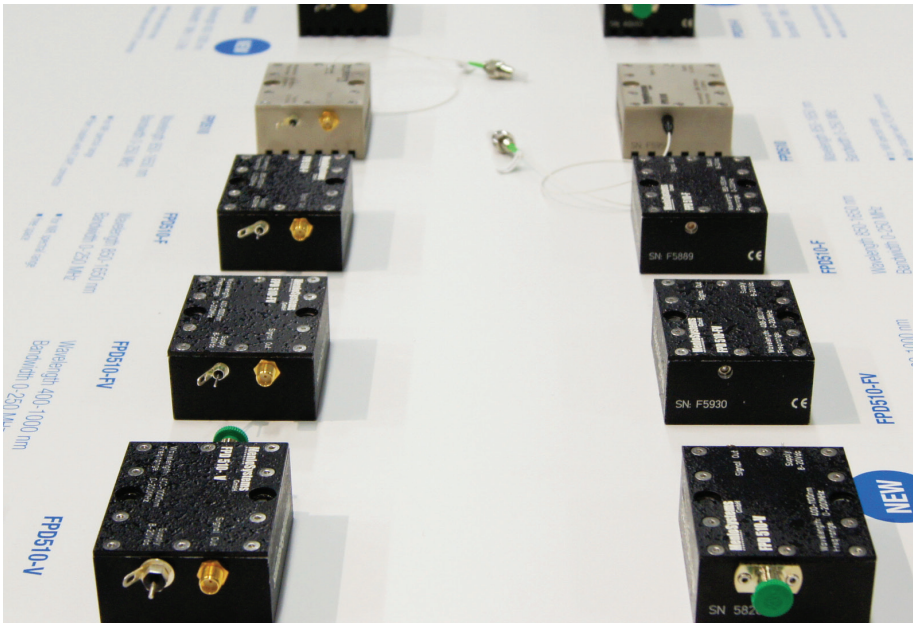


Detector Selection Guide



Menlo Systems has developed a series of detectors for lowest light level signals. From avalanche to PIN photodiodes you can find the detector that is best for your specific application. All devices are field tested in our Optical Frequency Comb Systems featuring Nobel Prize winning technology.

AVALANCHE PHOTODETECTORS

APD210, APD310

Menlo Systems' Avalanche Photodiodes APD210 and APD310, for detection in the visible and near infrared regime, respectively, offer a number of key features: adjustable gain, high signal-to-noise ratio and a temperature independent gain characteristic through electronic compensation of the bias voltage. The detectors are optimized for the free-space detection of optical pulses with a very low signal level in the wavelength range from 400 to 1000 nm and from 850 to 1650 nm. They exhibit an extremely flat frequency response over their 3-dB bandwidth.

PIN PHOTODETECTORS

FPD310, FPD310-F, FPD310-V, FPD310-FV

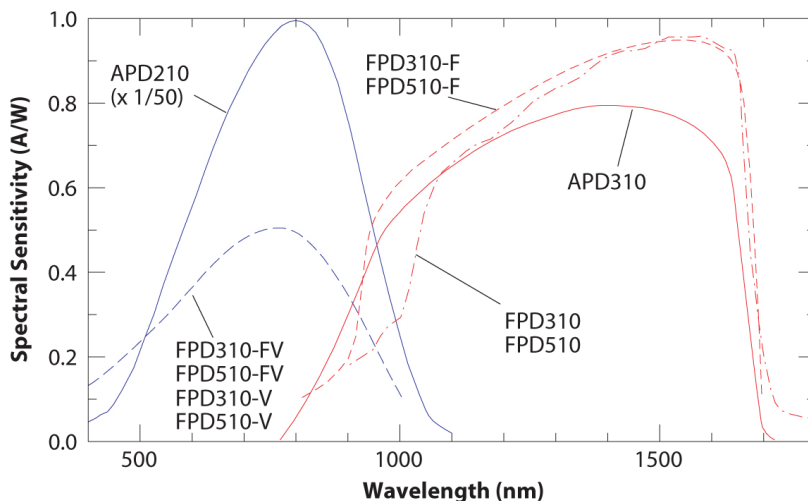
The high sensitivity ultrafast PIN photodetector FPD310 product family is optimized for high bandwidth and high signal-to-noise ratio. The gain can be switched between two fixed settings which allows an optimal performance for the user's application. The units are especially recommended for applications like pulse shape and low-noise radio frequency extraction. Models for the visible and the near infrared regime are available, both with either free space or fiber coupled optical input.

FPD510, FPD510-F, FPD510-V, FPD510-FV

The highly sensitive PIN photodetector FPD510 product family is optimized for highest signal-to-noise ratio when detecting low-level optical beat signals at frequencies up to 250 MHz. The units are recommended in particular for applications in metrology where beat signals of weak power levels have to be detected very efficiently. Models for both the visible and the near infrared regime are available with free space or fiber coupled optical input.

SPECTRAL RESPONSE

Spectral response characteristics of the photodiodes built into the various detector models; please note the different scaling of the APD210 data:



Detector Selection Guide



SPECIFICATIONS

	Optical Input	Max. Incident Power (mW) ^{***}	Spectral Range (nm)	Frequency Range (MHz)	3 dB Bandwidth (MHz)	Rise Time (ns)	Max. Gain (V/W) (calculated)	Dark State Noise Level (dBm)	NEP (pW/√Hz) (calculated)	Output Coupling	Output Signal
APD210	Freespace	10	400-1000	1-1600	5-1000	0.5	2.5×10^5	-80	0.4	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
APD310	Freespace	10	850-1650	1-1800	5-1000	0.5	2.5×10^4	-80	2	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
FPD310	Fiber*	2	850-1650	1-1800	10-1000	0.5	5×10^4	-90	15.7	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
FPD310-F	Freespace	2	850-1650	1-1800	10-1000	0.5	5×10^4	-90	16.6	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
FPD310-V	Fiber**	2	400-1000	1-1500	10-1000	0.5	5×10^4	-90	31.7	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
FPD310-FV	Freespace	2	400-1000	1-1500	10-1000	0.7	5×10^4	-90	30.0	AC/50 Ω	$V_{pp} \sim 1\text{ V}$
FPD510	Fiber*	10	850-1650	0-250	0-200	2	4×10^4	-120	3	DC/50 Ω	0-1 V
FPD510-F	Freespace	10	850-1650	0-250	0-200	2	4×10^4	-120	3.2	DC/50 Ω	0-1 V
FPD510-V	Fiber**	10	400-1000	0-250	0-200	2	4×10^4	-120	6	DC/50 Ω	0-1 V
FPD510-FV	Freespace	10	400-1000	0-250	0-200	2	4×10^4	-120	6	DC/50 Ω	0-1 V

*SMF28 pigtail with FC/APC **FC/PC connector *** Equals damage threshold

For more detailed information and specifications, please refer to the respective product sheets available for download at our website.

ORDERING INFORMATION

Product Code	APD210	APD310
Price	1,800 EUR	1,950 EUR

Product Code	FPD310	FPD310-F	FPD310-FV	FPD310-V
Price	890 EUR	890 EUR	890 EUR	890 EUR

Product Code	FPD510	FPD510-F	FPD510-FV	FPD510-V
Price	1,190 EUR	1,190 EUR	1,190 EUR	1,190 EUR

Prices and Specifications are subject to change without notice. Custom modifications are available, please inquire.



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