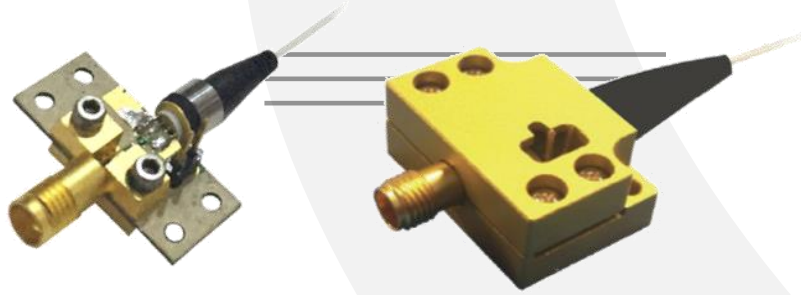


# PD-30e



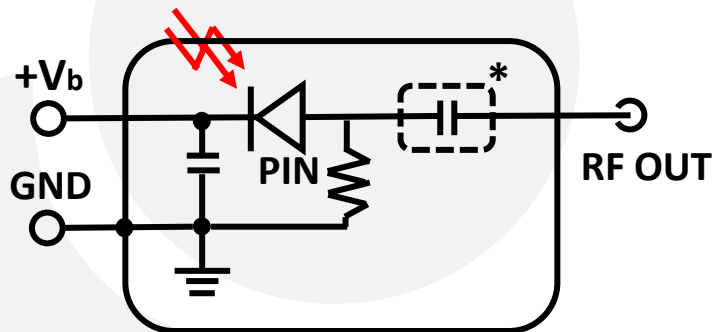
## DEVICE 30 GHz Linear InGaAs PIN Photodetector, Enhance for 1064nm

**OVERVIEW** The Optilab PD-30e is a highly linear, 30 GHz bandwidth InGaAs PIN photodetector that is optimized for 1064nm operational wavelength; it is ideal for use in O/E front-ends requiring wide band frequency response. The coplanar waveguide photodiode design optimizes speed and sensitivity for the 1030 nm through 1570 nm wavelength range and assures a 30 GHz frequency response necessary for digital and analog applications. The front-illuminated mesa-structured PIN design allows a high input power level of up to 20 mW. The PD-30e is available in a standard 2-pin package with K type RF connector output for ease of assembly and can be ordered with or without the external protective housing. Contact Optilab for more information.

- FEATURES**
- Optimized for 1064nm
  - 60 kHz to 30 GHz, AC coupled
  - DC to 30 GHz, DC coupled
  - Responsivity 0.6 A/W @1060nm
  - Flat frequency response,  $\pm 1$  dB
  - Highly linear to 20 mW+ input power

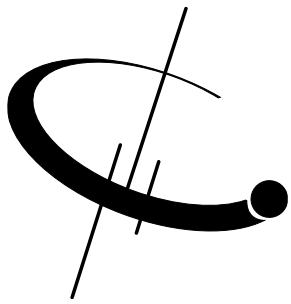
- USE IN**
- 30 GHz Analog RF over Fiber
  - YDFA amplified photonics link
  - 1064nm picosecond pulse detection
  - Coherent lightwave systems
  - Front-End O/E converter for test instrument

### FUNCTIONAL DIAGRAM



\*Optional DC Block for AC Coupled Version





# PD-30e

## SPECIFICATIONS

### GENERAL

Optimized Operating Wavelength	1030 nm to 1090 nm
Useful Operating Wavelength	1030 nm to 1570 nm
Optical Input Level	20 mW max.
S21 3 dB Bandwidth	28 GHz min., 30 GHz typ.
S22 Characteristics	< -10 dB @ 20 GHz
Low Frequency Cut Off	60 kHz
Responsivity	0.60 A/W @ 1060 nm typ. 0.75 A/W @ 1550 nm typ.
Dark Current @ 25° C	10 nA typ., 100 nA max.
Optical Return Loss	-30.00 dB typ.
Optical PDL @ 1550 nm	0.05 dB max.
Bias Voltage	4 V typ.
Impedance	50 Ω
Coupling	DC-Coupled, AC-Coupled is available

