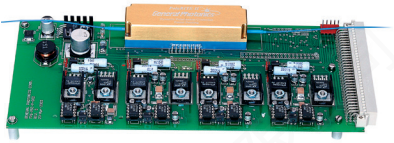


## Polarization Scrambler Module (PCD-003)



General Photonics' 4-axis Polarization Scrambler Module uses a breakthrough all-fiber technology to effectively randomize polarization states. Depolarizing by polarization scrambling has many important applications: Scrambling the input polarization can remove measurement uncertainties caused by the polarization sensitivity of the device under test. Performance degradation due to polarization-dependent-gain (PDG) induced in optical amplifiers can be suppressed by scrambling the State of Polarization (SOP). Polarization scrambling can also be used in systems to facilitate and simplify PMD monitoring. Based on a patented, award-winning all-fiber technology, the PCD-003 delivers superior performance with extremely low insertion loss, back reflection and residual phase and amplitude modulation. In addition, the total power consumption is typically less than 10W.

### Specifications:

Insertion Loss	< 0.05 dB
Center Operating Wavelength	1550 nm standard
Operating Wavelength Range <sup>1</sup>	> 100 nm
Output Degree of Polarization <sup>2,3</sup>	< 5%
Average PMD	< 0.05 ps
Intrinsic PDL	< 0.05 dB, 0.01 dB typical
Return Loss	> 65 dB
Optical Power Handling	> 1000 mW
Residual Amplitude Modulation	< ± 0.01 dB
Residual Phase Modulation	< 0.1π
Power Supply	± 12 VDC/1A to ± 15 VDC/1A
Power Consumption	10 W typical
Scrambling Frequencies	Factory set 4 fixed frequencies, distributed between DC to > 700 kHz
Operating Temperature	10 ~ 40 °C
Storage Temperature	-10 ~ 50 °C
Board Dimension	220 × 100 × 30 mm (L × W × H)
Notes: Values are referenced without connectors 1. Center Wavelength ± 50 nm 2. At 500 Hz detection bandwidth 3. Measured from a photodetector at PCD-003 output using a spectrum analyzer. A polarizer is placed in front of the photodetector to convert polarization modulation to amplitude modulation.	

### Features:

- Minimal insertion loss and back reflection
- Low residual phase and amplitude modulation
- Low power consumption

### Applications:

- PDG (polarization dependent gain) mitigation
- Polarization sensitivity elimination
- Facilitating PMD emulation
- Facilitating PMD compensation
- Facilitating PDL measurement

### Related Products:

- Polarization Scrambler Instrument (PCD-104)
- Polarization Scrambler Modules (PCD-005, PSM-002)
- Depolarizer (DEP)

### Tech Info:

- [Scrambling to Minimize Polarization Related Impairments](#)

### FAQ:

- [Scramblers](#)

### Ordering Information:

