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Polarization Modules for Communications and Sensor Systems

Micro Polarization Scrambler

This OEM micro polarization scrambler integrates General Photonics' all-fiber dynamic polarization control technology with miniature electronic drive/control circuitry into a compact, self-contained device that provides full polarization control functionality while minimizing volume, power consumption, and cost. Two polarization scrambling options are available: random scrambling at a rate of up to 30 discrete points/s or smooth trace scrambling at a rate of up to 188 rad/s (60π rad/s). Scrambling can be disabled with a 5-volt TTL high and enabled with a TTL low. This module is ideal for integration in a PDL measurement instrument or in a sensor system to minimize polarization related measurement uncertainties. It requires only ±12VDC power supplies, and its low power consumption enables use in battery-powered handheld devices.

Preliminary Specifications:

Operating Wavelength Range	1260 to 1650 nm standard, others specify
Smooth Trace Scrambling Rate	0.0192π, 0.096π, 0.48π, 2.4π, 12π, 60π rad/s, please specify when ordering.
Discrete Scrambling Rate	Up to 30 points/s. Please specify when ordering.
Insertion Loss	Measurement grade: 0.05 dB, excluding connectors Control grade: 0.1 dB, excluding connectors
Return Loss	> 65 dB excluding connectors
Activation Loss	Measurement grade: 0.01 dB Control grade: 0.1 dB
PDL	Measurement grade: < 0.01 dB Control grade: < 0.1 dB
PMD	< 0.05 ps
Optical Power Handling	300 mW
Fiber Pigtail	9/125 μm single mode fiber standard, others specify
Electrical Interface	8-wire flat cable
Power Supply	±12 VDC / 25 mA
Power Consumption[1]	< 0.6W typical
Operating Temperature	-10 to 70°C
Storage Temperature	-40 to 85 °C
Dimensions	2.58" (L) × 1.25" (W) × 0.63" (H)

Notes:
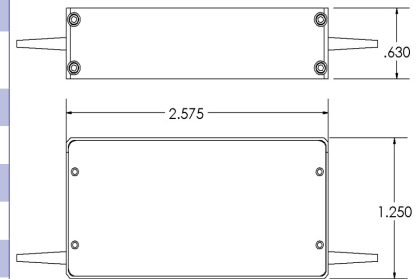1. Continuous scrambling, 12π rad/s, at 25°C.

Features:

· Compact
· Low power consumption
· Low cost
· Plug and play

Applications:

· Minimize polarization related fluctuation in sensor systems
· Minimize polarization related fluctuation in measurement systems
· PDL or DOP measurement

Dimensions:

.630

2.575

1.250

*Continuous Scrambling Rate Key

. 000 = 0.0192 π rad/s
. 001 = 0.09 π rad/s
. 005 = 0.48 π rad/s
. 024 = 2.4 π rad/s
. 120 = 12 π rad/s
. 600 = 60 π rad/s

Ordering Information:

PSM — 003 — S — ☐☐ — ☐ — ☐ — ☐☐☐ — ☐

Connector Type:
FC/PC, FC/APC
SC/PC, SC/APC
NC=no connecto

Wavelength:
7 = 1260-1650nm
6 = 980-1300nm

Scrambling Type:
R = random
C = continuous

Scrambling Rate:
Continuous: see key*
Random: rate in points/s
Range 0.1 to 30

Grade:
M = Measurement
C = Control

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