

## 800-1700nm InGaAs amplified photodetector, active area $\Phi 10.0\text{mm}$



### ● Product Description

The InGaAs amplified photodetector from IdealPhotonics covers a detection range from 800nm to 1700nm. It features 8 levels of adjustable gain, enabling quantitative photoelectric conversion with a wide dynamic range. It is suitable for various photoelectric development scenarios, offering excellent performance and cost-effectiveness, with comprehensive technical support. It is commonly used in near-infrared light measurement.



## ● Product features

Detection Range: 800nm – 1700nm, commonly used in near-infrared light measurement、 Bias-type Detector, Extremely low noise, fast response, no gain、 Low Cost: Suitable for high-speed laser pulse or light-emitting event intensity-time waveform measurement 、 Excellent Performance: High cost-performance ratio with comprehensive technical support 、 Non-standard customization services available

## ● Part Number

MP-PDJAA8J100

## ● Application area

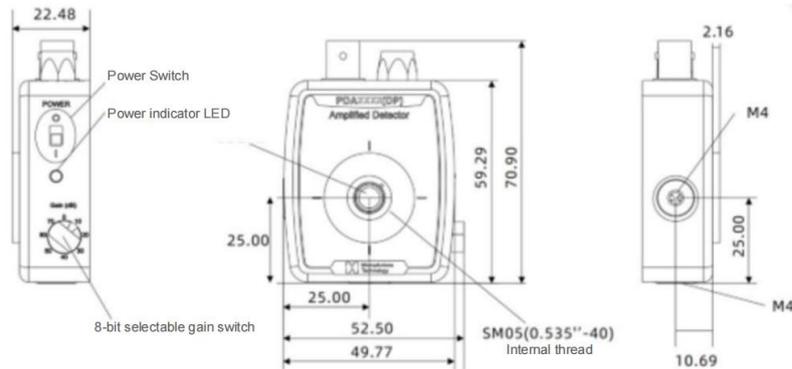
Near-infrared light measurement

## ● Core parameters

Wavelength Range	Active area	Response Time Constant
800-1700nm	Φ10.0mm	1200ns



## ● Dimension Drawing



## ● General Parameters

### Main Parameters

Parameter	Value					
Wavelength Range	800-1700nm					
Active area	Φ 1.0mm	Φ 2.0mm	Φ3.0mm	Φ 5.0mm	Φ 8.0mm	Φ 10.0mm
Response Time Constant	10ns	25ns	120ns	300ns	650ns	1200ns
Bandwidth Range	DC ~ 13MHz	DC ~ 11MHz	DC~4MHz	DC ~ 1MHz	DC ~ 100KHz	DC ~ 10KHz
Gain Range	Hi-Z load: 1.51kV/A~4.75MV/A; 50Ω load: 0.75kV/A~ 2.38MV/A					
Signal Amplitude	Hi-Z load: 0~10V; 50Ω load: 0~5V					



<b>Gain Adjustment Method</b>	Rotary switch: 0~70dB, with 8 steps (10dB per step). Bandwidth is inversely proportional to gain.					
<b>Light Sensitive Surface Depth</b>	0.13" (3.3 mm)					
<b>Detector Net Weight</b>	0.10kg					
<b>Operating Temperature</b>	10-40°C					
<b>Storage Temperature</b>	-20-70°C					
<b>External Dimensions</b>	2.79" X 2.07" X 0.89" (70.9 mm X 52.5 mm X 22.5 mm)					
	6.1 × 10 <sup>-11</sup> ~2. 28 × 10 <sup>-12</sup>	4.6 × 10 <sup>-11</sup> ~2. 24 × 10 <sup>-12</sup>	3.8 × 10 <sup>-11</sup> ~2. 17 × 10 <sup>-12</sup>	2.2 × 10 <sup>-11</sup> ~2. 01 × 10 <sup>-12</sup>	1.5 × 10 <sup>-11</sup> ~1 .57 × 10 <sup>-12</sup>	
<b>NEP</b>	pW/Hz <sup>1/2</sup>	pW/Hz <sup>1/2</sup>	pW/Hz <sup>1/2</sup>	pW/Hz <sup>1/2</sup>	pW/Hz <sup>1/2</sup>	--
<b>Power Supply Interface</b>	Power Supply Switch	Signal Interface	Gain Adjustment	Support Interface	Optical Interface	
<b>LUMBERG RSMV 3 FEMALE</b>	Sliding switch with LED indicator	BNC female socket	8-step rotary knob	M4×2	SM1 × 1  SM0.5 × 1	

