Additional IR Detection and Analysis

- IR Photodiodes
- IR Photoconductive Detectors
- IR Power Meters
- IR Rotating Slit Beam Profiler
- IR Fabry-Perot Interferometer

IR Detectors (λ ≥ 2 µm)

Related Products

Features

- Detection Range Out to 5.4 µm
- Three Different IR Detector Packages: Bare Photodiodes, Biased Photodiodes, and Amplified Photodiodes
- Mounted Versions Feature a Slim Profile and SM05 / SM1 Threading
- Compatible with SM Series Fiber Adapters
- Applications Include Laser/Coherent Source Detection, Optic and Spectroscopic Measurements, and Imaging Applications
- Custom Detectors Available

In addition to the IR specific detectors shown here, Thorlabs' offers a complete line of detectors with wavelength ranges from 150 nm to 4.8 µm.

Thorlabs' offers several different detector options for use in the IR. Bare InGaAs Photodiodes feature high bandwidth and detection out to 2.6 µm. Several different mounting options are available for our bare PDs.

Thorlabs' IR High Speed Biased Detectors feature InGaAs elements with fast response times and low noise. Each model comes complete with a fast PIN photodiode and an internal bias battery packaged in a rugged aluminum housing. With a wide bandwidth DC-coupled output, these detectors are ideal for monitoring fast pulsed lasers as well as DC optical sources. Each DET has a Bias-T circuit that combines a high-frequency AC signal with a DC signal into a single output. The direct photodiode anode current is provided on a side panel BNC. This output is easily converted to a positive voltage using a terminating resistor. When looking at high-speed signals, Thorlabs recommends using a 50 Ω load resistance. For lower bandwidth applications, our variable terminator is a great time saver. Replacement batteries and AC Power Adapters are also available.

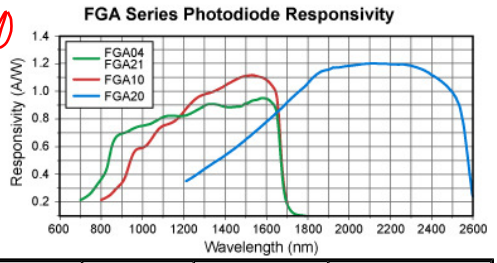
The PDA series of Amplified Photodetectors feature a wide range of photodiode plus amplifier configurations housed in compact, low profile packages. IR Detectors are available out to 5.4 µm. The modules possess a thin profile to allow access to light paths with a minimal footprint. All connections and controls are located perpendicular to the light path, providing increased accessibility. Amplification is provided by low noise transimpedance or voltage amplifiers that are capable of driving 50 Ω loads. Replacement PDA Series Power Cables are available.

The PDA10DT and PDA10JT are extensions of Thorlabs' PDA Series detectors, with available wavelength ranges from 1.2 to 5.4 µm. These detectors include a built-in temperature controller, allowing the temperature to be stabilized at -10 °C (PDA10DT) or -30 °C (PDA10JT). Metric versions of these detectors are also available. Both versions come complete with a power supply.

InGaAs Photodiode

Zoom

- The **FGA20** Features a Long Wavelength Range
- To complement our PD offerings, we have a range of mounts and accessories that are designed to be used with PDs.



Item #	Wavelength Range (nm)	Active Area	Diode Package Type[b]	Rise/(Fall) Time[a]	NEP (W/Hz$^{1/2}$)	Typical Dark Current	Junction Capacitance[a]
FGA20	1200 - 2600	0.79 mm^2 (Ø1 mm)	TO-18/PIN	23 ns (23 ns) @ 1 V	2.0 x 10^{-12}	75 µA @ 1 V (max)	200 pF @ 1 V

a) Typical values. R_L = 50 Ohm
b) *See specification sheet for exact pin out configuration*

Order

Based on your currency / country selection, your order will ship from our European warehouse

+1QTY	Docs	Part Number - Universal/Imperial		Price	Available/Ships
+1 0		**FGA20**	InGaAs Photodiode, 23 ns Rise Time, 1200-2600 nm, Ø1 mm Active Area	€ 220,98	Today

