

# High-Speed Polarimeter - PolaDetect™

## POD-201

The POD-201 is an FPGA powered in-line polarimeter specially designed for high-speed polarization analysis and monitoring. The instrument uses four channels to simultaneously obtain the four Stokes parameters and measure the instantaneous state of polarization (SOP) and degree of polarization (DOP) of an input light beam. A USB 2.0 interface enables data to be transferred directly to a computer at a rate up to 30 MB/s. Thanks to the high speed FPGA electronics, this polarimeter easily monitors and analyzes fast polarization changes with a sampling rate of up to 4MS/s. The POD-201 comes with PolaView™ software for real-time graphic display of polarization state either on a Poincaré Sphere window for viewing SOP traces or on an oscilloscope window for monitoring polarization changes over time. It can be quickly and easily calibrated using its built-in self-calibration program to optimize DOP and SOP accuracies at special wavelengths and temperatures. With a suitable light source and measurement techniques, it can be used to measure polarization extinction ratio (PER) to aid in aligning PM fiber to laser sources. The POD-201 replaces the POD-101D, with higher sampling speed and larger optical input power range. New features include long-term SOP monitoring, SOP markers for angle measurement, extended triggering capability in oscilloscope mode, an OLED display for easy setup and data display and a configurable analog SOP/DOP/power output for easy integration with automated test systems. The POD-201 is available in two configurations: a two-port inline version to monitor a signal without interruption, and a one-port remote head option that can accommodate free-space inputs.



### Specifications

Operating Wavelength Range <sup>1</sup>	1480 - 1620 nm or 1280 - 1340nm
Analog Bandwidth <sup>2</sup>	1 MHz
Sampling Rate (max)	4.0M SOP samples/s
SOP Uncertainty <sup>3</sup>	± 0.25° after user calibration
DOP Uncertainty <sup>3</sup>	± 2% using built-in calibration ± 0.5% after user calibration
PER Measurement Range <sup>3</sup>	0 to 40 dB
PER Resolution	0.1 dB
Insertion Loss	1.2 dB max. at center wavelength
Return Loss	55 dB (APC connector), 45 dB (PC connector)
PDL	<0.25 dB
PMD	<0.1 ps
Aperture Size (remote head)	2.5mm
Operating Power Range	-35 to +10 dBm (2-port in-line)
Optical Power Uncertainty <sup>3</sup>	± 0.25 dB
Optical Power Damage Threshold	300 mW
Operating Temperature	0 °C to 40 °C
Storage Temperature	-20 °C to 60 °C
Front panel display	OLED Graphic Display
Communication Interfaces	High Speed USB 2.0 (30 MB/s data rate)- PolaView RS-232, GPIB, Ethernet
Analog Output	0 to 5V max range, user configurable Monitor voltage for DOP, S1, S2, S3, or power
Power Supply	100-240 VAC, 50-60 Hz
Software	PolaView™ (included)
Dimensions	2U 19" half rack width 14" (L) x 8.5" (W) x 3.5" (H)

Notes: Unless otherwise noted, specifications listed in table apply for standard in-line configurations with 1480 - 1620nm or 1280-1340nm wavelengths at 23±5 °C. Loss specifications are referenced without connectors. 1. Other wavelengths may be possible Contact General Photonics for details.  
2. For input power >-10 dBm for 2-port in-line version. At lower power levels, bandwidth may change due to automatic gain control.  
3. For input power >-25 dBm for 2-port in-line version.

### Applications:

- 100G system polarization test
- SOP/DOP monitoring
- Polarization analysis
- Scrambler DOP characterization
- SOP statistics
- PM fiber alignment to light sources

### Unique Features:

- 4 MHz polarization sampling rate
- Up to 1 MHz analog bandwidth
- Real time Poincaré Sphere display
- Continuous measurement
- External trigger
- Long term polarization monitoring
- PER measurement

### Ordering Information:

POD - 201 - X - XX - XXX

Configuration:

I = 2-port in-line

R = 1-port, remote head

Connector Type:  
FC/PC, FC/APC  
SC/PC, SC/APC

Wavelength:

15 = 1550 nm

13 = 1310nm

Others specify

General Photonics Corp.  
5228 Edison Ave.  
Chino, CA 91710

Tel: 909.590.5473  
Fax: 909.902.5536

Email:  
info@generalphotonics.com

Website:  
www.generalphotonics.com

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東京本社 〒160-0014 東京都新宿区内藤町1番地 内藤町ビルディング TEL:03-3356-1064  
大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館 TEL:06-6305-2064  
名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル TEL:052-569-6064

E-mail: info@optoscience.com