

In-Line Fiber Optic Polarizers

All-fiber, high performance, wide bandwidth polarizers for a range of applications.



FEATURES:

- High extinction ratio
- Near zero back reflection
- Low insertion loss
- Low cost
- Large operating bandwidth
- Small size
- All-fiber configuration
- Rugged packaging

APPLICATIONS:

- PMD measurement systems
- PDL measurement systems
- Optical transmission systems
- Optical fiber sensors
- High-coherence transmission
- Fiber Optic Gyroscope - FOG
- Instrumentation
- Navigation Equipment
- Military applications
- Aerospace applications

Evanescent Field Technology

ProtoDel in-line, all-fiber polarizers are manufactured using a unique evanescent field substrate fabrication technology. This enables the polarizer to be fabricated directly onto the fiber and does not interrupt the optical path. ProtoDel polarizers are available in a series of performance grades and typical specifications are shown overleaf - choosing the right match of polarizer to your application allows you to balance component cost and performance. These devices can be tailored to meet a very wide range of operating environments and applications - please contact our technical design team to discuss specific requirements.

No internal interfaces to reflect light

Unlike alternative technologies, there are no free space optics and no internal interfaces to reflect light. This means back reflections are very low, at least $< -70\text{dB}$, and the polarizers can be used for higher power applications, right next to the source.

No interruptions to the optical path

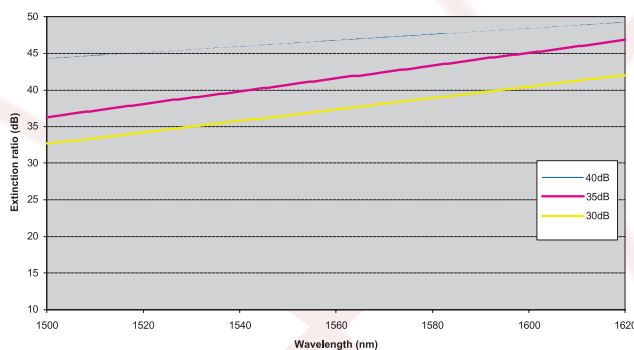
The optical path remains within the fiber at all times so Insertion Loss is kept to a minimum. The fiber is the transmission medium throughout and this allows excellent bandwidth and optical power performance.

SPECIFICATIONS:	SM/SM	SM/PM	PM/PM
Return loss	>70dB		
Broadband	1280 - 1625nm		
Extinction Ratio	>50dB	>40dB	>35dB
Insertion loss (typical)	<0.5dB	<1dB	<1.5dB
Packaging Size	50 x 2mm	75 x 3mm	100 x 3mm
Operating Temperature	-5°C to 70°C		
Transportation & Storage	-40°C		
Pigtail Options	1m fiber standard, 900µm tube optional		
Connectors	Optional		
Fiber Type	SMF 28	SMF 28/Panda	Panda

Notes to Specifications

1. All specifications are worst case. Actual products commonly exhibit better individual specifications than shown in these tables.
2. All polarizers are tested as they are manufactured and are selected into performance groups. Deliveries to your order are guaranteed to meet or exceed the agreed specification.
3. Extinction Ratio is measured at 1300nm, 1480nm, and 1550nm, and polarizers are selected to ensure they meet or exceed the performance group required. Extinction ratios higher than those shown in the specification table above are available - please discuss your specific requirement with ProtoDel.
4. Return Loss, or Back Reflection, performance is characterized at 70dB. Higher performance is available if required - please discuss your requirement with ProtoDel.
5. Insertion Loss for each Polarizer group is characterized by the values shown in the specification table. Significant improvements in performance can be made if required.
6. Packaging is designed to provide a rugged product for general uses. Alternative packaging to your specification is available - please discuss.
7. ProtoDel normally uses SMF 28 and PANDA fiber to make the polarizers but other fiber types may be considered - please discuss your specific needs with us.
8. SM: Single mode - PM: Polarizing Maintaining
9. All quoted losses are without connectors.
10. Dimensions may vary slightly.

Extinction ratio of ProtoDel Polarizers



ORDERING INFORMATION:

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Extinction ratio:

20 - 20 to 24dB
 25 - 25 to 29dB
 30 - 30 to 34dB
 35 - 35 to 39dB
 40 - 40 to 44dB
 45 - 45 to 49dB
 50 - >49dB

Wavelength:

15 - 1550nm
 14 - 1480nm
 13 - 1300nm

Input / output fibers:

SS - SM in SM out
 SP - SM in PM out
 PP - PM in PM out

Connectors:

0 - none
 1 - FC/SPC
 2 - FC/APC

Cable type:

1 - uncabled fiber
 3 - 900µm

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