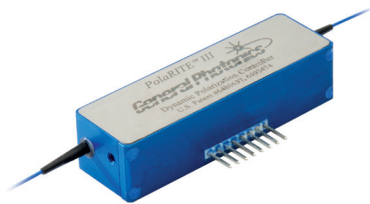


Mini Dynamic Polarization Controller – PolaRITE™ III



In response to customer requests for low profile polarization controllers for system integration, General Photonics made a special effort in designing this third generation polarization controller, the PolaRITE™ III, with significantly reduced height and size. The height reduction is especially advantageous for integration in test equipment, fiber sensors, fiber lasers and optical network modules. Due to a special athermal design, the temperature stability is also significantly improved over our earlier version PolaRITE™ II. Like the other products in the PolaRITE™ family, PolaRITE™ III essentially eliminates insertion loss and back reflection with its unique all fiber construction. Combined with General Photonics' miniature piezo driver card,

it can be controlled either by a digital or analog signal to obtain any desired polarization output from an arbitrary input polarization state.

Specifications:

Intrinsic Insertion Loss	0.05 dB
Return Loss	> 65 dB
Wavelength	1260 to 1650 nm standard, others specify
Rise and Fall Time ¹	30 μ s max.
V_{π} at DC (at 23 °C)	35 volts max. @ 1550nm
Max. Activation Loss	0.01 dB (P grade), 0.05 dB (A grade) with 0 – 150VDC applied to all axes
Polarization Mode Dispersion	0.05 ps
Operating Temperature	-25 to 80 °C
Storage Temperature	-40 to 85 °C
Fiber Pigtail	9/125 μ m single mode fiber standard, others specify
Electrical Interface	8 pin 0.03 inch square, with 0.098 inch pitch
Dimensions	2.58" \times 0.80" \times 0.63" (3 axes) 3.27" \times 0.80" \times 0.63" (4 axes)
Maximum Applied Voltage	150 volts

Features:

- No intrinsic insertion loss
- No intrinsic back reflection
- Fast response
- Compact size

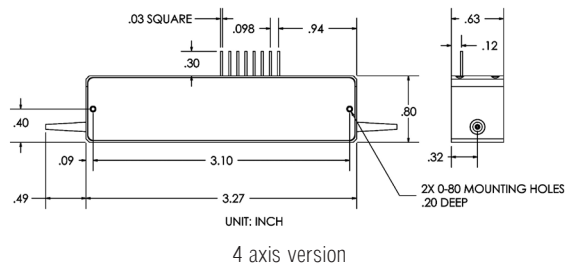
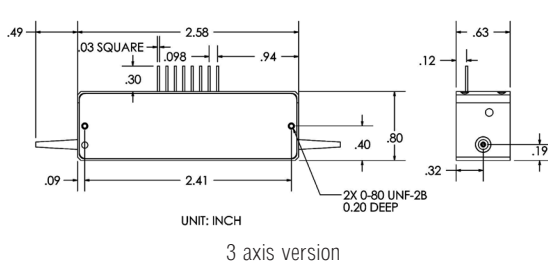
Applications:

- PMD compensation
- Polarization stabilization
- Polarization demultiplexing
- Fiber sensor
- Fiber laser
- Testing equipment

Tech Info: pp. 95, 100
App Note: p. 213
FAQ: p. 225

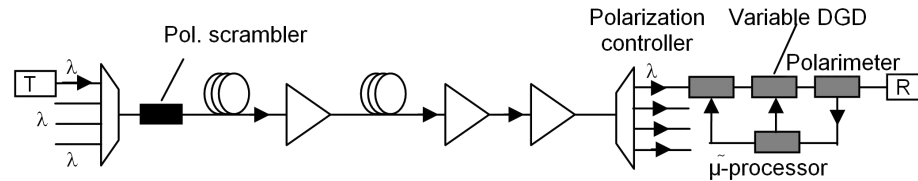
Note: Values are referenced without connectors
1. 10 to 90% transition for a voltage change of V_{π} .

