

# >12.5GHz Photodetectors

EOT's >12.5GHz Photodetectors contain PIN photodiodes that utilize the photovoltaic effect to convert optical power into an electrical current. When terminated into 50Ω into an oscilloscope, the pulsewidth of a laser can be measured. When terminated into 50Ω into a spectrum analyzer, the frequency response of a laser can be measured. EOT's >12.5GHz Photodetectors come with their own internal bias supply consisting of long-life lithium cells. Plugging a coaxial cable into the photodetector's SMA output connector and terminating into 50Ω at the oscilloscope or spectrum analyzer is all that is required for operation.



## Applications:

- Monitoring the output of Q-switched lasers
- Monitoring the output of mode-locked lasers
- Monitoring the output of externally modulated CW lasers
- Time domain and frequency response measurements

## Features:

- >12.5GHz GaAs and InGaAs Photodetectors can be ordered with optional wall plug-in power supply

## Specifications<sup>a,b</sup>:

Part No. (Model)	120-10058-0001 (ET-3500)	120-10068-0001 (ET-3500F)	120-10071-0001 (ET-4000)	120-10081-0001 (ET-4000F)
Detector Material	InGaAs	InGaAs	GaAs	GaAs
Rise Time/Fall Time	<25ps/<25ps	<25ps/<25ps	<30ps/<30ps	<30ps/<30ps
Responsivity <sup>c</sup>	>0.90A/W at 1300nm	>0.65A/W at 1300nm	0.53A/W at 830nm	0.38A/W at 830nm
Power Supply	6VDC	6VDC	3VDC	3VDC
Bandwidth	>15GHz	>15GHz	>12.5GHz	>12.5GHz
Active Area Diameter	32μm	32μm	60μm	60μm
Dark Current	<3nA	<3nA	<0.5nA	<0.5nA
Acceptance Angle (1/2 angle)	15°	N/A	15°	N/A
Noise Equivalent Power <sup>d</sup>	20pW/√Hz at 1300nm	28pW/√Hz at 1300nm	35pW/√Hz at 830nm	45pW/√Hz at 830nm
Maximum Linear Rating CW	10mW	10mW	10mW	10mW
Mounting (Tapped Holes)	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4
Output Connector	SMA	SMA	SMA	SMA
Fiber Optic Connection <sup>e</sup>	N/A	FC/UPC, SMF28e	N/A	FC/UPC, SMF28e

<sup>a</sup> Product specifications are subject to change.

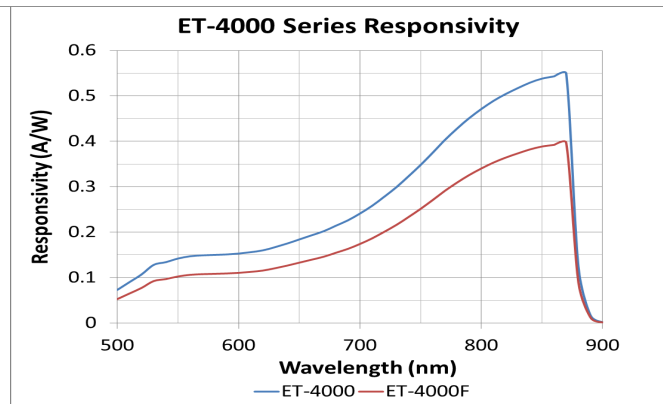
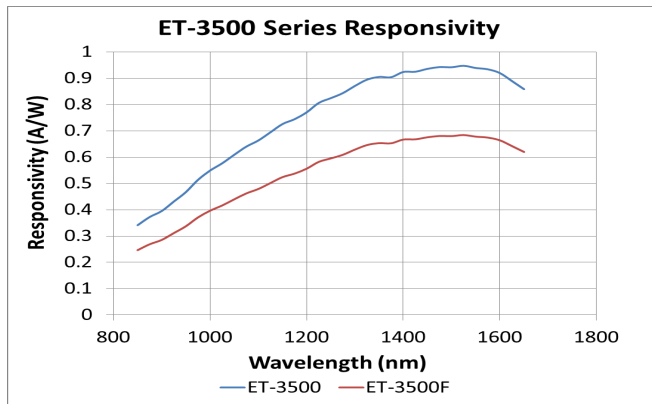
<sup>b</sup> All specifications apply for a 50Ω termination unless otherwise noted.

<sup>c</sup> Photodetectors have an internal 50Ω termination. Responsivity data applicable to diode only. Detector output should be determined based on 1/2 the responsivity of that shown on graph.

<sup>d</sup> Noise Equivalent Power (NEP) is determined via open circuit output.