Add To Cart

Biased InGaAs Detectors

Zoom

Item #	Active Area	Wavelength Range	Rise Time	NEP (W/√Hz)	Dark Current	Junction Capacitance*
DET10D	0.8 mm^2 (Ø1.0 mm)	1200 - 2600 nm	25 ns	2 x 10^{-12}	15 µA (75 µA Max)	175 pF

*Typical values, R_L = 50 Ohm

Order

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+1QTY	Docs	Part Number - Universal/Imperial	Price	Available/Ships
0		DET10D - InGaAs Detector, 1200-2600 nm, 25 ns Rise Time, 0.8 mm^2	€ 408,29	√ Today
+1QTY	**Docs**	**Part Number - Metric**	**Price**	**Available/Ships**
0		DET10D/M - InGaAs Detector, 1200-2600 nm, 25 ns Rise Time, 0.8 mm^2, Metric	€ 408,29	√ Today

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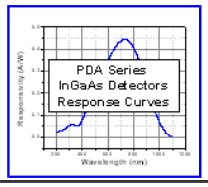
Amplified InGaAs Photodetectors: NIR - IR Wavelengths

Item #	PDA10D
Click to Enlarge 	
Element Photo	InGaAs
Wavelength Range	1200 - 2600 nm
Detector Size	Ø1.0 mm
Gain	Fixed: 10 kV/A / 5 kV/A*
Bandwidth Range	DC - 15 MHz
NEP (W/$Hz^{1/2}$)	3.5x10^{-11}

* Gain Values at Hi-Z / 50 Ohm Loads

Order

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+1QTY	Docs	Part Number - Universal/Imperial	Price	Available/Ships
0		PDA10D - InGaAs Fixed Gain Detector, 1.2-2.6 µm, 15 MHz BW, 0.8 mm^2, 120 VAC	€ 425,43	√ 2-3 Days
+1QTY	**Docs**	**Part Number - Metric**	**Price**	**Available/Ships**
0		PDA10D-EC - InGaAs Fixed Gain Detector, 1.2-2.6 µm, 15 MHz BW, 0.79 mm^2, 230 VAC	€ 425,43	√ Today

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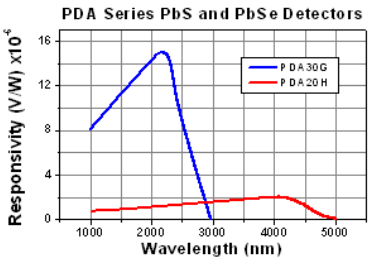
Amplified PbS and PbSe Photodetectors: IR Wavelengths

Item #	PDA30G	PDA20H
Detector Image		
Element Photo	PbS	PbSe
Wavelength Range	1.0 - 2.9 µm	1.5 - 4.8 µm
Detector Size	3 mm x 3 mm	2 mm x 2 mm
Gain	Fixed: 100x / 50x*	Fixed: 100x / 50x*
Bandwidth Range	0.2 - 1 kHz	0.2 - 10 kHz
NEP (W/$Hz^{1/2}$)	1.5x10^{-11}	1.5x10^{-10}



* Gain Values at Hi-Z / 50 Ohm Loads

Order

Based on your currency / country selection, your order will ship from our European warehouse

+1QTY	Docs	Part Number - Universal/Imperial	Price	Available/Ships
0		PDA30G - PbS Fixed Gain Detector, 1.0-2.9 µm, AC Coupled Amplifier, 1 kHz BW, 9 mm^2, 120 VAC	€ 347,13	√ Today
0		PDA20H - PbSe Fixed Gain Detector, 1.5-4.8 µm, AC Coupled Amplifier, 10 kHz BW, 4 mm^2, 120 VAC	€ 369,75	√ Today
+1QTY	**Docs**	**Part Number - Metric**	**Price**	**Available/Ships**
0		PDA30G-EC - PbS Fixed Gain Detector, 1.0-2.9 µm, AC Coupled Amplifier, 1 kHz BW, 9 mm^2, 230 VAC	€ 347,13	√ Today
0		PDA20H-EC - PbSe Fixed Gain Detector, 1.5-4.8 µm, AC Coupled Amplifier, 10 kHz BW, 4 mm^2, 230 VAC	€ 369,75	√ Today

