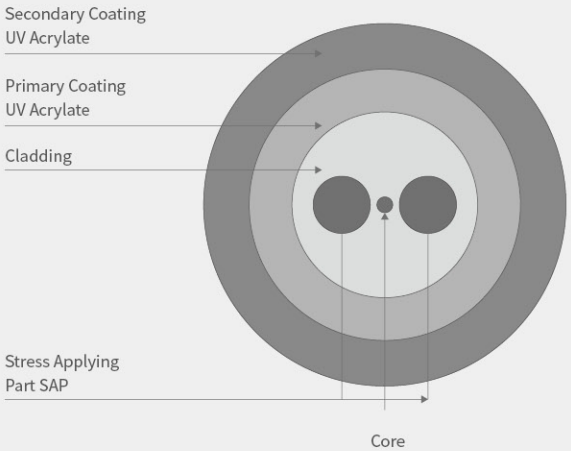
# Polarization Maintaining Fibre Series (PMF)

YOFC polarization maintaining fibre (PMF) is specially designed for fibre optic gyroscopes (FOGs) and polarization-sensitive components applications. This kind of fibre exhibits extremely low attenuation and excellent birefringence characteristics, and uses in a variety of demanding applications.

YOFC PMF is manufactured through the high precision Plasma Chemical Vapor Deposition (PCVD) process. This process produces preforms with precise refractive index profiles, material uniformity and dimensional tolerances, therefore, makes fibres with excellent birefringence, low attenuation and extremely tight tolerances.

With dual-layer, UV-cured Acrylate coating, YOFC polarization maintaining fibre has high environmental stability performance over the temperature range of -45℃ to +85℃ (-49 °F to +185 °F ).

