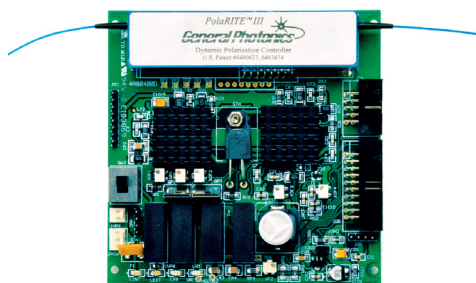


## Dynamic Polarization Controller with Miniature Piezo Driver Card



This module integrates a General Photonics all-fiber dynamic polarization controller with miniature piezo driver card, so that the SOP of the signal can be directly controlled either by a 0-5V analog control signal or a 12-bit TTL digital control signal. Because there is an on-board HV DC/DC converter, no external high voltage power supply is required. The card can be configured to accept either a  $\pm 12$  volt power supply or an optional external 160-volt power supply (PWR-002 recommended). As a polarization controller, the PCD-M02 can convert any input polarization state to any desired output polarization state. As a scrambler, it can randomize the output polarization state. This module offers the low insertion loss, low back reflection, and low activation loss needed for test and measurement applications, combined with the compact size needed for system integration or handheld devices.

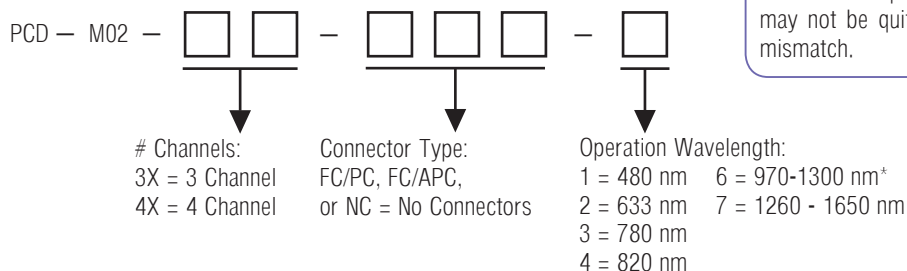
### Specifications:

Optical Specifications	Please see PolarRITE™ III product page
External Analog Input	10 pin
External Digital Input	20 pin
Number of Channels	3 or 4
Max. Output Voltage	140 V
Max. Output Current	20 mA / channel all channels (continuous) <sup>1</sup> 60 mA single channel (continuous) 60 mA per channel (peak)
Max. Analog Control Voltage	5 V
Analog Input Gain	30 V/V $\pm 1$ %
Digital Control Resolution	12 Bits
Input Impedance	> 20 k $\Omega$
Output Impedance	50 $\Omega$
Noise	< 40 mV (RMS) <sup>2</sup>
Response Time	< 65 $\mu$ s rise and fall time with 15V output
Power Supply	+12 VDC / 1.2A, -12 VDC / 0.1A, or external PWR-002 <sup>3</sup>
Operating Temperature	0 to 40 °C
Storage Temperature	-20 to 60 °C
Board Dimensions	100 (W) $\times$ 100 (L) $\times$ 20 (H) mm

#### Notes:

1. When an external high voltage supply with sufficiently high power is used, the 20 mA/channel limit can be increased to 60 mA/channel. Contact General Photonics for details.
2. Measured with PolarRITE III loading and output voltage of 140 V.
3. If PWR-002 is to be used, the on-board DC-DC converters on the PCD-M02 will be bypassed. PWR-002 comes with +/-12 VDC and 160 VDC. Other 160 VDC power supplies may also be used. Contact General Photonics for details.

### Ordering Information:



\*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.

### Features:

- Minimal Insertion Loss
- Low Activation Loss
- Fast Response
- Digital and Analog Control
- Compact

### Applications:

- Polarization Control
- Polarization Scrambling
- PDL Measurement
- PMD Compensation/Emulation
- Fiber Sensor

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App Note: p. 205  
FAQ: p. 217