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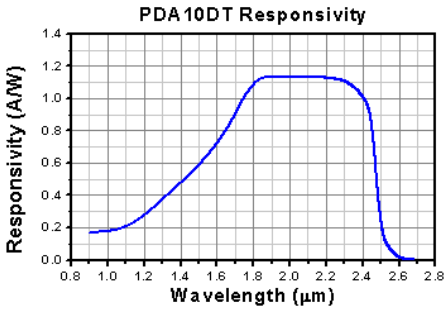
Amplified Extended Range InGaAs NIR Photodetectors

Item #	PDA10DT
Click on the image to enlarge	

- Ideal for Detection of CW or Pulsed NIR Light from 1.2 µm to 2.57 µm
- TE-Cooled to -10 °C to Reduce Thermal Noise
- 8 Step Gain Adjustment in 10 dB Increments
- Variable Lowpass Filter (500 Hz to 1 MHz)
- Internal SM1 (1.035"-40) Threading

	
Detector Material	Extended Range - InGaAs
Wavelength Range	1.2 - 2.6 µm
Peak Wavelength	2.3 µm
Peak Responsivity	1.3 A/W
Detector Size	Ø1 mm
Gain	8 x 10 dB Steps
Lowpass Filter Bandwidth Range	500 Hz to 1 MHz
Detector Temperature	-10 °C



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+1QTY	Docs	Part Number - Universal/Imperial	Price	Available/Ships
0		**PDA10DT** - InGaAs Amplified Detector with TEC, 1.2 - 2.57 µm, 100-120 VAC	€ 1.648,65	2-3 Days

+1QTY	Docs	Part Number - Metric	Price	Available/Ships
0		**PDA10DT-EC** - InGaAs Amplified Detector with TEC, 1.2 - 2.57 µm, 220 - 240 VAC	€ 1.648,65	Today

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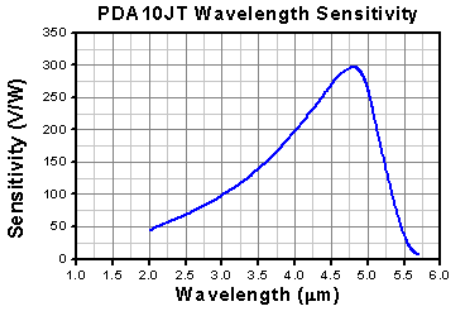
MCT (HgCdTe) Amplified Mid IR Detectors

Item #	PDA10JT
Click on the image to enlarge	
Detector Material	HgCdTe (MCT)
Wavelength Range	2.0 - 5.4 µm
Peak Wavelength	4.8 µm
Peak Responsivity	300 V/W
Detector Size	1 mm × 1 mm Square
Gain Settings, dB	0, 4, 10, 16, 22, 28, 34, 40
Lowpass Filter Bandwidth Range	1.25 kHz to 160 kHz
Detector Temperature	-30 °C

- Ideal for Detection of Chopped or Pulsed Mid IR Light from 2.0 µm to 5.4 µm
- TE-Cooled to -30 °C to Reduce Thermal Noise
- Variable Gain Amplifier (0.8 to 100 V/V)
- Variable Lowpass Filter (1.25 to 160 kHz)
- Internal SM1 (1.035"-40) Threading



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Order

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+1QTY	Docs	Part Number - Universal/Imperial	Price	Available/Ships
0		**PDA10JT** - HgCdTe Amplified Detector with TEC, 2.0 - 5.4 µm, 100 - 120 VAC	€ 3.390,39	Lead Time

+1QTY	Docs	Part Number - Metric	Price	Available/Ships
0		**PDA10JT-EC** - HgCdTe Amplified Detector with TEC, 2.0 - 5.4 µm, 220 - 240 VAC	€ 3.390,39	Lead Time

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Edited by: dzakzewski on Aug 21, 2012 Last Live: Dec 28, 2011

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