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# In-line Fiber Polarizers

## Product Overview

Phoenix evanescent field polarizers are produced by replacing the cladding in the locally processed region of the fiber with a polarization selective material. Within the polarizing region one polarization mode of the single mode fiber is highly attenuated and the other mode propagates with virtually no loss. Extinction ratios above 50dB are readily achievable whilst maintaining extremely low transmission loss of the required polarization mode.



## Operational Wavelength Range

Phoenix range of polarizers will polarize light of any wavelength from 1280nm to 1640nm in Corning SMF28 fiber. Typically extinction ratio and insertion loss increases with wavelength for the SM/SM devices. The polarizers are specified for a particular wavelength range although they are operational outside the band, performance may differ slightly to the specification. Polarization maintaining polarizers have a flat extinction ratio response across the band offering broadband benefits in certain applications.

## Technical Information

Phoenix can boast the highest extinction ratio, largest bandwidth devices available on the market. The company employs industry proven optical fiber evanescent field technology to fabricate the polarizers, and over the years, Phoenix engineers have refined and improved the process providing the highest quality product at globally competitive prices.

## Features & Applications

**FEATURES**

- High extinction ratio
- Low loss
- Near zero back reflection
- Low cost
- Wide wavelength operating range
- Small size
- Rugged packaging
- All-fiber construction

**APPLICATIONS**

- PMD measurement
- Polarization sensitive modules
- PDL measurement
- Fiber optic gyroscopes
- Polarization control
- Polarimetric sensor systems
- Single polarization transmitters

For more information please contact Phoenix sales:
sales@phoenixphotonics.com or visit us at
www.phoenixphotonics.com

| SPECIFICATIONS | SM/SM | SM/PM | PM/PM |
|---|---|---|---|
| Wavelength range[1] | 1280nm - 1320nm<br>1480nm - 1530nm<br>1530nm - 1640nm | 1280nm - 1320nm<br>1480nm - 1530nm<br>1530nm - 1640nm | 1280nm - 1320nm<br>1480nm - 1530nm<br>1530nm - 1640nm |
| Minimum extinction ratio[2] | >30dB | >35dB | >35dB |
| Insertion loss[3] | <1dB: Typ. 0.5dB | <1dB: Typ. 0.8dB | <1.5dB: Typ. 1dB |
| Return loss[4] | >70dB | | |
| Package size[5] | 50 x 2 dia | 80 x 3 dia | 100 x 3 dia |
| Operating temperature range[6] | $-5^0$C to $70^0$C | | |
| Transportation/storage[7] | $-40^0$C to $85^0$C | | |
| Fiber type[8] | SMF 28 | SMF28/PANDA | PANDA/PANDA |
| Pigtails[9] | 1m fiber standard, 900□m loose tube optional | | |
| Outer packaging | Stainless steel tube | | |

*All dimensions are approximate and may vary slightly*

## Notes to Specifications

*•All specifications are worst case for the wavelength range selected; actual products commonly exhibit better performance.*

*•All polarizers are tested and graded into performance groups.*

*•SM – single mode fiber: PM – polarization maintaining fiber.*

*1. The devices will provide polarization over the full wavelength range for which the fiber is single mode. Performance characteristics are wavelength dependent and the devices will meet specification as follows:*

*Type 15 – 1530nm to 1640nm*

*Type 14 – 1480 nm to 1530 nm*

*Type 13 – 1280nm to 1320nm*

*2. These are the minimum extinction ratios typically achievable for each wavelength range. If alternative values are required please discuss with our sales representative.*

*3. Insertion loss is typically in the region of 0.2dB (SM/SM) to 1dB (PM/PM), excluding connectors.*

*4. The all-fiber technology gives an excellent return loss figure of >70dB.*

*5. Dimensions are in mm.*

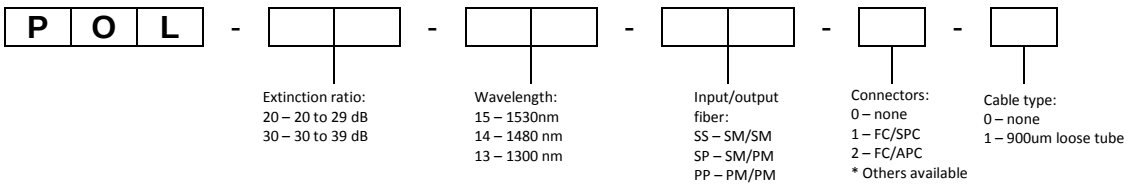
*6. The operating temperature range is specified for typical telecommunications operation. Please discuss with the sales representative if operation outside the specified range is required.*

*7. The devices are very robust for storage and transportation.*

*8. Standard single mode Corning SMF 28 fiber is used for the SM devices and PANDA polarization maintaining fiber for the PM devices. The technology is applicable to any fiber type; please contact the sales representative to discuss any alternative fiber.*

*9. Pigtails are typically no shorter than 1m.*

## Ordering Information



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