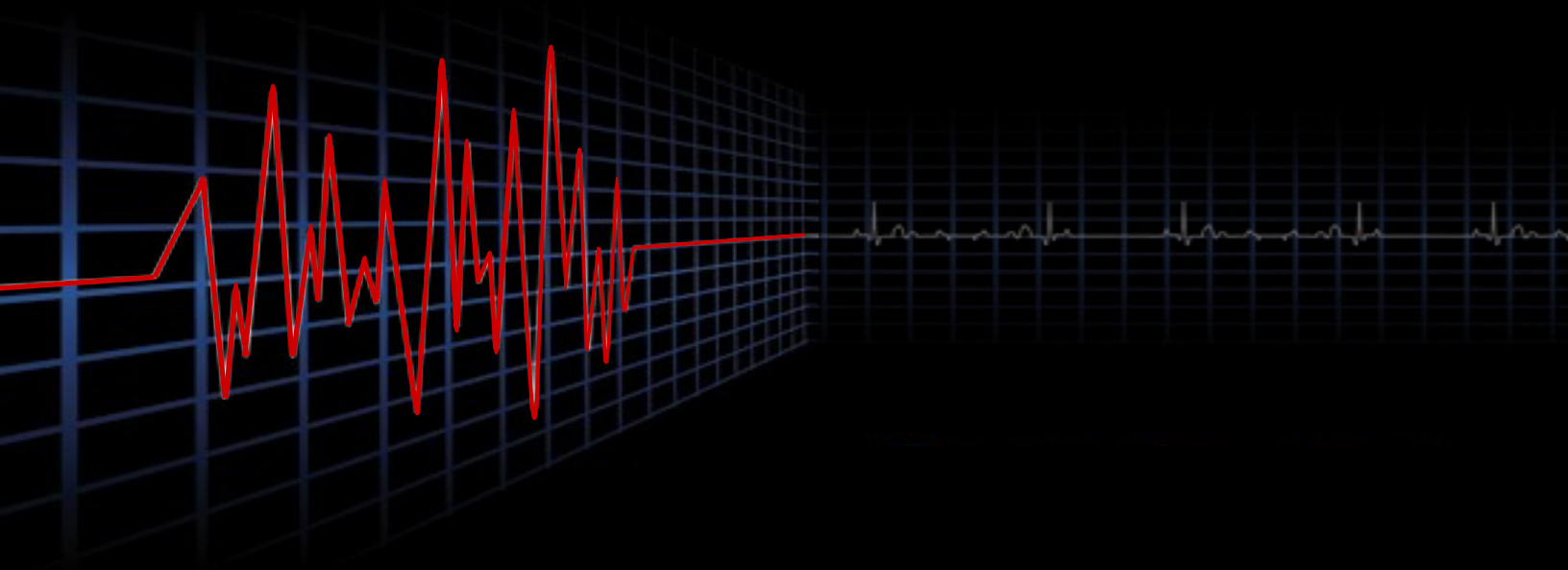


Product Catalog

Solutions for Fiber Optic Sensor Systems



Making Light Work Lighter

General Photonics

C o r p o r a t i o n



Manual Polarization Controller

Do your setup require any polarization adjustment?

The PLC-00x is a fiber-based polarization controller that manually adjusts the state of the polarization (SOP) so that it is aligned with the operating axis of a polarization sensitive component.



Wavelength	480 nm - 1650 nm
Low intrinsic loss	< 0.05 dB
Configurations	Drop-In, PigTail, and NoTail

