

2-12 μ m MCT Amplified Photodetector



- **Product Description**

IdealPhotonics' Cadmium Telluride Mercury (CdTeHg) Amplified Photodetector has a sensitive range covering 2-11 μ m. It features 8 adjustable gain levels for precise, quantifiable photoconversion. The detector offers a wide dynamic range and is suitable for various infrared photonic development scenarios. With excellent performance and high cost-efficiency, the product provides comprehensive technical support and is commonly used in mid-to-long wavelength infrared measurement applications.



● Product features

Sensitive Range: 12 μm , for infrared measurements、 8 Adjustable Gain Levels: Quantitative photoconversion、 Wide Dynamic Range: Non-cooled, versatile for various applications 、 Excellent Performance, High cost-efficiency, offering comprehensive technical support 、 Custom Services: Provides customizations to meet specific application needs

● Part Number

MP-CPD-M-M-A-A-R10

● Application area

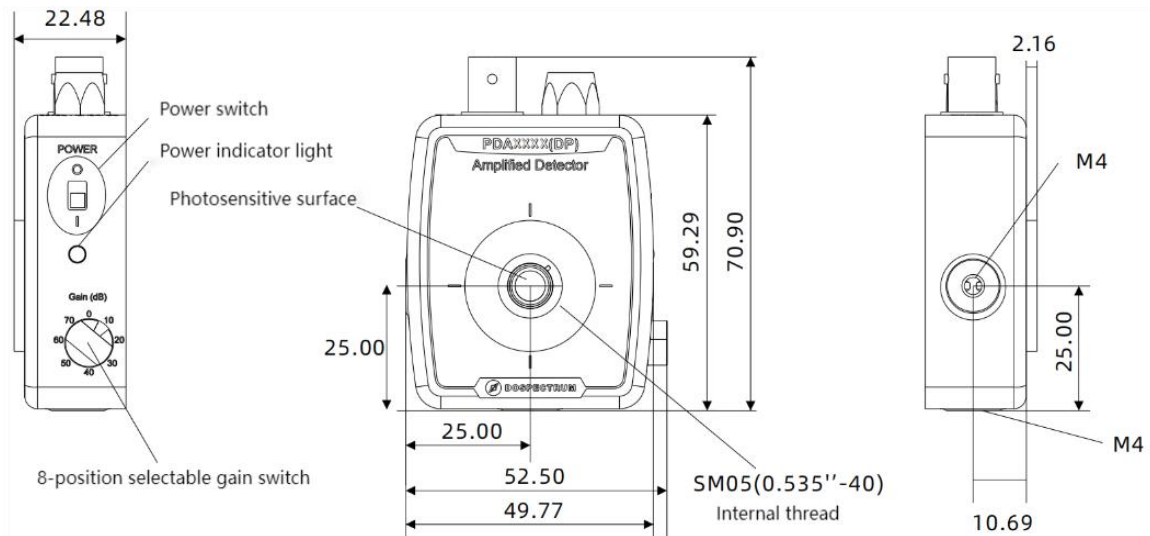
Mid-to-long wavelength infrared measurement

● Core parameters

Wavelength Range	Sensitive Area Size	Photoelectric Response
2-12 μm	1mm \times 1mm	$\geq 0.004\text{A/W}$



● Dimension Drawing



● General Parameters

Main Parameters

Parameter	Value		
Wavelength Range	2-5um	2-12um	
Peak Wavelength	4.5um	10.6um	
Response Time Constant	≤120ns	1.5ns	
D*	$2.0 \times 10^{10} \text{ cm} \cdot \text{Hz}^{1/2}/\text{W}$	$1.0 \times 10^7 \text{ cm} \cdot \text{Hz}^{1/2}/\text{W}$	$7.0 \times 10^8 \text{ cm} \cdot \text{Hz}^1 / \text{W}$
Signal Amplitude	Hi-Z load: 0 ~ 10V; 50Ω load: 0 ~ 5V		
Gain Adjustment Method	Rotatable switch, 0-70dB, 8 steps (10 dB per step). Bandwidth is inversely proportional to gain.		