## Polarization Maintaining Telecommunication Fibres

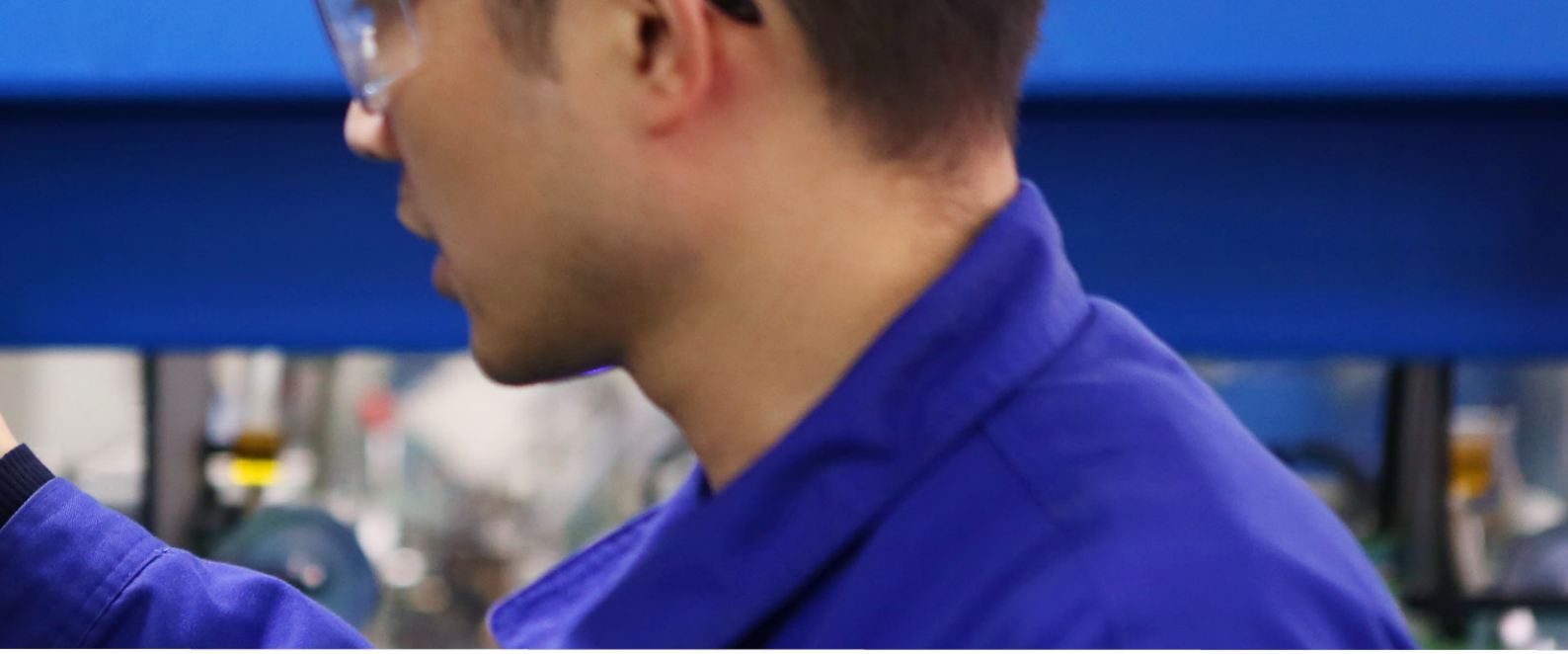



### Characteristics

- Excellent polarization maintaining properties
- Tight geometric tolerances and very low attenuation
- Dual-layer UV-Acrylate coating and tight buffering structure
- High environmental stability and reliability

### Application

- Polarization-sensitive components
- High performance transmission laser pigtails
- Pigtail to LiNbO3 FOG chip (IOC)
- Polarization-based sensors



## Specifications-1

| Fibre Type | PM 980<br>125-12/250 | PM 980<br>125-12/400 | PM 1310<br>125-13/250 | PM 1310<br>125-13/400 |
|---|---|---|---|---|
| **Part No.** | PM1015-A | PM1025-A | PM1016-C | PM1026-C |
| **Optical Properties** | | | | |
| Operating Wavelength (nm) | 980 | 980 | 1310 | 1310 |
| Cut-off Wavelength (nm) | 800~970 | 800~970 | 1100~1290 | 1100~1290 |
| Mode Field Diameter (μm) | 6.5±1.0 | 6.5±1.0 | 9.0±1.0 | 9.0±1.0 |
| Attenuation (dB/km) | ⩽2.5 | ⩽2.5 | ⩽0.5 | ⩽0.5 |
| Beat Length (mm) | ⩽3.0 | ⩽3.0 | ⩽4.0 | ⩽4.0 |
| Typical Cross Talk at 4m (dB) | ⩽-40 | ⩽-40 | ⩽-40 | ⩽-40 |
| Cross Talk at 100m (dB) | ⩽-25 | ⩽-25 | ⩽-25 | ⩽-25 |
| **Geometrical Properties** | | | | |
| Cladding Diameter (μm) | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 |
| Coating Diameter (μm) | 245.0 ± 7.0 | 400.0± 15.0 | 245.0 ± 7.0 | 400.0± 15.0 |
| Cladding Non-circularity (%) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Core Concentricity Error(μm) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Coating Type | Dual-layer/UV-Acrylate | Dual-layer/UV-Acrylate | Dual-layer/UV-Acrylate | Dual-layer/UV-Acrylate |
| **Mechanical Properties** | | | | |
| Operating Temperature (℃) | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 |
| Proof Test (kpsi) | 100 | 100 | 100 | 100 |

www.yofc.com

This datasheet can only be a reference, but not a supplement to the contract. Please contact our sales people for more detailed information

## Specifications-2

| Fibre Type | PM 14xx<br>125-13/250 | PM 1550<br>125-13/250 | PM 1550<br>125-13/400 |
|---|---|---|---|
| **Part No.** | PM1018-A | PM1017-C | PM1027-C |
| **Optical Properties** | | | |
| Operating Wavelength (nm) | 1400~1490 | 1550 | 1550 |
| Cut-off Wavelength (nm) | 1200~1380 | 1290~1520 | 1290~1520 |
| Mode Field Diameter (μm) | 9.8±1.0 | 10.5±1.0 | 10.5±1.0 |
| Attenuation (dB/km) | ⩽0.5 | ⩽0.5 | ⩽0.5 |
| Beat Length (mm) | ⩽4.5 | ⩽5.0 | ⩽5.0 |
| Typical Cross Talk at 4m (dB) | ⩽-40 | ⩽-40 | ⩽-40 |
| Cross Talk at 100m (dB) | ⩽-25 | ⩽-25 | ⩽-25 |
| **Geometrical Properties** | | | |
| Cladding Diameter (μm) | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 |
| Coating Diameter (μm) | 245.0 ± 7.0 | 245.0 ± 7.0 | 400.0± 15.0 |
| Cladding Non-circularity (%) | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Core Concentricity Error(μm) | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Coating Type | Dual-layer/UV-Acrylate | Dual-layer/UV-Acrylate | Dual-layer/UV-Acrylate |
| **Mechanical Properties** | | | |
| Operating Temperature (°C) | -45~ +85 | -45~ +85 | -45~ +85 |
| *Proof Test (kpsi) | 100 | 100 | 100 |

