

Fiber Optic Detectors



- Both photodiode and integrating sphere designs available
- 818-xx-L-FC/DB Series are new low cost fiber optic photodiode detectors
- 818-IS-1 and 918D-IS Series utilize integrating spheres, enabling accurate and polarization independent measurements
- Lower calibration uncertainty than competition

New! 818-xx-L-FC/DB Photodiode Fiber Optic Detectors are a low cost

alternative to the 818-IS or 918D-IS Series. The detectors are based on the industry standard 818 Series detectors with a new 884-FC fiber optic adapter mounted on it. UV Silicon, Silicon, Germanium, and InGaAs versions are introduced. FC/APC and SMA connectors can easily be accommodated by replacing the 884-FC with 884-FCA and 884-SMA, respectively.

Model 818-IS-1 and 918D-IS-1 Universal Fiber Optic Sensors use a 1" symmetrical integrating sphere to ensure the most accurate calibration possible, regardless of the fiber type measured. The integrating sphere uses a dual detector design, with special optics that improve temperature sensitivity markedly from ordinary detectors, with the wavelength range of 400–1650 nm. The 918D-IS-IG uses a single InGaAs detector (800-1650 nm) while the 918D-IS-SL uses a single Si detector (400-1100nm). The calibration data is encoded in a calibration module integral to the electrical connector. The 818-IS-1 is compatible with Newport's legacy power meters utilizing calibration modules, while the 918D-IS versions have an integral DB15 connector and are compatible with Newport's new power meters.

A variety of adapters for connector-terminated fibers are provided, and plug into the detector's front port. The rear port is designed to measure light from straight and angle cleaved bare fibers, using Newport's FP3-FH1 bare fiber holder. A complete kit of adapters is included with each detector, together with a rugged carrying case.

To maintain accuracy and guarantee performance Newport recommends annual recalibration. Newport offers calibration service, including the new ANSI Z450.3 compliant calibration.

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Which Connector Type to Choose?



An example of the DB15 (left) and the 8-pin DIN (right) style calibration module, respectively.

The 918D-IS series models come with the DB15 calibration module permanently attached to the cable. The 818-xx-L-FC/DB models with /DB suffix come with a detachable BNC/DB15 calibration module that provides direct compatibility with Newport's active power meters. The 818-IS-1 model comes with a round 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 .

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



818-IS-1 and 918D-IS Series

Integrating sphere design enabling accurate and polarization independent measurements

400–1650 nm wavelength range with optical power up to 200 mW or more

Bare fiber, FC, ST, LC, and SC adapters included



818-xx-L-FC/DB Series

Newest addition to Newport detectors!

Low cost detectors with low calibration uncertainties

Fiber optic detectors based on popular 818 Series Photodiode Detectors

Easily replaceable with FC/APC and SMA adapters, available for purchase



818-xx-L-FC/DB series fiber adapters

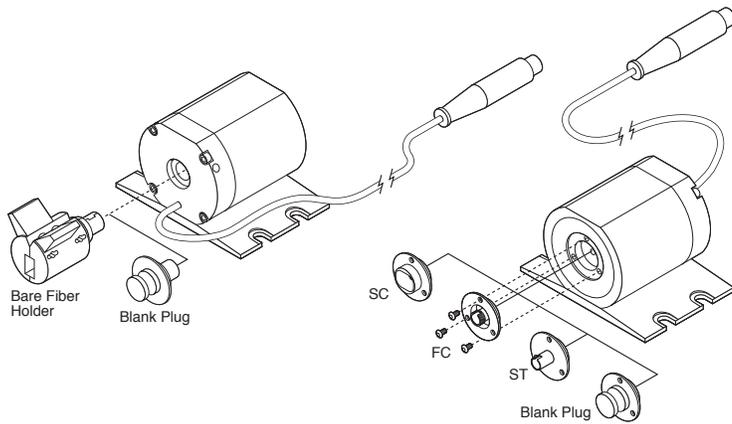
FC/PC adapter is included in the fiber optic detector. FC/APC and SMA adapters are sold separately.



884-FC

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818-IS-1 and 918D-IS series fiber adapters (Included)



818-IS-1 shown. 918D-IS Series are terminated with a 15-pin D-Sub connector.



A bare fiber holder and various fiber optic connector adapters are provided with all Universal Fiber Optic Detectors (LC adapter not shown).

Integrating Sphere Models

Model	Description
918D-IS-1	918D-IS-1 Universal Fiber Optic Detector, 410-1650nm, DB15
918D-IS-IG	918D Universal Fiber Optic Detector, 800-1650nm, DB15
918D-IS-SL	918D-IS-SL Universal Fiber Optic Detector, 410-1100nm, DB15
22493-01	Connector Adapter, ST, 818-IS and 918D-IS
22494-01S	Connector Adapter, FC, 818-IS and 918D-IS
31850-01S	Connector Adapter, LC, 818-IS and 918D-IS
31856-01	Connector Adapter, SC, 818-IS and 918D-IS
22497-01	Blank Plug, 818-IS and 918D-IS
FP3-FH1	Bare Fiber Holder for Photodiode Detector
841-DIN	8-pin DIN to DB15 Adapter, Connect 818-xx/CM Detectors to DB15 Power Meters

Photodiode Models

Model	Description
818-UV-L-FC/DB	Fiber Optic Detector, UV-Si, 200-1100 nm, 0.2 mW, DB15
818-SL-L-FC/DB	Fiber Optic Detector, Si, 400-1100 nm, 5 mW, DB15
818-IR-L-FC/DB	Fiber Optic Detector, Ge, 780-1800nm, DB15, 10 mW
818-IG-L-FC/DB	Fiber Optic Detector, InGaAs, 800-1650 nm, 10 mW, DB15
884-FC	FC/PC Fiber Adapter for 818 & 918D Series Sensors
884-FCA	FC/APC Fiber Adapter for 818 & 918D Series Sensors
884-SMA	FC Fiber Adapter for 818 & 918D Series Sensors

Fiber Optic Detectors

818-IS & 918D-IS Specifications

Model	818-IS-1	918D-IS-1	918D-IS-SL	918D-IS-IG
Spectral Range (nm)	410 to 1650		410 to 1100	800 to 1650
Saturation Power (mW)			>200	
Saturation Energy (μJ) (10–15 ns pulse)			>1	
Pulse Energy, Maximum (μJ)			100	
Calibration Uncertainty ⁽¹⁾	5% @ 410-640nm, 3% @ 641-1650 nm	5% @ 410-640nm, 3% @ 641-1650 nm	5% @ 410-640nm, 3% @ 641-1100 nm	3% @ 800-1650 nm
Rise Time (μs)			2	
NEP @ 5 Hz and 1 A/W (pW/ÅHz)			3	
Material	InGaAs and Silicon		Silicon	Indium Gallium Arsenide

1) Calibration uncertainty can be varied depending on the NIST transfer standard uncertainty variation.

818-xx-L-FC/DB Series Specifications

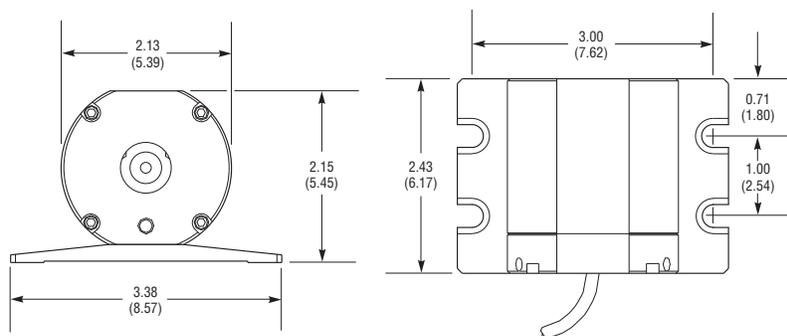
Model	818-UV-L-FC/DB	818-SL-L-FC/DB	818-IR-L-FC/DB	818-IG-L-FC/DB
Spectral Range (nm)	200 to 1100	400 to 1100	780 to 1800	800 to 1650
Max. Measurable Power (mW)	0.2	5	10	10
Pulse Energy, Maximum - w/o Attenuator (nJ/cm ²) ⁽²⁾	0.1	1	0.35	0.35
Calibration Uncertainty ⁽³⁾	4% @ 200-219nm, 2% @ 220-349nm, 1% @ 350-949nm, 4% @ 950-1100nm	1% @ 400-940nm, 4% @ 941-1100nm	2% @ 780-910nm, 2% @ 911-1700nm, 4% @ 1701-1800nm	2% @ 800-900nm, 2% @ 901-1650nm
Linearity (%)				±0.5
Rise Time (μs)	2	2	2	2
NEP (W/ÅHz)	8.9×10^{-13}	5.5×10^{-13}	0.7	0.03
Material	UV Enhanced Silicon	Silicon	Germanium	Indium Gallium Arsenide
Active Area (cm ²)	1		0.071	
Active Diameter (cm)	1.13		0.3	
Shape	Cylinder	Cylinder	Cylinder	Cylinder

1) Without attenuator and applies to entire spectral response

2) 15 ns pulse width

3) Calibration uncertainty can be varied depending on the NIST transfer standard uncertainty variation.

Dimensions



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