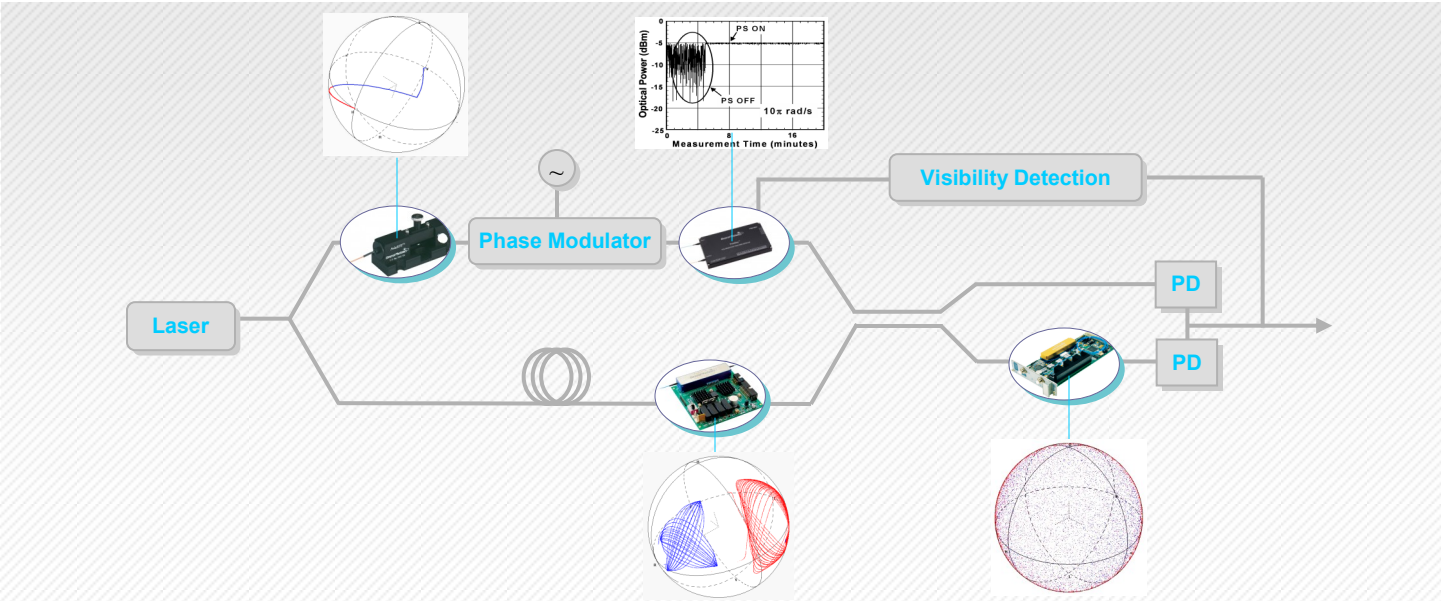
Reset-Free Polarization Tracker

Is polarization drift ever an issue in your system?

The POS-002 module finds and maintains a stable output SOP against rapid input SOP fluctuations. Such module is used to eliminate polarization fading and noise in fiber optic sensor systems.



Wavelength	1060, 1310, or 1550±50 nm
SOP Recovery Time	< 3 ms, (0.9 ms typical)
SOP Tracking Speed (Reset Free)	~ 47 π/s



Piezo Driven Polarization Controller

Do your system require dynamic adjustments of polarization states?

The MPC-3X/4X module automatically and dynamically tunes and converts the input SOP to any desired output SOP. It is used to ensure that the two polarization states are aligned before interfering to maximize the detection visibility.



Wavelength	480 nm - 1650 nm
Low intrinsic loss	< 0.05 dB
Configuration	Analog or digital controlling

Piezo Driven Polarization Scrambler

Do your system require dynamic alteration of the state of polarization?

The fiber-based scramblers, PCD-005 and PSM-00x, randomize polarization states, by placing it in front of a polarization sensitive component, to effectively eliminate its polarization dependence, mitigate polarization induced phase noise, and reduce the measurement errors.



Wavelength	980 - 1310 nm, or 1250 - 1650 nm
Output DOP	< 5%, (2.5% typical)
Configuration	Fixed or user selectable scrambling frequency

Fiber Optic Depolarizer

Are any of your measurements/ components polarization sensitive?

The DEP-00x, is a patented, passive device that depolarizes light with long coherence length to eliminate polarization sensitivity. The rugged package provides high temperature and vibration stability in extreme environments.



Wavelength	1260 - 1650 nm , others specify
Coherence Length	10 m standard, others specify
Output DOP	< 5%

