Fiber Optic Detectors

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 accommodated by replacing the 884-FC with 884-FCA and 884-SMA, respectively.

Model 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 sensors are ISO 17025 accredited, ensuring compliance with the highest standards of calibration and measurement accuracy. 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 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.

Features and Benefits

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

Which Connector Type to Choose?

An example of the DB15 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 adapter contains 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 918D-IS Series

	845-PE-RS Virtual Power Meter, RS232
	1938-R Advanced Optical Power & Meter, Benchtop, Singel Cannel
	2938-R Advanced Optical Power & Meter, Benchtop, Dual Cannel
	1936-R Optical Power Meter, Benchtop, Singel Cannel, Power and Energy, RoHS
	2936-R Optical Power Meter, Benchtop, Dual Cannel, Power and Energy, RoHS
	1919-R Optical Power Meter, Handheld, High Performance
	843-R Optical Power Meter, Economical, Handheld, Laser Power and Energy
	843-R-USB Optical Power Meter, Economical, Handheld, Laser Power and Energy

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

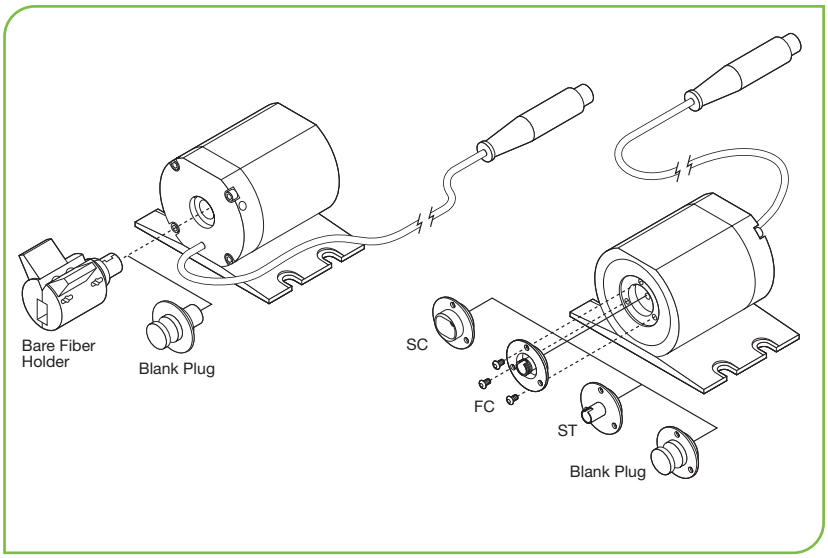
- Newest addition to Newport detectors!
- Low cost detectors with low calibration uncertainties
- Fiber optic detectors based on popular 818 Series Photodiode Detectors
- Easily replaceable with FC/APC and SMA adapters, available for purchase

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

918D-IS series fiber adapters (Included)



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

A bare fiber holder and various fiber optic connector adaptors 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

918D-IS Specifications

Model	918D-IS-1		918D-IS-SL	918D-IS-IG
Spectral Range (nm)	400 to 1650		400 to 1100	800 to 1650
Saturation Power (mW)[4]	350		300	100
Saturation Energy (mJ) (10–15 ns pulse)	>1			
Pulse Energy, Maximum (mJ)	100			
Calibration Uncertainty[1]	1.65% @ 400-430nm, 1.1% @ 430-780nm, 2.4% @ 781-1430nm, 2.6% @ 1430-1600nm	1.65% @ 400-430nm, 1.1% @ 430-780nm, 2.4% @ 781-1430nm, 2.6% @ 1430-1600nm	1.65% @ 400-430nm, 1.1% @ 430-1000nm, 4.3% @ 1035-1065nm	2.4% @ 900-1430nm 2.6% @ 1430-1600nm
Rise Time (ms)	2			
NEP @ 5 Hz and 1 A/W (pW/ÃHz)	3			
Material	InGaAs and Silicon		Silicon	Indium Gallium Arsenide
ISO 17025	Compliant			

