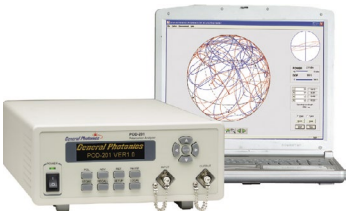
Making Light Work Lighter
General Photonics

LASER COMPONENTS®

MEASUREMENT AND CHARACTERIZATION

Polarimeter - PolaDetect™ (POD-201)



The POD-201 is an FPGA powered 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. Features include long-term SOP monitoring, SOP markers for angle measurement, a "SOP replay" function in sphere display mode, 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 standard configuration is a two-port inline version, to monitor a signal without interruption.

Specifications:

Operating Wavelength Range[1]	1480 to 1620 nm or 1280 to1340 nm
Analog Bandwidth[2]	1 MHz
Sampling Rate (max)	4.0M SOP samples/s
SOP Uncertainty[3]	±0.25° after user calibration
DOP Uncertainty[3]	±2% using built-in calibration ±0.5% after user calibration
PER Measurement Range[3]	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
Operating Power Range	-35 to +10 dBm (2-port in-line)
Optical Power Uncertainty[3]	± 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	Graphic OLED
Communication Interfaces	High Speed USB 2.0 (30 MB/s data rate) for PolaView software RS-232, Ethernet, GPIB
Analog Output	0 to 5 V max range, user configurable Monitor voltage for DOP, S1, S2, S3, power or dREF
Electrical 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 fiber-coupled in-line configurations with 1480 - 1620nm or 1280-1340nm operation at 23±5 °C. Specs for one-port remote head may be slightly different. 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.

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PolaView™ Display Interfaces:

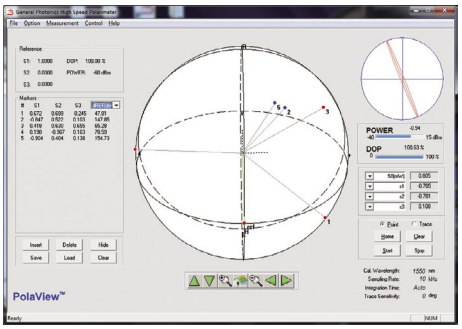

Figure 1. Poincaré sphere display with markers

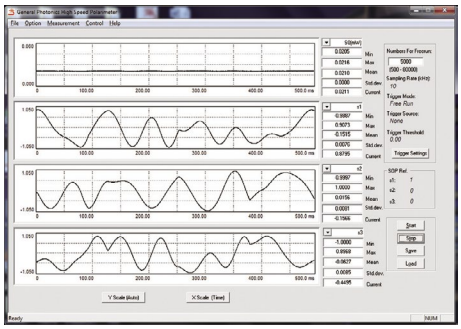

Figure 2. Oscilloscope display

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

Applications:

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

Related Products:

- Multifunction Polarization Controller (MPC-203, MPC-202, MPC-201)
- Polarization Scramblers (PCD-104, PSM-002)
- Polarization Synthesizer (PSY-201)
- Rack Mount Kit (RCK-001)
- Components

Tech Info:

- What is Polarization?
- Polarization Related Tests for Coherent Detection Systems
- Real-Time Optical Spectrum Analysis of a Light Source Using a Polarimeter

FAQ:

- Polarimeter

Ordering Information:

POD — 201 — □ — □□ — □

Configuration:
I = 2-port in-line

Wavelength:
15 = 1550 nm
13 = 1310nm
Others specify

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

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