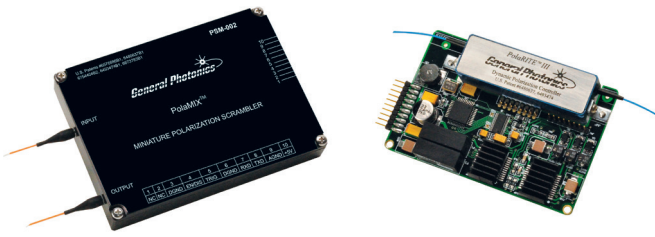


# Miniature Polarization Scrambler Module (PSM-002)



General Photonics' miniature polarization scrambler module, the PSM-002, is specially designed for integration into sensor and communication systems that need to work in extreme environmental conditions. The module uses General Photonics' patented fiber squeezer technology to effectively randomize polarization states. Unlike that of the PCD-005, the scrambling rate of this miniature scrambler is user selectable via an RS-232 command. Another attractive feature is that the scrambling function can also be enabled and disabled by a TTL trigger signal. The PSM-002 is available either as a standard board for lab applications or fully enclosed in a water-tight enclosure for applications in high humidity environments. It also comes in either standard or extended temperature versions.

### Specifications:

Insertion Loss <sup>1</sup>	< 0.05 dB (without connectors) < 0.6 dB (with connectors)
Operating Wavelength <sup>2</sup>	1260 to 1650 nm and 980 to 1310 nm standard
Output Degree of Polarization (DOP) <sup>3</sup>	< 5%, 2.5% typical
Average PMD	< 0.05 ps
Intrinsic PDL	< 0.05 dB, 0.01 dB typical
Return Loss	> 65 dB (without connectors)
Optical Power Handling	> 300 mW
Power Supply	5.0 – 5.5 VDC / 9 W max.
Power Consumption	0.5 – 9 watts, depending on the scrambling rate
Scrambling Rate	User selectable from 0.01 to 20,000 points/s
Operating Temperature	Standard: 0 to 65°C Extended: -35 to 70°C
Storage Temperature	-40 to 85 °C
Dimensions	96 (L) x 63.5 (W) x 18 (H) mm (board version) 115 (L) x 82.6 (W) x 19 (H) mm (enclosure)

**Notes:**

1. For SMF-28 compatible fiber. Other fibers may have higher loss, especially with connectors.
2. Standard calibrated wavelengths are 1550nm (1260-1650nm version) and 1310nm (980-1310nm version). Others available.
3. DOP specification is < 5% (to within 2σ) when averaged over 4000 or more points.

### Features:

- Works in extreme environmental conditions
- Minimal insertion loss and back reflection
- Low residual phase and amplitude modulation
- Selectable scrambling frequencies
- Small size

### Applications:

- Sensor and communication systems
- Polarization sensitivity elimination
- Facilitating PMD emulation
- PMD monitoring for PMD compensation
- Facilitating PDL measurement

### Related Products:

- Polarization Scrambler Modules (PCD-005, PCD-003)
- Depolarizer (DEP)
- Multifunction Polarization Controller (MPC-201)

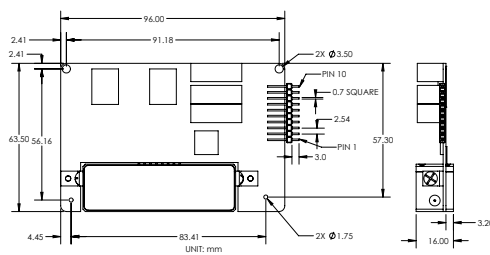
### Tech Info:

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

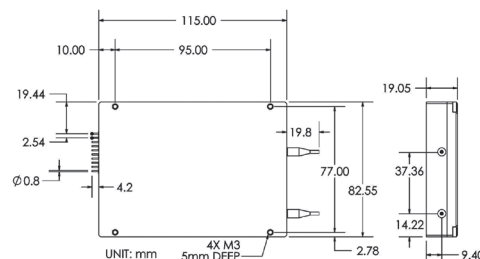
### FAQ:

- [Scramblers](#)

### Dimensions (in mm):



board



enclosure

### Ordering Information:

