4% @ 200-219nm 2% @ 220-349nm 1% @ 350-949nm 4% @ 950-1100	1% @ 400-940nm 4% @ 941-1100	2% @ 780-910nm, 2% @ 911-1700nm 4% @ 1701-1800
Calibration Uncertainty, w/ Attenuator	8% @ 200-219nm 2% @ 220-349nm 1% @ 350-949nm 4% @ 950-1100nm	1% @ 400-940nm 4% @ 941-1100nm	5% @ 780-910nm, 2% @ 911-1700nm 4% @ 1701-1800 nm
Reverse Bias, Maximum (V)		5	0.25
NEP (W/√Hz)	0.018	0.015	0.015
Material	UV Enhanced Silicon	Silicon	Germanium
Active Area (cm ²)		1	
Shape		Wand	
Attenuator, OD3		Built-In	

1) When measured with beam centered and filling 80% of active area. Uniformity specification applies to photodiode only. It does not apply to the attenuator.

Dimensions



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Newport Corporation, Irvine and Santa Clara, California and Franklin, Massachusetts;
Evry and Beaune-La-Rolande, France; Stahnsdorf, Germany and Wuxi, China have
all been certified compliant with ISO 9001 by the British Standards Institution.

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