PDA030 Amplified photodetector

The MOGLabs PDA030 (PDA030-IR) are amplified silicon (InGaAs) photodetector designed for Pound-Drever-Hall optical cavity locking. It provides high bandwidth, high quantum efficiency and low noise in a convenient mechanical enclosure with standard connectors.

The 50 Ω impedance signal is provided via an *isolated* BNC connector that helps eliminate ground loops. Power, for example from the MOGLabs FSC fast servo controller, is easily provided via Thorlabs-compatible M8 connector and standard industry M8 sensor cable. Optical tubes, filters and lenses are easily mounted using the standard SM1 threaded ring.

Features

- Internal transimpedance amplifier 7.5 kV/A
- High bandwidth DC to 30 MHz (Si)
- Low noise NEP 7.5×10^{-15} W/$\sqrt{\text{Hz}}$ (Si)
- Wide spectral response
  Si 300 – 1060 nm; InGaAs 800 – 1750nm
- High quantum efficiency 0.64 at 900 nm (Si)
- Isolated BNC connector to avoid ground loops
- Standard M8 power connector ±7 to ±15 v
- SM1 (1.035”-40) internal thread optical tube mount

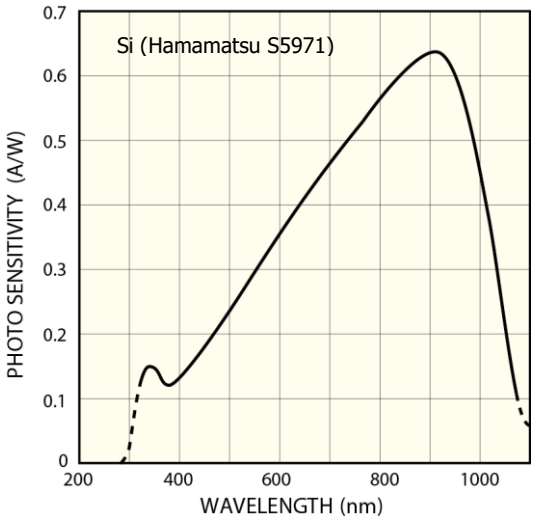
Applications

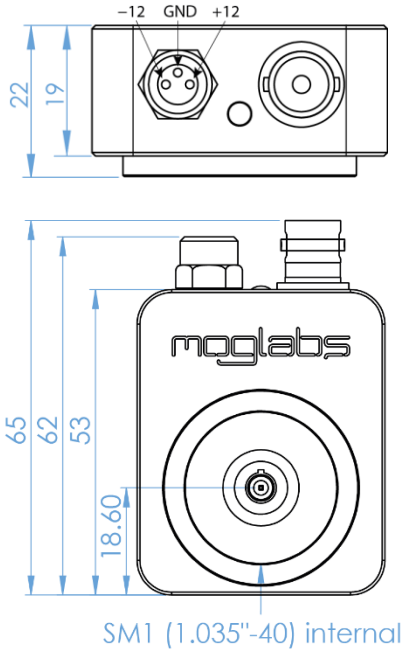
- PDH laser frequency stabilisation
- Intensity noise eating

Specifications

Signal	
Bandwidth (fast output)	Si DC – 30 MHz (–3 dB); InGaAs DC – 20MHz (-3dB)
Noise equivalent power	TBD
Active area	Si Φ 1.2mm (1.1 mm^2 area)
Sensor	Silicon Hamamatsu S5971 (option: S5972, S5973) or InGaAs
Quantum efficiency	Si peak 0.64 at 900nm; see response curve below
Gain	7500 V/A

Mechanical	
Power	±7 to ±15 V, 100 mA, M8 connector
Dimensions	43x53x19mm (W x H x D) body; 43x65x22 inc connectors and SM1 ring
Mounting	3 x M4/8-32 tapped holes
Signal connector	Isolated BNC 50 Ω impedance
Optics mount	SM1 (1.035”-40) thread, internal





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