

## High Speed In-line Polarimeter – PolaDetect™



General Photonics' in-line polarimeter is specially designed for low cost, high-speed polarization characterization without interrupting data traffic. It outputs four voltage signals for calculating both the degree of polarization (DOP) and the state of polarization (SOP) of the light passing through the device in microseconds. PolaDetect™ is ideal for integration into polarization monitoring and polarization stabilization modules, or in polarization characterization instruments. It comes with a preamplification board to provide analog signals for SOP/DOP calculation, feedback control, and computer interface. A calibration matrix is provided with every device for the calculation. Devices without preamplification board and calibration matrix are also available for OEM purposes. The output fiber can either be single mode or PM fiber.

## Specifications:

Insertion Loss	0.8 dB typical, 1.2 dB max.
Return Loss	55 dB
PDL	< 0.25 dB
PMD	< 0.1 ps
Wavelength Dependent Loss	0.15 dB over C band
Optical Power Sensitivity	5 $\mu$ W
Max. Optical Input Power	5 mW
Optical Damage Power	300 mW min.
Measurement Bandwidth	50 kHz with preamplifier board Analog bandwidth for optical head alone is 1.5 MHz
SOP Accuracy (At Calibration Wavelength)	1% max.
DOP Accuracy (At Calibration Wavelength)	$\pm$ 2% max
Wavelength Range <sup>1</sup>	1550 $\pm$ 50nm standard
Operating Temperature	0 ~ 40 °C
Storage Temperature	-40 ~ 85 °C
Optical Module Dimension	1.45" $\times$ 0.8" $\times$ 0.58"
Fiber Type	SMF-28 to SMF-28
Electrical Interface	10 pin w/o preamplifier board 20 pin w/ preamplifier board
Electrical Power Supply	-5 V ~ -10 V w/o preamplifier boards $\pm$ 12 V w/ preamplifier board
Preamplifier Board Dimensions	125 $\times$ 50 mm

Note: Values are referenced without connectors.

1. Contact General Photonics regarding other wavelengths.

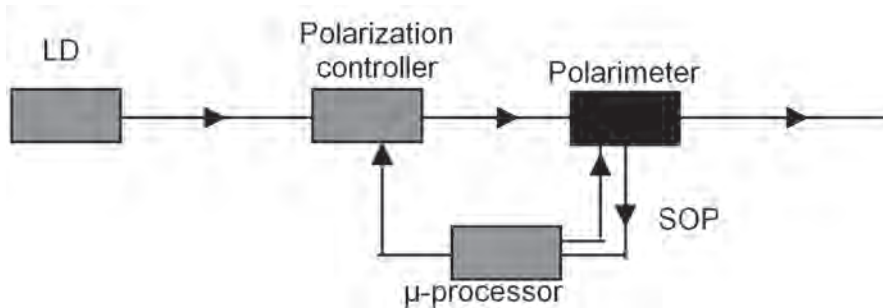
## Features:

- High speed and low loss
- Compact size
- No moving parts

Tech Info: pp. 91, 152, 157  
FAQ: p. 174

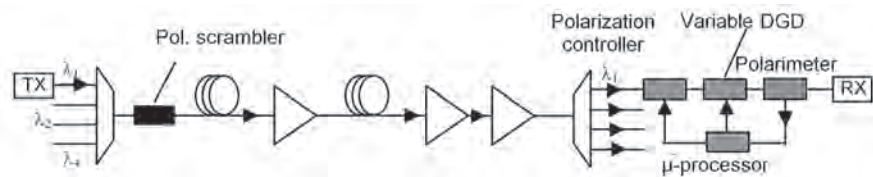


Applications:

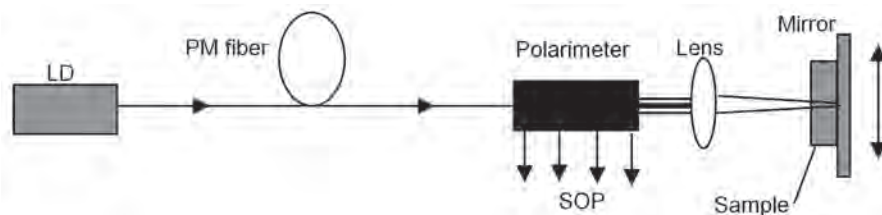


Polarization stabilization

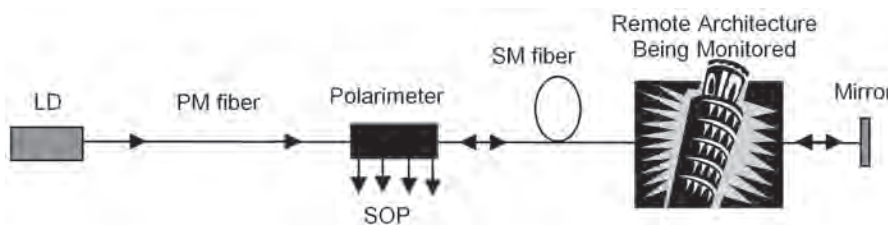
Polarization division multiplexing



PMD compensation/measurement



Sample/tissue birefringence analysis (Con-focal arrangement)