Dimensions (in inches):

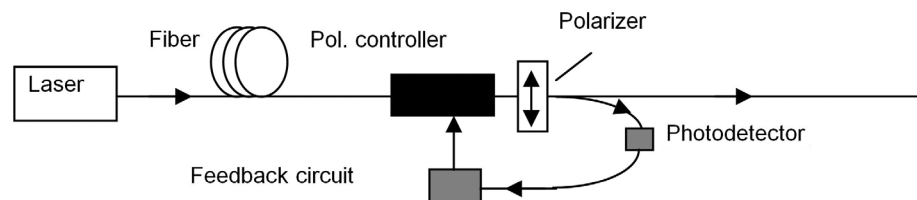


Applications:

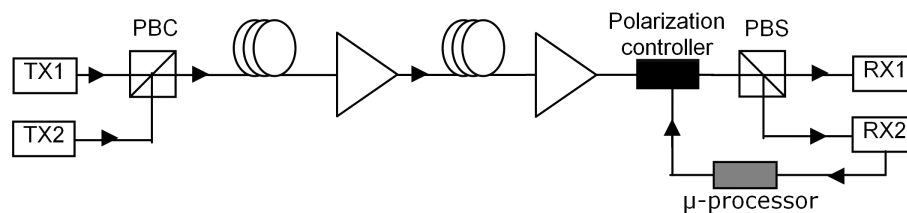
- Polarization Mode Dispersion (PMD) compensation



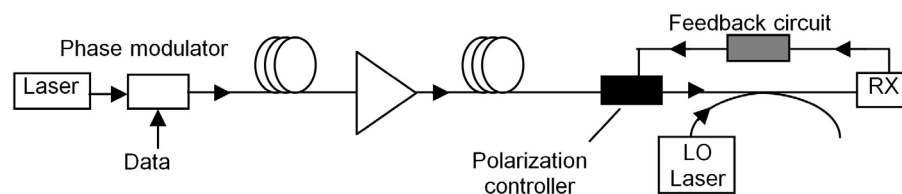
- Polarization stabilization



- Polarization demultiplexing



- Coherent communications



- PMD emulation
- PDL (polarization dependent loss) measurement
- PDL elimination in optical instruments, such as optical spectrum analyzers
- Automatic polarization stabilization for E/O modulator and interferometers
- Reduction of EDFA polarization dependent gain
- Improvement of signal-to-noise ratio in long-haul transmission systems
- Output stabilization in fiber laser systems

Typical Performance Data:

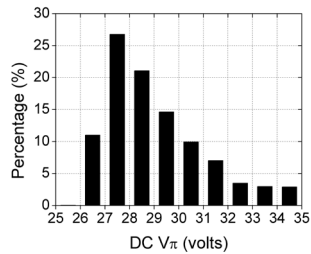


Figure 1. Histogram of DC V_π. In most cases, DC V_π is less than 30 volts

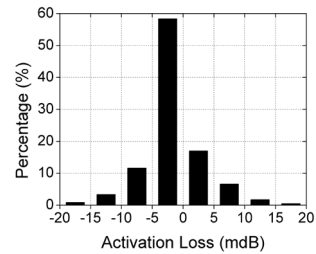


Figure 2. Histogram of activation loss. In most cases, activation loss is less than 0.01 dB.

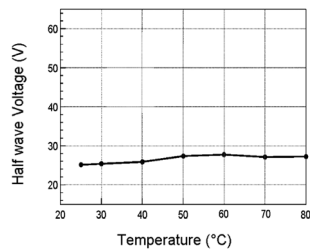


Figure 3. DC V_π as function of operating temperature.

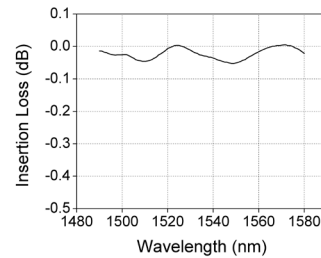
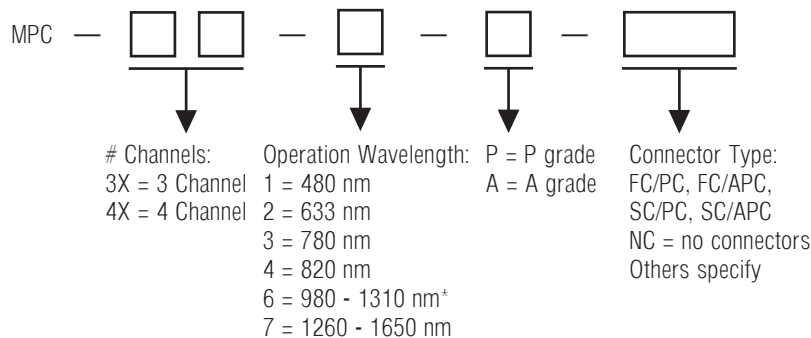


Figure 4. Insertion loss vs wavelength

Ordering Information:



Notes: 1260-1650nm and 980-1310 nm are the standard wavelength ranges for this product. Please contact General Photonics for information on other wavelength options. Please specify P grade or A grade if activation loss is important for your application.

*This fiber can handle wavelengths up to 1650nm, but if it is coupled to SMF-28 fiber, the performance may not be quite as good as normal due to mode mismatch.