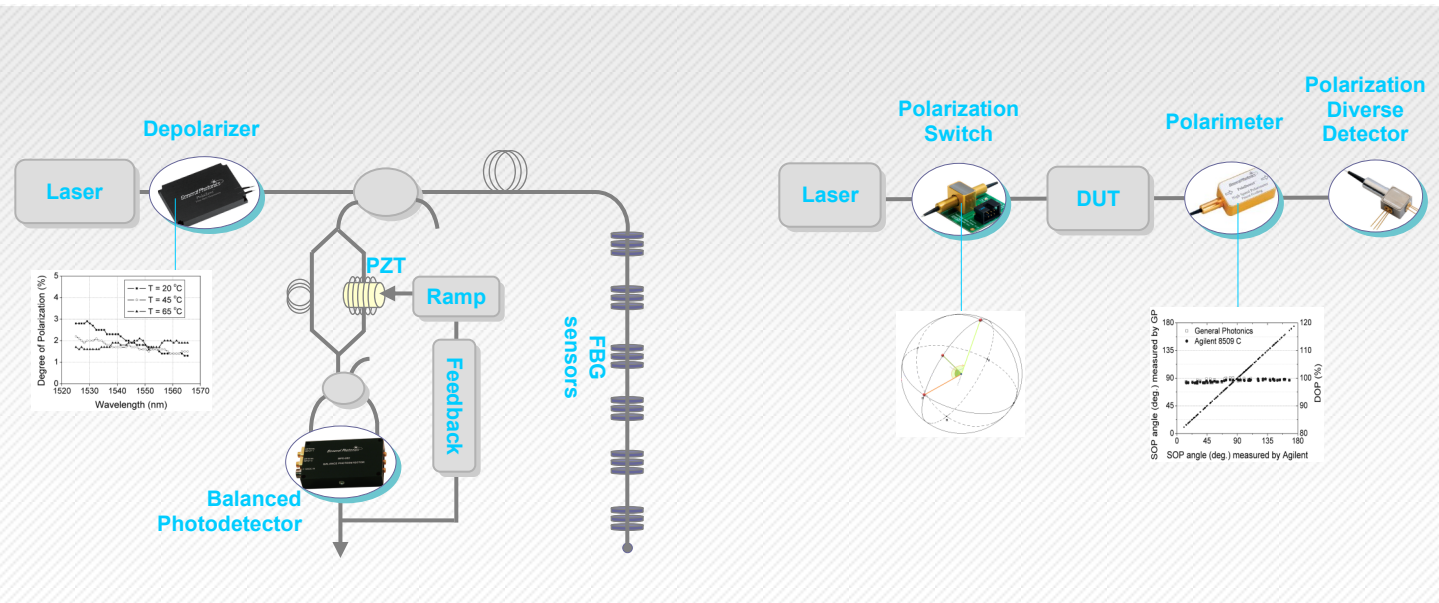
In-Line Polarimeter

Do you need to analyze/ monitor the polarization without interrupting the signal?

The POD is a low cost, compact Polarimeter that characterizes the polarization of light, in microseconds, without interrupting the signal. It outputs four voltage signals for calculating both the DOP and SOP.



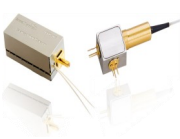
Wavelength	1550 nm $\pm$ 50 nm or 1310 nm $\pm$ 30 nm
SOP Uncertainty	1% max
DOP Uncertainty	$\pm$ 2% max



Photodetectors

Are the path lengths adjusted during a set up procedure in your interferometer?

The balanced detector (BPD-00x) accurately detects small signals and increases System's OSNR. The polarization diverse detector (PDD-00x) simultaneously detects the powers of two orthogonal polarization components of light. It is used to study the polarization changes in fiber sensor systems.



Wavelength	1060, 1310, or 1550 $\pm$ 50 nm
Transimpedance Gain	2 - 3 x 10 ⁴ V/A
RF Bandwidth	Up to 200 MHz

Polarization Switch/ Generator

Are you developing a polarization sensitive fiber optic sensing system?

The PSW-002 is all solid-state polarization switches that rotates the SOP of incoming light by a fixed angle in less than 100 μ s. The PSG-001 generates six different SOPs*, in less than 250 μ s, with high repeatability of less than 0.1 degrees.

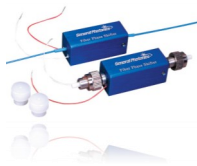


Wavelength	1310 or 1550 $\pm$ 50 nm
Polarization Rotation Angle	45° or 90° (for PSW-002)
*Possible six SOPs	-45°, 0°, 45°, 90°, RHC & LHC

Piezo Driven Fiber Phase Shifter

Do you experience any drift in the optical path after setup?

The FPS-002 is all-fiber, high speed phase shifter/ modulator which provides phase shifts up to 75π . It is used in interferometric sensing measurements of acoustics and vibrations to provide dynamic, fast tuning of small amounts of delay.



Wavelength	780 nm, up to 1650 nm
Configurations	SM or PM fiber
Operating Frequency	Up to 20 KHz

