

High Sensitivity Detector Unit APD210/310



For applications that require highest sensitivity. The APD avalanche photodiodes can provide an extremely sensitive alternative to traditional PIN photodiodes. The APD is sensitive and fast enough for the characterization of, for example, pulsed solid-state lasers on the nanosecond time scale. It maintains high gain stability over the 10 °C to 40 °C temperature range by utilizing a temperature compensation circuit, which adjusts the ~150 V DC bias to ensure operation near the breakdown voltage.

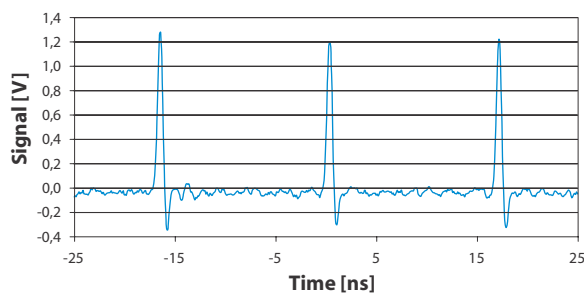
Features

- High speed response: Bandwidth 1 MHz to 1 GHz
- Spectral range APD210: 400 nm-1000 nm
- Spectral range APD310: 850 nm-1650 nm
- Temperature independent gain from 10-40 °C

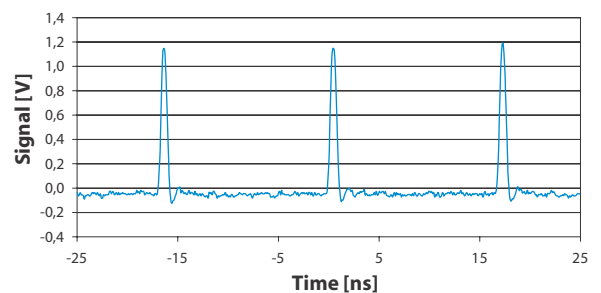
Applications

- Detection of
- Fast laser pulses
 - Low light level signals
 - Beat signals of low level inputs

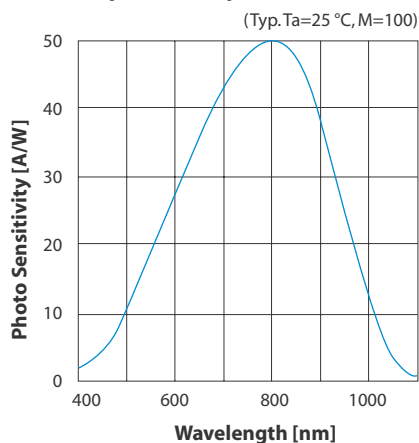
Pulse Response APD210 of a Sub-ns Pulse Train, 780 nm, 50 MHz Repetition Rate



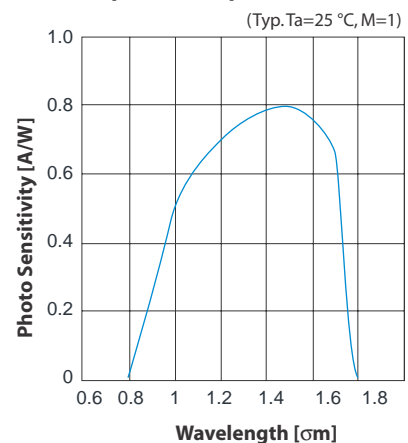
Pulse Response APD310 of a Sub-ns Pulse Train, 1560 nm, 50 MHz Repetition Rate



Spectral Response APD210



Spectral Response APD310



High Sensitivity Detector Unit APD210/310

TECHNICAL SPECIFICATIONS		
	APD210	APD310
Optical Input	Freespace *	Freespace *
Supply Voltage	+12 to +15 V **	+12 to +15 V **
Current Consumption	200 mA	200 mA
Max. Incident Power	10 mW	10 mW
Operating Temperature	10-40 °C	10-40 °C
Spectral Range	400-1000 nm	850-1650 nm
Detector Diameter	0.5 mm	0.03 mm
Frequency Range	1-1600 MHz	1-1800 MHz
3dB Bandwidth	5-1000 MHz	5-1000 MHz
Rise Time	500 ps	500 ps
Maximum Gain ***	2.5×10^5 V/W @1 GHz, 800 nm	2.5×10^4 V/W @1 GHz, 1500 nm
Dark State Noise Level	-80 dBm	-80 dBm
NEP (calculated)	0.4 pW/√Hz	2 pW/√Hz
Output Connectors	BNC	BNC
Output Impedance	50 Ω	50 Ω
Device Dimensions	60x56x47.5 mm	60x56x47.5 mm
Output Coupling	AC	AC

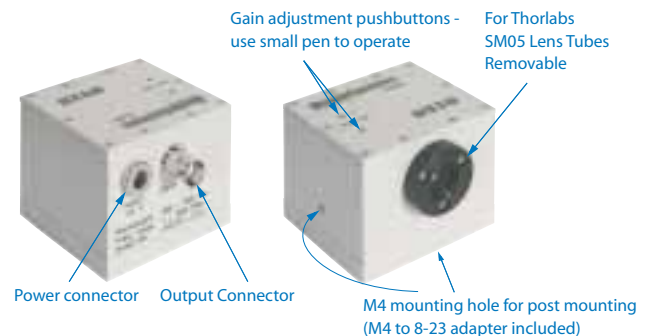
* With adaptor for Thorlabs SM05 mount

** Power supply included, with adaptors for EU/USA, please ask for different types

*** Gain adjustable via pushbuttons

Mechanical Outline

The High Sensitivity Module features an Avalanche Photodiode with a high voltage supply, a radio frequency amplifier and a continuously adjustable gain. The module is designed to detect beat signals between low light levels. The APD has been field tested in our Optical Frequency Synthesizer FC8004.



ORDERING INFORMATION

APD210	High Sensitivity Avalanche Photodetector Unit with Integrated RF-amplifier, Wavelength Range 400-1000 nm	EUR 1,800
APD310	High Sensitivity Avalanche Photodetector Unit with Integrated RF-amplifier, Wavelength Range 850-1650 nm	EUR 1,950

For custom modifications and OEM quantities please call for pricing.
Prices and Specifications are subject to change without notice.
Last updated: January 11, 2009

Contact

Menlo Systems GmbH
Am Klopferspitz 19
D-82152 Martinsried/Munich
Germany
Tel: +49 89 189166 0
Fax: +49 89 189166 111
www.menlosystems.com
sales@menlosystems.com

In the US

Menlo Systems Inc.
Tel: +1 973 300 4490
www.menlosystems.com
ussales@menlosystems.com
Thorlabs, Inc.
Tel: +1 973 579 7227
www.thorlabs.com
sales@thorlabs.com

In Japan & Asia

Thorlabs Japan Inc.
Tel: +81 3 5979 8889
www.thorlabs.com
sales@thorlabs.jp