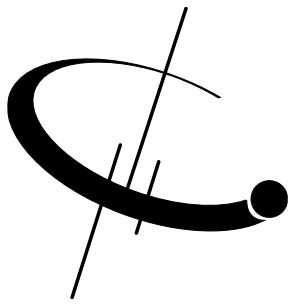
### MECHANICAL

Operating Temperature	-10 °C to +60 °C
Storage Temperature	-55 °C to +75 °C
Operating Humidity	85%
Photodiode Bias Voltage	5 V, ± 1 V DC
Package Type	K Connector Female
Dimensions	30 mm x 20 mm x 14 mm
Fiber Connector	FC/APC
Optical Fiber	SMF-28 with 900 mm tube (H11060 fiber available upon request)

### ABSOLUTE MAXIMUM RATINGS

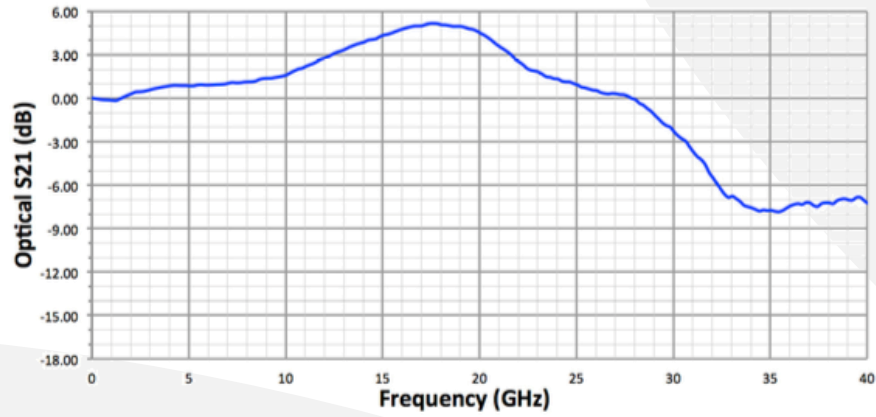
PIN Bias Voltage	+2.0 to +7 V
Forward Current	35 mA
Optical Input Power	30 mW
Lead Soldering Temp (10s)	250 °C