## Specifications-3

| Fibre Type | PM 980<br>125-12/250_C | PM 1310<br>125-13/250_C | PM 14xx<br>125-13/250_C | PM 1550<br>125-13/250_C |
|---|---|---|---|---|
| **Part No.** | PM1015-A+ | PM1016-C+ | PM1018-A+ | PM1017-C+ |
| **Optical Properties** | | | | |
| Operating Wavelength (nm) | 980 | 1310 | 1400~1490 | 1550 |
| Cut-off Wavelength (nm) | 800~970 | 1100~1290 | 1200~1380 | 1290~1520 |
| Mode Field Diameter (μm) | 6.5±1.0 | 9.0±1.0 | 9.8±1.0 | 10.5±1.0 |
| Attenuation (dB/km) | ⩽2.5 | ⩽0.5 | ⩽0.5 | ⩽0.5 |
| Beat Length (mm) | 3.0~5.0 | 3.0~6.0 | 4.0~7.5 | 4.5~8.0 |
| Typical Cross Talk at 4m (dB) | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-30 |
| Cross Talk at 100m (dB) | ⩽-25 | ⩽-25 | ⩽-25 | ⩽-25 |
| **Geometrical Properties** | | | | |
| Cladding Diameter (μm) | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 |
| Coating Diameter (μm) | 245.0 ± 7.0 | 245.0 ± 7.0 | 245.0 ± 7.0 | 245.0 ± 7.0 |
| Cladding Non-circularity (%) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Core Concentricity Error (μm) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Coating Type | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate |
| **Mechanical Properties** | | | | |
| Operating Temperature (°C) | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 |
| *Proof Test (kpsi) | 100 | 100 | 100 | 100 |

- Customized PMFs are available with different application designs.
- Standard proof test minimum is 1%. 2% proof test fibre is available.

# Polarization Maintaining Birefringence Matching Fibre

## Characteristics

- Excellent birefringence matching properties
- Excellent polarization maintaining properties
- Excellent polishing properties
- Tight geometric tolerances
- Low bending-induced attenuation
- Tight tolerance, dual-layer, and UV-Acrylate coating
- High environmental stability and reliability

## Application

- Pigtail to LiNbO3 FOG chip (IOC)
- Polarization maintaining fused-fibre couplers
- Polarization-sensitive components
- High performance transmission laser pigtails
- Polarization-based sensors

## Specifications

| Fibre Type | PM 1310<br>125-16/250_C | PM 1310<br>125-16/250_Y | PM 1550<br>125-18/250_Y | PM 1310<br>80-16/165_Y | PM 1550<br>80-18/165_Y |
|---|---|---|---|---|---|
| **Part No.** | PM1016-D | PM1016-E | PM1017-E | PM1016-F | PM1017-F |
| **Optical Properties** | | | | | |
| Operating Wavelength (nm) | 1310 | 1310 | 1550 | 1310 | 1550 |
| Cut-off Wavelength (nm) | 1100~1290 | 1100~1290 | 1290~1520 | 1100~1290 | 1290~1520 |
| Mode Field Diameter (μm) | 6.5±1.0 | 6.0±1.0 | 6.5±1.0 | 6.0±1.0 | 6.5±1.0 |
| Attenuation (dB/km) | ⩽1.0 | ⩽0.6 | ⩽0.6 | ⩽0.6 | ⩽1.0 |
| Beat Length (mm) | 4.0~6.0 | 2.5~4.0 | 2.5~4.5 | 2.5~4.0 | 2.5~4.5 |
| Typical Cross Talk at 4m (dB) | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-30 |
| Cross Talk at 100m (dB) | ⩽-25 | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-30 |
| **Geometrical Properties** | | | | | |
| Cladding Diameter (μm) | 125.0 ± 1.0 | 125.0 ± 1.0 | 125.0 ± 1.0 | 80.0 ± 1.0 | 80.0 ± 1.0 |
| Coating Diameter (μm) | 245.0 ± 7.0 | 245.0 ± 7.0 | 245.0 ± 7.0 | 170.0 ± 7.0 | 170.0 ± 7.0 |
| Cladding Non-Circularity (%) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Core Concentricity Error (μm) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 |
| Coating Type | Dual-layer;<br>UV-Acrylate | Dual-layer;<br>UV-Acrylate | Dual-layer;<br>UV-Acrylate | Dual-layer;<br>UV-Acrylate | Dual-layer;<br>UV-Acrylate |
| **Mechanical Properties** | | | | | |
| Operating Temperature(°C) | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 |
| *Proof Test (kpsi) | 100 | 100 | 100 | 100 | 100 |

