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Find the *Newport / New Focus 2103* at our website: *Click HERE*

New Focus™
A Newport Corporation Brand

High-Dynamic-Range Power Sensors



Model 2103
U.S. Patent #7,092,644

- **Automatic seamless gain switching (30-μs transition times) so you don't need to turn any knobs to view your high-dynamic-range signal on an oscilloscope**
- **Up to 25-kHz bandwidth—fast enough for most general lab experiments—and with >65-dB dynamic range**
- **Logarithmic analog output spanning 70 dB so a single 14-bit A-to-D conversion gives <0.01-dB resolution over the full range**

The Models 210X high-dynamic-range (HDR) power sensors are some of the fastest power sensors on the market today. With their high sensitivity and fast speeds, they are ideal for fiber alignment, fluorescence experiments, and absorption spectroscopyanywhere you need a wide dynamic range of up to six orders of magnitude in a single signal trace. With their wide dynamic ranges, these HDR power sensors are perfect for observing extremely narrow and deep spectral features.

The logarithmic output is an analog voltage with a range from –0.2 V to +3.75 V, corresponding to a signal of –74 dBm to +5 dBm (40 pw to 2.5 mw). This enables the full range of the sensor to be viewed on an oscilloscope screen without having to change oscilloscope settings. Moreover, this output enables a single 14-bit A-to-D conversion to achieve <0.01-dB resolution over the full range.

These HDR power sensors are temperature stabilized, resulting in highly accurate and stable measurements. And, unlike other power sensors that slow considerably when switching sensitivity ranges, they incorporate a patented logarithmic-conversion circuit that achieves essentially seamless range switching. This results in a useful dynamic range of >65 dB even at full speeds—about 20-dB better than conventional power sensors. We've even provided three user-controllable speed settings so you can further extend the dynamic range if you don't need the speed. The convenient bolt-together modular design and daisy-chained power connections make it easy to connect multiple units for multichannel, rack-mounted or bench-top systems.



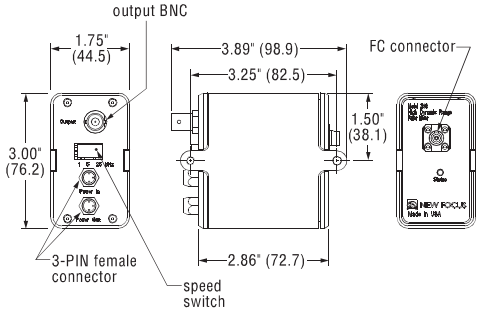
Thread for Model 1280 Filter Holder and Model 1281 Fiber Adapter
2" Beam Height
8-32 (M4) Mounting Thread
Model 2101 front and back views.



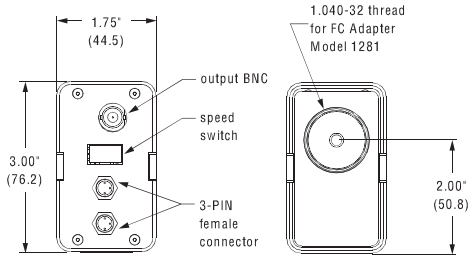
Analog (Log) Signal Output (BNC)
Measurement-Speed Selection: optimize for highest bandwidth or lowest noise
Power Input and Daisy-Chain Power Output

Ordering Information

Model	Description
2101	Vis-NIR Power Meter, High Dynamic Range, 320-1060 nm
2103	NIR Power Meter, High Dynamic Range, 950-1630 nm



Model 2103



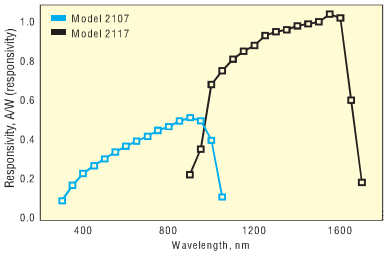
Model 2101

Product Tutorial

Building a Swept-Wavelength Measurement System

The Model 2103 HDR power sensors were designed to be used with our Model TLB-6600 tunable laser system. Integrating the TLB-6600 with the HDR power sensors, and a data-acquisition card (DAQ), results in a state-of-the-art swept-wavelength measurement system with extremely fast, linear sweeps and high-dynamic range. A sample program is available to simplify integration with the laser and your DAQ.

As shown in the schematic, the output of the laser is sent to the device under test (DUT), and the signal from the DUT output (or outputs) is monitored with the HDR power sensor. The electronic outputs of the power sensors are then sent to the DAQ and displayed on your computer. Because the output of the laser is swept continuously through the wavelength range of interest, optical sensors, like the HDR power sensors, must have sufficient bandwidth to handle the in-coming data-stream. Conventional power sensors do not have the required bandwidth for swept-wavelength systems.



Optical Accessories for Our Detectors



Model 1280
Model 1281

- **Optical filters and filter holders**
- **FC-fiber adapters**
- **Jacks for easy alignment**

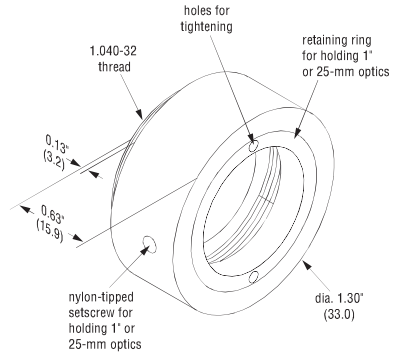
Filter Holder - Model 1280

These filter holders allow you to mount 1"-diameter filters using either an included Delrin® ring or a setscrew (depending upon filter thickness). Since they screw directly onto the photodetector housing, no unwanted light can reach the photodetector itself. This accessory is especially useful when using narrowband filters with our femtowatt photoreceivers.

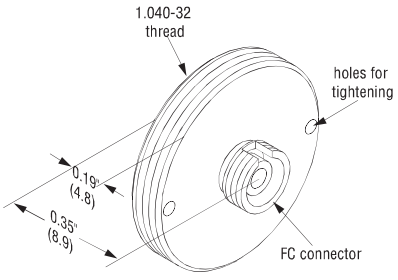
FC Fiber Adapters - Model 1281

These FC-fiber adapters conveniently attach optical fibers with FC connectors to our photodetectors so you can use the same photodetector for both free-space and fiber experiments.

Model	Description
1280	Filter Holder, New Focus Detectors
1281	Fiber Adapter, FC, New Focus Detectors



Model 1280



Model 1281

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