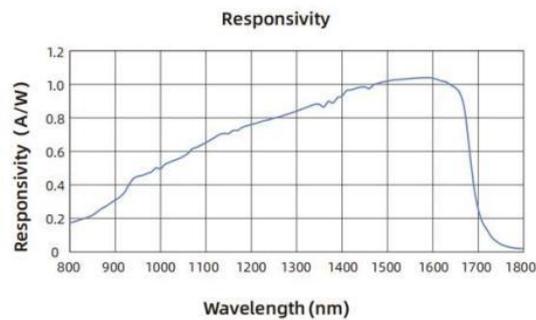
### Eight-Step Quantitative Adjustable Gain Parameters:

0dB		10dB		20dB		30dB	
Gain (Hi-Z)	$1.51 \times 10^3 \text{ V/A}$	Gain (Hi-Z)	$4.75 \times 10^3 \text{ V/A}$	Gain (Hi-Z)	$1.5 \times 10^4 \text{ V/A}$	Gain (Hi-Z)	$4.75 \times 10^4 \text{ V/A}$
Gain (50 $\Omega$ )	$0.75 \times 10^3 \text{ V/A}$	Gain (50 $\Omega$ )	$2.38 \times 10^3 \text{ V/A}$	Gain (50 $\Omega$ )	$0.75 \times 10^4 \text{ V/A}$	Gain (50 $\Omega$ )	$2.38 \times 10^4 \text{ V/A}$
Bandwidth (BW)	12MHz	Bandwidth (BW)	1.6MHz	Bandwidth (BW)	1MHz	Bandwidth (BW)	260kHz
Noise (RMS)	258uV	Noise (RMS)	192uV	Noise (RMS)	207uV	Noise (RMS)	211uV
40dB		50dB		60dB		70dB	
Gain (Hi-Z)	$1.51 \times 10^5 \text{ V/A}$	Gain (Hi-Z)	$4.75 \times 10^5 \text{ V/A}$	Gain (Hi-Z)	$1.5 \times 10^6 \text{ V/A}$	Gain (Hi-Z)	$4.75 \times 10^6 \text{ V/A}$
Gain (50 $\Omega$ )	$0.75 \times 10^5 \text{ V/A}$	Gain (50 $\Omega$ )	$2.38 \times 10^5 \text{ V/A}$	Gain (50 $\Omega$ )	$0.75 \times 10^6 \text{ V/A}$	Gain (50 $\Omega$ )	$2.38 \times 10^6 \text{ V/A}$



Bandwidth (BW)	90MHz	Bandwidth (BW)	28MHz	Bandwidth (BW)	9kHz	Bandwidth (BW)	3kHz
Noise (RMS)	214uV	Noise (RMS)	234uV	Noise (RMS)	277uV	Noise (RMS)	388uV
Signal Offset	$\pm 8\text{mV(Typ.)}$ , $\pm 12\text{mV(Max)}$						

### Response Curve



### Product Configuration





### Attachment 1: Optional Configuration Table

#### Configuration Table

InGaAs Amplified Photodetect or	Optional Configuration				
Product Name	Material	Type	Features	Wavelength Range Active area	Reserved Optional Configurati on
Photodetect or	InGaAs (Indium Gallium Arsenide)	Amplifyin g	Adjustable Gain	800-1700nm , $\Phi$ 1.0mm	
				800-1700nm , $\Phi$ 2.0mm	
				800-1700nm , $\Phi$ 3.0mm	

				800-1700nm , $\Phi$ 5.0mm	
				800-1700nm , $\Phi$ 8.0mm	
				800-1700nm , $\Phi$ 10.0m m	

**Attachment 2: Model Cross-reference Table**

Model	Specs
MP-PDJAA 8J10	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 1.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC ~13MHz
MP-PDJAA 8J20	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 2.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC ~ 11MHz
MP-PDJAA 8J30	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 3.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC~4MHz
MP-PDJAA 8J50	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 5.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC ~1MHz



MP-PDJAA 8J80	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 8.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC ~100kHz
MP-PDJAA 8J100	800-1700nm InGaAs Amplified Photodetector, Active area $\Phi$ 10.0mm, 0~70dB 8-level Adjustable Gain, Bandwidth Range DC ~ 10kHz