Remote sensing (remote stress analysis)

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Typical Performance Data:

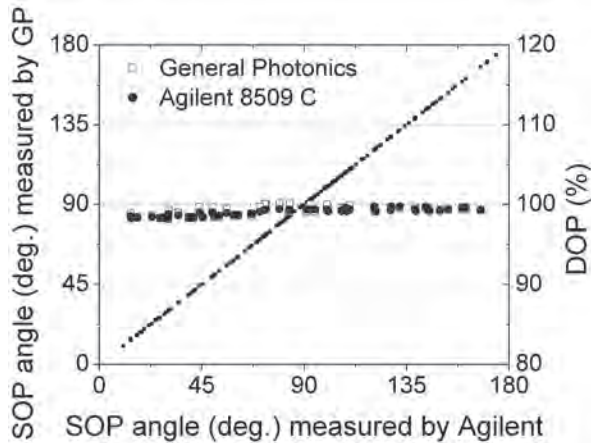


Figure 1. SOP and DOP accuracy compared with Agilent 8509C polarization analyzer.

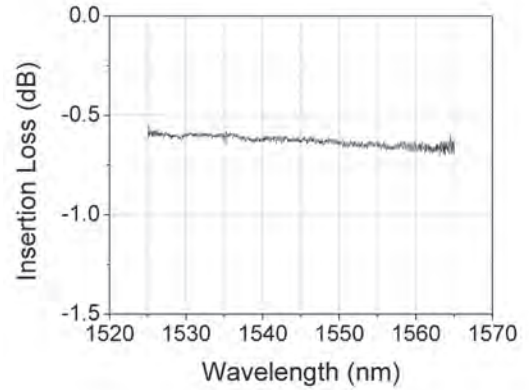


Figure 2. Insertion loss vs. wavelength

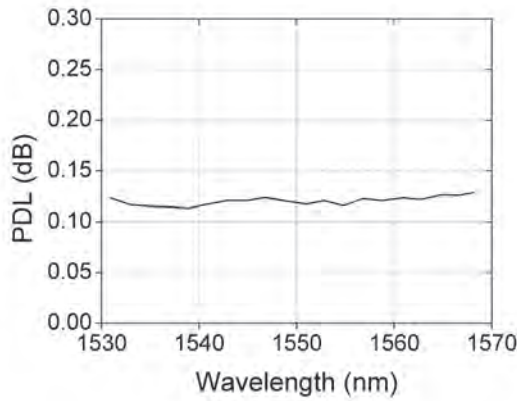


Figure 3. Polarization dependent loss (PDL) vs. wavelength

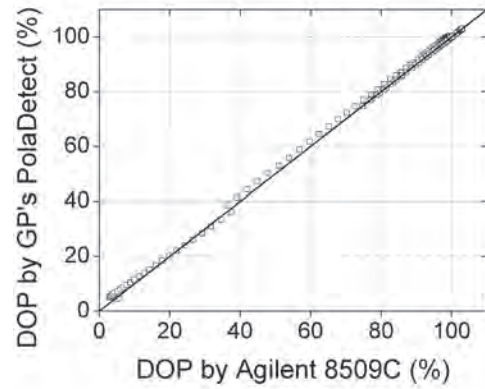
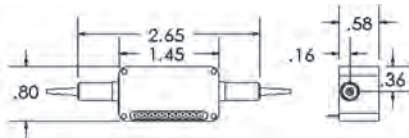
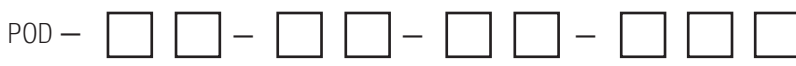


Figure 4. Partial polarized light DOP measurement compared with Agilent 8509C

Dimensions (inches) :



Ordering Information:



15 = 1550 nm SS = SM in / SM out 01 = w/o preamplifier 02 = with preamplifier

Connector type:  
FC/PC, FC/APC  
SC/PC, SC/APC or  
NC = no connectors  
Others specify