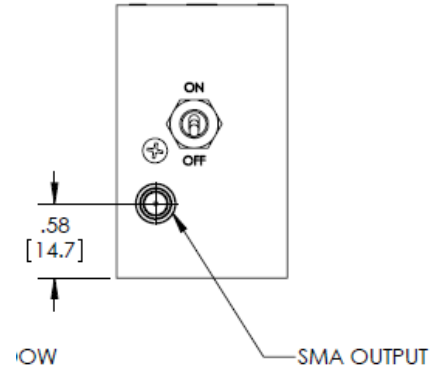
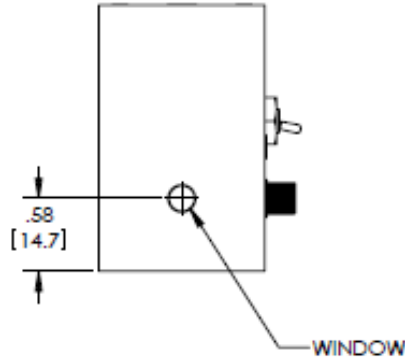
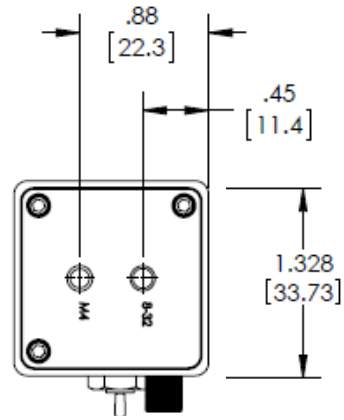
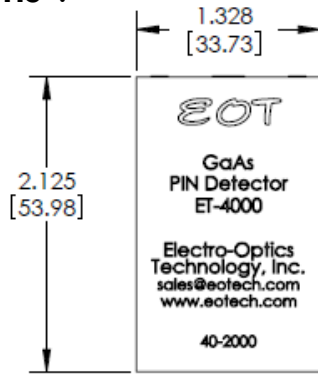
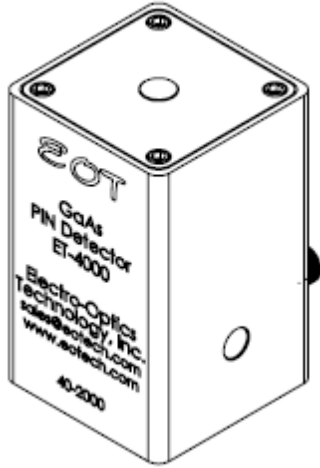
<sup>e</sup> Multi-mode fiber available. May limit bandwidth.

Note: All products are RoHS compliant.



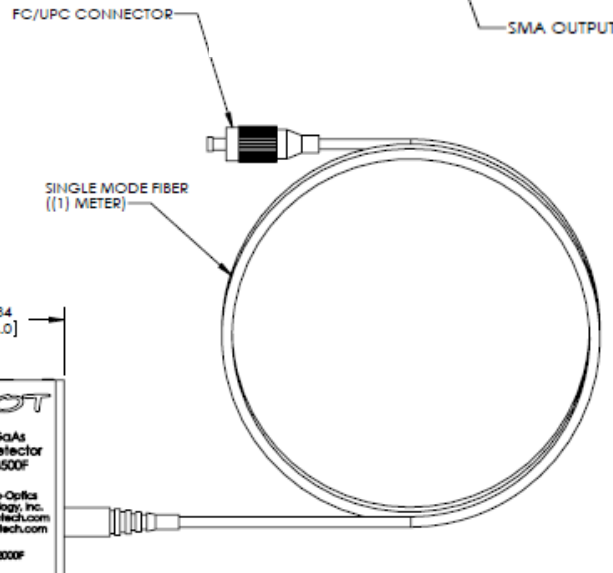
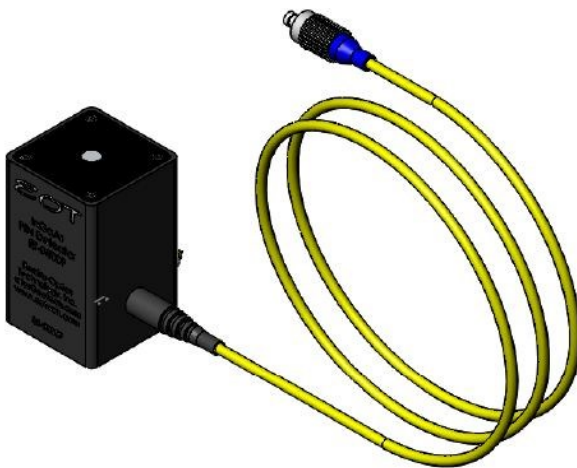
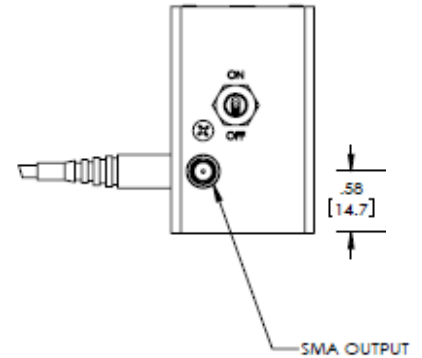
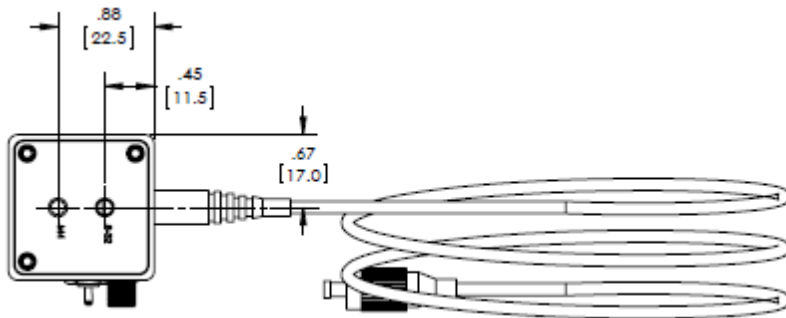


### ET-3500, 4000 Dimensions<sup>∘</sup>:



<sup>∘</sup> All dimensions in inches

### ET-3500F, 4000F Dimensions<sup>∘</sup>:



<sup>∘</sup> All dimensions in inches

Electro-Optics Technology, Inc.  
3340 Parkland Ct. Traverse City, MI 49686 USA  
(231)935-4044 | (800)697-6782 | Fax: (231)935-4046 | sales@eotech.com | www.eotech.com (10/19/2015)



Photonic Solutions Ltd Unit 2.2, Quantum Court, Research Avenue South,  
HWU Research Park, Edinburgh, EH14 4AP, UK, Tel: +44 (0)131 664 8122  
Email sales@photronicsolutions.co.uk Web www.photronicsolutions.co.uk