Sensitive Area Size	1mm × 1mm				
Sensor Depth	0.13" (3.3 mm)				
Detector Net Weight	0.10kg				
Operating Temperature	10-40°C				
Storage Temperature	-20-70°C				
Dimensions	2.79" X 2.07" X 0.89" (70.9 mm X 52.5 mm X 22.5 mm)				
Photoelectric Response	≥0.5A/W	≥0.004A/W		≥0.14A/W	
Optical wetting	With wetting lens	without wetting		With wetting lens	
Power Interface	Power Switch	Signal Interface	Gain Adjustment	Support Rod Interface	Optical Interface
LUMBERG RS MV3 FEMALE	Slide switch with LED indicator	BNC Female Socket	8-step rotary knob	M4 × 2	SM1 × 1 SM0.5 × 1



Eight-Stage Quantitative Adjustable Gain

Parameters:

0dB		10dB		20dB		30dB	
Gain (Hi-Z)	1.51 × 10 ³ V/A	Gain (Hi-Z)	4.75 × 10 ³ V/A	Gain (Hi-Z)	1.5 × 10 ⁴ V/A	Gain (Hi-Z)	4.75 × 10 ⁴ V/A
Gain (50Ω)	0.75 × 10 ³ V/A	Gain (50 Ω)	2.38 × 10 ³ V/A	Gain (50 Ω)	0.75 × 10 ⁴ V/A	Gain (50 Ω)	2.38 × 10 ⁴ V/A
Bandwidth (BW)	13MHz	Bandwidth (BW)	1.7MHz	Bandwidth (BW)	1.1MHz	Bandwidth (BW)	300kHz
Noise (RMS)	≤250uV	Noise (RMS)	≤250uV	Noise (RMS)	≤250uV	Noise (RMS)	≤250uV
40dB		50dB		60dB		70dB	
Gain (Hi-Z)	1.51 × 10 ⁵ V/A	Gain (Hi-Z)	4.75 × 10 ⁵ V/A	Gain (Hi-Z)	1.5 × 10 ⁶ V/A	Gain (Hi-Z)	4.75 × 10 ⁶ V/A
Gain (50Ω)	0.75 × 10 ⁵ V/A	Gain (50 Ω)	2.38 × 10 ⁵ V/A	Gain (50 Ω)	0.75 × 10 ⁶ V/A	Gain (50 Ω)	2.38 × 10 ⁶ V/A
Bandwidth (BW)	90kHz	Bandwidth (BW)	28kHz	Bandwidth (BW)	9kHz	Bandwidth (BW)	3kHz
Noise (RMS)	≤250uV	Noise (RMS)	≤250uV	Noise (RMS)	≤300uV	Noise (RMS)	≤400uV

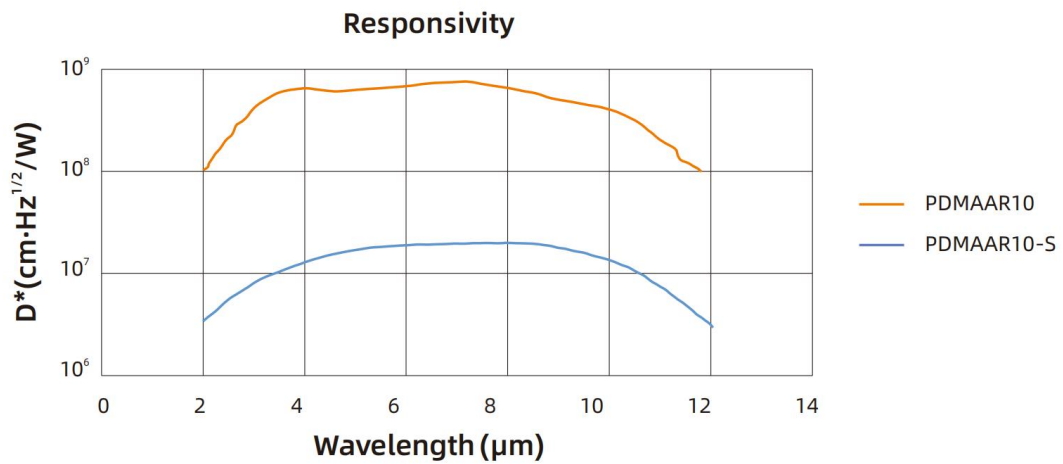


Signal Bias	$\pm 8\text{mV(Typ.)}$, $\pm 12\text{mV(Max)}$
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Response curve

2-12umMCT amplified photodetector/2-12umMCT amplified photodetector

sensitive model



Product Configuration





Attachment 1: Optional Configuration Table

Cadmium Mercury Telluride (MCT) Photodetector	Optional Configurations				
Product Name	Material	Type	Features	Wavelength Range Sensitive Area	Optional Configurations
PD: "Photodetector "	M: MCT (Cadmium Mercury Telluride)	A: Amplified	A: Adjustable Gain	S10: 1-5um , 1mm ×1mm	-S: Sensitive version for 2-12um
				R10 : 2-12um , 1mm× 1mm	