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)[4]	0.1	4	10	4
Maximum Pulse Energy (nJ/cm^2)[2]	0.1	1	0.35	0.35
Calibration Uncertainty[1]	3.4% @ 220-300nm, 1.65% @ 300-430nm, 1.1% @ 430-1000nm, 4.3% @ 1035-1065nm	1.65% @ 400-430nm, 1.1% @ 430-1000nm, 4.3% @ 1035-1065nm	2.4% @ 780-1430nm, 2.6% @ 1430-1600nm, 2.4% @ 780-1430nm	2.4% @ 900-1430nm, 2.6% @ 1430-1600nm
Linearity (%)	±1			
Rise Time (ms)	2	2	2	2
NEP (W/ÃHz)	8.9 x 10^{-13}	5.5 x 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
ISO 17025	Compliant			

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.
4) Max power meter dependence table below.

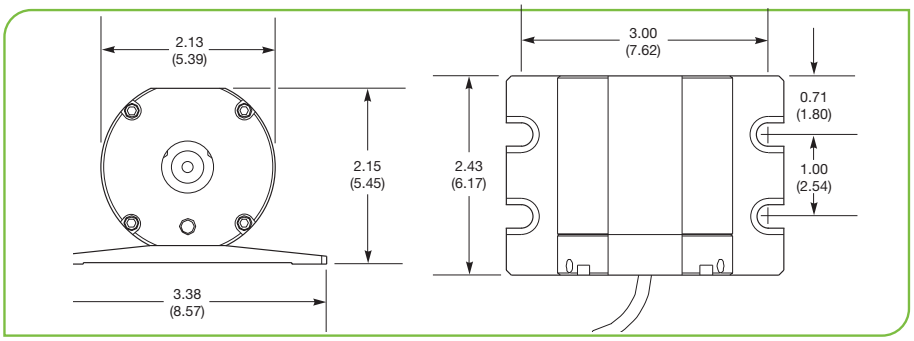
918D-IS Specifications (continuation #1)

Model	918D-IS-1	918D-IS-SL	918D-IS-IG
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1938/2938	400-850 300mW 851-1400 350mW 1401-1650 300mW	400-900 150mW 901-1100 300mW	800-900 100mW 901-1650 30mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1936/2936	400-850 300mW 851-1400 350mW 1401-1650 300mW	400-900 150mW 901-1100 300mW	800-900 100mW 901-1650 30mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1919-R/843-R/844-PE-USB	400-850 100mW 851-1400 150mW 1401-1650 100mW	400-900 130mW 901-1100 250mW	800-900 100mW 901-1650 30mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 845-PE-RS	400-850 300mW 851-1400 350mW 1401-1650 300mW	400-900 150mW 901-1100 300mW	800-900 100mW 901-1650 30mW

818-xx-L-FC/DB Series Specifications (continuation #1)

Model	818-UV-L-FC/DB	818-SL-L-FC/DB	818-IR-L-FC/DB	818-IG-L-FC/DB
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1938/2938	200-400 100µW 401-1050 30µW 1051-1100 40µW	400-750 4mW 751-1100 3mW	780-1000 10mW 1001-1650 6mW 1651-1800 15mW	800-1000 4mW 1001-1650 2mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1936/2936	200-400 100µW 401-1050 30µW 1051-1100 40µW	400-750 4mW 751-1100 3mW	780-1000 10mW 1001-1650 6mW 1651-1800 15mW	800-1000 4mW 1001-1650 2mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 1919-R/843-R/844-PE-USB	200-400 100µW 401-1050 30µW 1051-1100 40µW	400-750 2.5mW 751-1100 2mW	780-1000 2mW 1001-1650 1mW 1651-1800 2mW	800-1000 1mW 1001-1650 0.7mW
Max. Power (W) vs Wavelength (nm) - Responsivity (Ma/w) 845-PE-RS	200-400 100µW 401-1050 30µW 1051-1100 40µW	400-750 4mW 751-1100 3mW	780-1000 3mW, 1001-1650 1.5mW 1651-1800 4mW	800-1000 2.5mW 1001-1650 1.5 mW

Dimensional Drawing



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