

# APD210/310

## High Sensitivity Detector Unit

**MenloSystems**



### KEY SPECIFICATIONS

- High Speed Response: 3 dB Bandwidth 5 MHz to 1 GHz
- Spectral Range APD210: 400 -1000 nm
- Spectral Range APD310: 850 -1650 nm
- Temperature Compensated Gain for 10°C to 40°C Ambient Temperature

### APPLICATIONS

- Fast Laser Pulses
- Ultra Low Light Level Signals
- Beat Signal of Low Level Inputs

### FEATURES

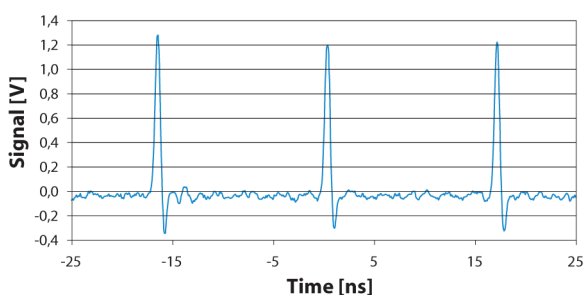
- Avalanche Photodiode Temperature Compensated Setup
- Integrated Radio Frequency Amplifier
- Continuously Adjustable Gain Setting
- Long Term Field Tested in our FC8004 and FC1500 Optical Frequency Synthesizer

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.

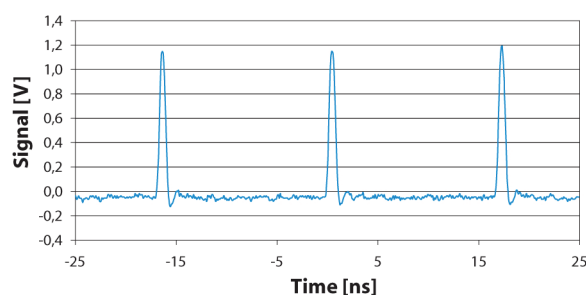
### APD210

### APD310

Pulse Response APD210 to a sub-250 fs Pulse Train at 780 nm

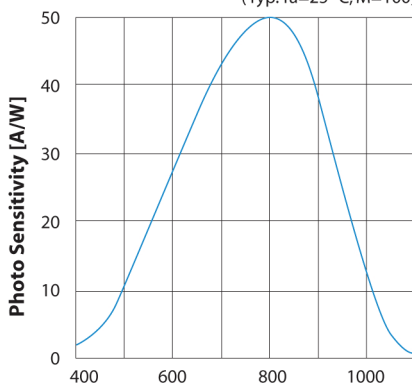


Pulse Response APD310 to a sub-250 fs Pulse Train at 1560 nm



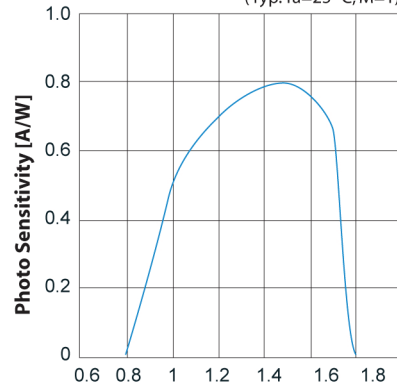
Spectral Response APD210

(Typ. Ta=25 °C, M=100)



Spectral Response APD310

(Typ. Ta=25 °C, M=1)



# APD210/310

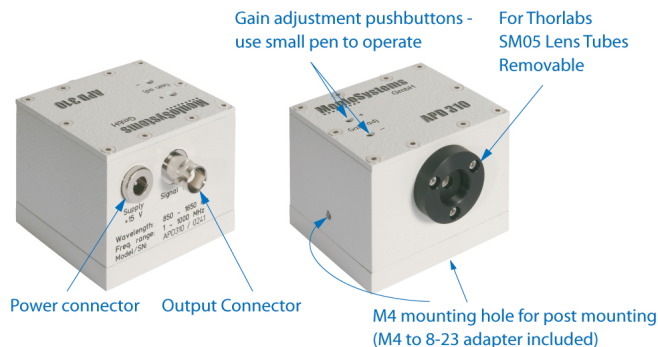
**MenloSystems**

## High Sensitivity Detector Unit

SPECIFICATIONS	APD210	APD310
Optical Input*	Freespace	Freespace
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
3 dB Bandwidth	5-1000 MHz	5-1000 MHz
Rise Time	500 ps	500 ps
Maximum Gain***	$2.5 \times 10^5$ V/W @ 800 nm	$2.5 \times 10^4$ V/W @ 1500 nm
Dark State Noise Level	-80 dBm	-80 dBm
NEP (calculated)	0.4 pW/√Hz	2 pW/√Hz
Output Coupling	AC	AC
Output Impedance	50 Ω	50 Ω
Signal Output	$V_{pp} = 1$ V	$V_{pp} = 1$ V
Output Connectors	BNC	BNC
Supply Voltage***	+12 to +15 V	+12 to +15 V
Current Consumption	200 mA	200 mA

\* With adaptor for Thorlabs SM05 series. \*\* Equals optical damage threshold\*\*\*Gain adjustable via pushbuttons.\*\*\*\*Power supply included, with adaptors for EU/USA, please ask for different types.

### MECHANICAL OUTLINE



### ORDERING INFORMATION

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

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

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