· Customized PMFs are available with different application designs.
· Standard proof test minimum is 1%. 2% proof test fibre is available.

# Polarization Maintaining Gyroscope & Sensor Fibre

## Characteristics

- Short beat length
- Extremely high birefringence
- Excellent polarization maintaining properties
- Tight geometric tolerances and very low attenuation
- Low bending-induced attenuation
- Tight tolerance, dual-layer, and UV-Acrylate coating
- High environmental stability and reliability

## Application

- Fibre Optic Gyroscopes (FOGs)
- Polarization maintaining fused-fibre couplers
- Polarization-sensitive components
- High performance transmission laser pigtails
- Polarization-based sensors

## Specifications

| Fibre Type | PM 1310 125-16/250 | PM 1310 80-16/165 | PM 1550 125-18/250 | PM 1550 80-18/165 | PMF 1310/ 80-16/135 | PMF 1550/ 80-18/135 |
|---|---|---|---|---|---|---|
| **Part No.** | PM1016-A | PM1016-B | PM1017-A | PM1017-B | PM 1016-G | PM 1017-G |
| **Optical Properties** | | | | | | |
| Operating Wavelength (nm) | 1310 | 1310 | 1550 | 1550 | 1310 | 1550 |
| Cut-off Wavelength (nm) | 1100~1290 | 1100~1290 | 1290~1520 | 1290~1520 | 1100 - 1290 | 1290 - 1520 |
| Mode Field Diameter (μm) | 6.0±1.0 | 6.0±1.0 | 6.5±1.0 | 6.5±1.0 | 6.0 ± 0.5 | 6.5 ± 0.5 |
| Attenuation (dB/km) | ⩽ 0.6 | ⩽ 0.6 | ⩽ 0.5 | ⩽ 0.8 | ⩽ 0.6 | ⩽ 0.8 |
| Beat Length (mm) | ⩽ 3.0 | ⩽ 3.0 | ⩽ 3.5 | ⩽ 3.5 | ⩽ 2.5 | ⩽ 3.0 |
| Cross Talk at 1000m (dB) | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-30 | ⩽-25 | ⩽ -25 |
| **Geometrical Properties** | | | | | | |
| Cladding Diameter (μm) | 125.0 ± 1.0 | 80.0 ± 1.0 | 125.0 ± 1.0 | 80.0 ± 1.0 | 80.0 ± 1.0 | 80.0 ± 1.0 |
| Coating Diameter (μm) | 245.0 ± 7.0 | 170.0 ± 7.0 | 245.0 ± 7.0 | 170.0 ± 7.0 | 135 ± 5 | 135 ± 5 |
| Cladding Non-Circularity (%) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽ 1.0 | ⩽ 1.0 |
| Core Concentricity Error (μm) | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽1.0 | ⩽ 0.5 | ⩽ 0.5 |
| Coating Type | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate | Dual-layer; UV-Acrylate |
| **Mechanical Properties** | | | | | | |
| Operating Temperature (°C) | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 | -45~ +85 |
| *Proof Test (100 kpsi) | 100 | 100 | 100 | 100 | 100 | 100 |

- Customized PMFs are available with different application designs.
- Standard proof test minimum is 1%. 2% proof test fibre is available.