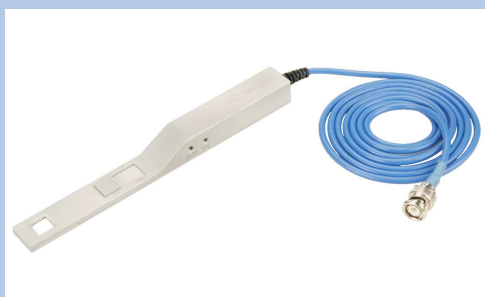


# UV/Si Calibrated Photodetectors

## WAND STYLE



818-ST2-UV Series metal cased wand detectors



Model 818-ST2 Series metal cased wand detectors

- Highly protective and rugged aluminum housing
- Power levels from pW to 2W with sliding OD3 filter
- Wavelengths from 200 - 1,100nm (818-ST2-UV model)
- Detachable DB15 calibration module
- EMI/RFI Shielded

**New! 818-ST2 series wand detectors, redesigned with a sturdy metal housing, are now available! The 818-ST Series will be phased out.**

The detector specifications of the 818-ST2 Series are identical to those of the 818-ST Series. Incorporating a large 10 mm X 10 mm Si 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 818-ST2 Series detectors are packaged in aluminum housing to avoid burning of plastic housing (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. For more UV and Si photodiode detector options try: Low-Power Calibrated Photodetectors and 918D Series Low-Power Calibrated Photodetectors. Calibrated Thermopile Detectors and Calibrated Pyroelectric Sensors are also sensitive in UV wavelengths.

All detectors are supplied with a NIST traceable calibration report that details individual detector responsivity measured with and without attenuator. The standard BNC connector allows flexible interfacing with oscilloscopes, lock-in amplifiers or current meters. The model indicated by the /DB suffix come with an additional BNC/DB15 calibration module that provides direct compatibility with Newport power meters, including 1916-R, 1917-R, 842-PE, 1918-R, 1928-C, and 1936/2936-R. The /CM suffixed models come with an additional BNC/8-pin mini-DIN calibration module that provides compatibility with legacy Newport power meters. In both cases, the /CM and /DB adapters contain also the detector calibration data, model number, serial number and calibration date for seamless operation with the power meter. For more details about detector compatibility try our Calibrated Optical Detector Selection Guide.

## Specifications

Model (w/ DB15 Connector)	818-ST2-UV/(DB)	818-ST2 /(DB)
Spectral Range (nm)	200 to 1100	400 to 1100
Power Density, Average Max w/ Attenuator (W/cm <sup>2</sup> )	0.2	2
Power Density, Average Maximum w/o Attenuator (mW/cm <sup>2</sup> )	0.5	5
Pulse Energy, Maximum - w/ Attenuator (μJ/cm <sup>2</sup> )	0.1	1
Pulse Energy, Maximum - w/o Attenuator (nJ/cm <sup>2</sup> )	0.1	1
Uniformity (%) <sup>1)</sup>	±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
Calibration Uncertainty, w/ Attenuator	8% @ 200-219nm, 2% @ 220-349nm 1% @ 350-949nm, 4% @ 950-1100nm	1% @ 400-940nm 4% @ 941-1100nm
Rise Time (μs)	3	
Shunt Resistance (MΩ) (typ)	200	
Reverse Bias, Maximum (V)	5	
NEP (pW/√Hz)	0.018	0.015
Material	UV Enhanced Silicon	Silicon
Active Area (cm <sup>2</sup> )	1	
Shape	Wand	
Attenuator, OD3	Built-In	

1) When measured with beam centered and filling 80% of active area.

# UV/Si Calibrated Photodetectors

## Highest Quality Photodiodes Are Used in Newport Semiconductor Detectors

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.

## Ordering Information

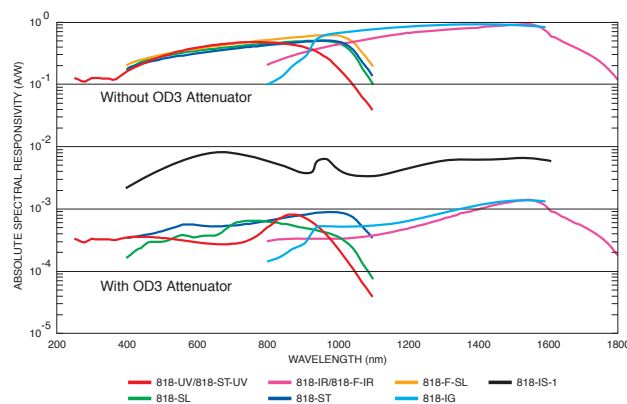
Model	Description
818-ST2	Si Wand Detector 400–1100 nm, OD3 Attenuator, BNC Connector
818-ST2/DB	Si Wand Detector, 400–1100 nm, OD3 Attenuator, DB15 Calibration Module
818-ST2/CM	Si Wand Detector, 400–1100 nm, OD3 Attenuator, 8-pin Calibration Module
818-ST2-UV	UV Wand Detector, UV-Silicon, 200–1100 nm, OD3 Attenuator, BNC Connector
818-ST2-UV/DB	UV Wand Detector, UV-Silicon, 200–1100 nm, OD3, DB15 Calibration Module
818-ST2-UV/CM	UV Wand Detector, UV-Silicon, 200–1100 nm, OD3, 8-pin Calibration Module

## Detachable Calibration Modules for Calibrated Power Readings

Calibration modules are required when using the 818 Series Low Power Detectors with Newport's power meters in calibrated power reading. The module is matched to an individual detector and provides the meter with detector calibration and operating information. The calibration module option is indicated by the /CM or /DB suffix in the detector Model number.

## New 818-ST2 Series in 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 818-ST2 Series is designed in aluminum housing to address this issue, and to make it workable in more challenging environments.



Typical spectral responsivity of Newport's low power detectors



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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.

DS-011206