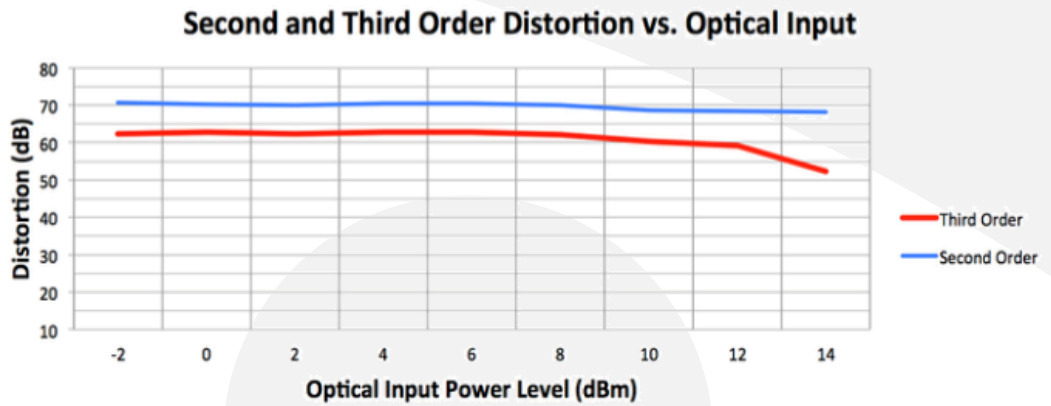


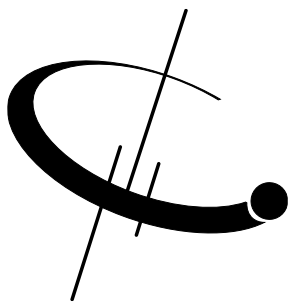
# PD-30e

## S21 O/E RESPONSE



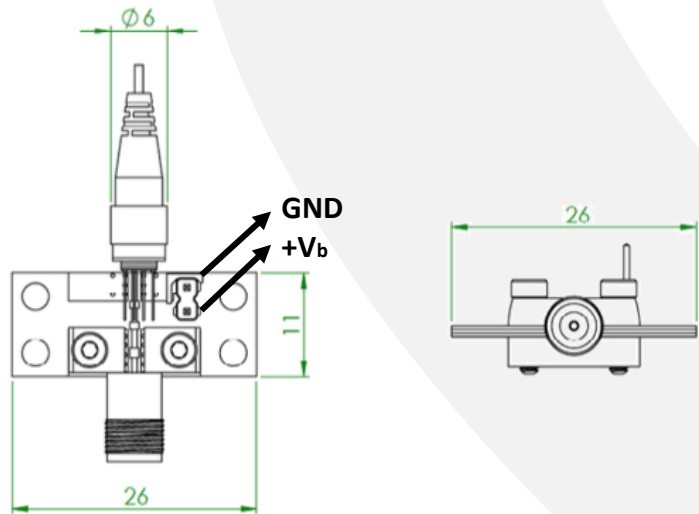
## CSO, CTB LINEARITY MEASUREMENT



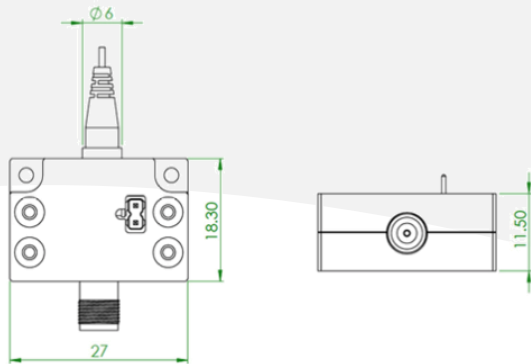


# PD-30e

PD-30e-A Mechanical Drawing



PD-30e-C Mechanical Drawing



**Mechanical Design Material**  
- Aluminum Alloy Design

Unit: mm

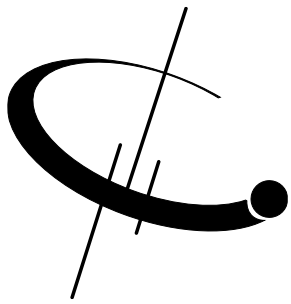
PD-30e-M: Module



**Ready to use module**

- Power and Remote Monitoring via USB Port
- Status Monitoring: RS-232 (Standard)
- No TIA for Intrinsic Phase Linearity





# PD-30e

## Related Amplifier

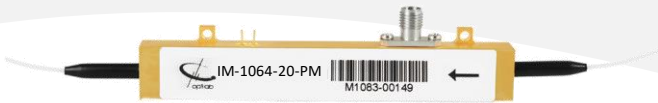
- YDFA-PA-MSA



The Optilab YDFA-PA-MSA is a high-gain 1064nm pre-amplifier module in a compact housing

## Related Modulator

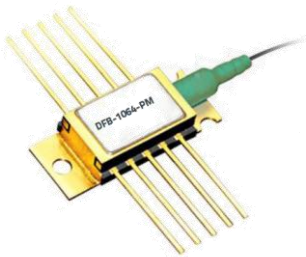
- IM-1064-20-PM



The Optilab IM-1064-20-PM Intensity Modulator is designed for external modulation of 1064 nm laser up to 20 GHz or generation of 100ps pulse

## Related Laser Source

- DFB-1064-PM-100



The Optilab DFB-1064-PM-100-CW is a 100mW Distributed FeedBack Laser designed for seed laser for MOPA laser

## ORDERING OPTIONS

### PD-30e-X-YY

X : A - No Housing, default, C - External Housing

YY : AC - AC coupled, DC - DC coupled

