

## FPD510 Series of High Sensitivity PIN Photodetectors: DC – 200 MHz



FPD510-FM

### Features

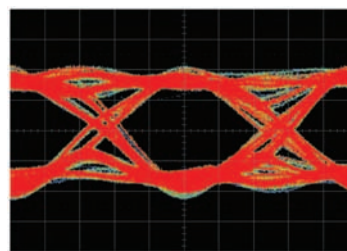
- High Signal-to-Noise Ratio
- Flat Spectral Response (Less than 3 dB up to 200 MHz)
- OEM Package with FC/APC Pigtail (SMF-28e+) or Free-Space Module

Menlo Systems' FPD510 series of High Sensitivity PIN Photodetectors are optimized for the highest signal-to-noise ratio when detecting low-level optical beat signals at frequencies up to 250 MHz. The unit is recommended, in particular, for applications in metrology when beat signals of weak power have to be detected in a highly efficient way. Models for both the visible and the near infrared spectral ranges are available. The FPD510 photodetectors feature ultrafast fiber-coupled or free-space photoreceivers with an integrated low-noise transimpedance amplifier. The 3 dB bandwidth of the DC-coupled device is 200 MHz. The compact design of these detectors allows for easy OEM integration.

### Applications

- Detection of Chopped Light Sources
- Fiber-Coupled or Free-Space Low-Light Signals

The eye diagram is a useful tool for the quantitative analysis of signal transmission. The excellent signal-to-noise ratio of the FPD510 detector enables the evaluation of amplitude and phase jitter characteristics of an optical communication system based on amplitude modulated pulsed laser sources with low-light optical signals.



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### Specifications

	FPD510	FPD510-F	FPD510-FV
Optical Input	Fiber <sup>a</sup>	Free Space	Free Space
Supply Voltage	8 - 20 V	8 - 20 V	8 - 20 V
Current Consumption	50 mA	50 mA	50 mA
Incident Power (Max)	10 mW	10 mW	10 mW
Operating Temperature	10 - 40 °C	10 - 40 °C	10 - 40 °C
Spectral Range <sup>b</sup>	850 - 1650 nm	850 - 1650 nm	400 - 1000 nm
Detector Diameter	–	0.3 mm	0.4 mm
Frequency Range	0 - 250 MHz	0 - 250 MHz	0 - 250 MHz
3 dB Bandwidth	0 - 200 MHz	0 - 200 MHz	0 - 200 MHz
Rise Time	2 ns	2 ns	2 ns
Gain <sup>c</sup>	4 x 10 <sup>4</sup> V/W	4 x 10 <sup>4</sup> V/W	4 x 10 <sup>4</sup> V/W
Dark State Noise Level <sup>d</sup>	-120 dBm	-120 dBm	-120 dBm
NEP (Calculated)	3 pW/√Hz	3.2 pW/√Hz	6 pW/√Hz
Output Connector	SMA	SMA	SMA
Output Impedance	50 Ω	50 Ω	50 Ω
Device Dimensions	60 mm x 50 mm x 27 mm	60 mm x 50 mm x 27 mm	60 mm x 50 mm x 27 mm
Output Coupling	DC	DC	DC

<sup>a</sup> SMF-28e+ Pigtail with FC/APC

<sup>b</sup> Other Spectral Ranges Available on Request

<sup>c</sup> At 200 MHz, 1500 nm/750 nm

<sup>d</sup> 5 – 200 MHz, Span: 3 MHz, Resolution Bandwidth 3 KHz

ITEM #	\$	£	€	RMB	DESCRIPTION
FPD510	\$ 1,367.80	£ 984.82	€ 1,190.00	¥ 10,901.37	850 - 1650 nm, High-Sensitivity PIN Detector, Fiber-Coupled, 0 - 250 MHz
FPD510-F	\$ 1,367.80	£ 984.82	€ 1,190.00	¥ 10,901.37	850 - 1650 nm, High-Sensitivity PIN Detector, Free Space, 0 - 250 MHz
FPD510-FV	\$ 1,367.80	£ 984.82	€ 1,190.00	¥ 10,901.37	400 - 1000 nm, High-Sensitivity PIN Detector, Free Space, 0 -250 MHz

For local and updated pricing, please call Menlo Systems, Inc. in North America 973-300-4490, Menlo Systems GmbH in Europe +49-89-189-1660, or Thorlabs Japan, Inc. in Asia +81-3-5979-8889, or email sales@menlosystems.com.