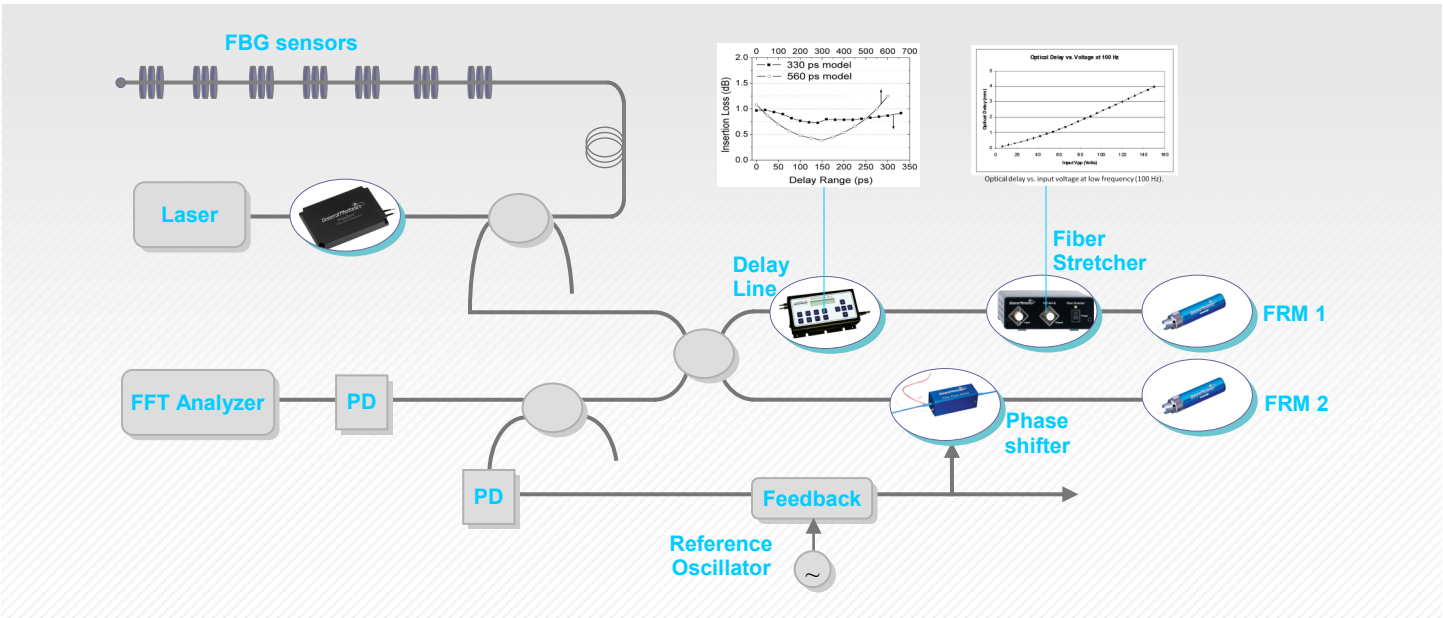
Piezo Driven Fiber Stretcher

Do any of your measurements require scanning one arm of your interferometer?

The FST-00x is a piezo-driven, high-speed optical path length scanner. It provides up to 3 mm delay (in air). The device comes complete with a piezo driver packaged in a user-friendly small enclosure.



Wavelength	780 nm, up to 1650 nm
Configurations	SM or PM fiber
Resonance Frequency	2.2 ± 0.3 kHz



Manual/ Motorized Variable Delay Line

Are the optical path lengths adjusted during a set up procedure?

The VDL-00x manually varies the optical path up to 32 cm with a 0.05 mm resolution. The MDL-00x uses a motor to automatically scan over a wide delay range to provide precision optical path length adjustment.



Wavelength	1060, 1310, or 1550 nm
Configurations	SM or PM fiber, standard or OEM version
Delay Range	Up to 1200 ps

Faraday Rotator Mirror

Do you need a fiber optic polarization rotation mirror?

The FRM reflects the input SOP after rotating it 90 degrees, which means that at any point along the fiber, the SOPs of the forward going and reflected light are always orthogonal to each other, regardless of the birefringence of the fiber. It is used for polarization sensitivity elimination in Fiber interferometers & sensors.

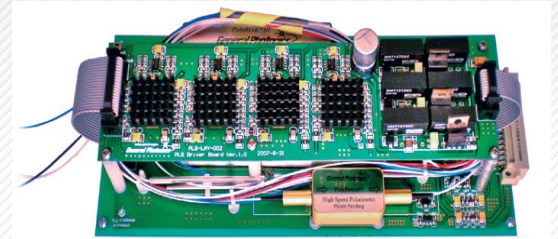


Wavelength	1310, 1550, 1064 nm
Rotation Angle λ Dependence	± 0.12 degree/nm
Rotation Angle Temp. Dependence	± 0.12 degree/ $^{\circ}$ C

Custom Modules

General Photonics recognizes that some customers may have special requirements. If you have any specific requirements, that our standard products can't meet, please let us know!

This long range polarization-stabilized fiber stretcher assembly is used in The Atacama Large Millimeter/ submillimeter Array (ALMA) observatory, in Chile. The custom module developed by General Photonics synchronizes 80 high-precision antennas.



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