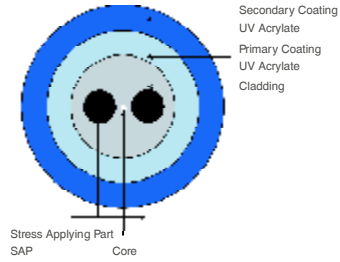
Polarization Maintaining Fibre Series （PMF）

Description

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℉ to +185℉).

Polarization Maintaining Telecommunication Fibres

Applications

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

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

Specifications–1

Fibre Type	PM980 125–12/250	PM980 125–12/400	PM980 125–12/900	PM1310 125–13/250	PM1310 125–13/400	PM1310 125–13/900
Part No.	*PM1015-A*	*PM1025-A*	*PM1045-A*	*PM1016-C*	*PM1026-C*	*PM1046-C*
Optical Properties						
Operating Wavelength (nm)	980	980	980	1310	1310	1310
Cut–off Wavelength (nm)	800~970	800~970	800~970	1100~1290	1100~1290	1100~1290
Mode Field Diameter (μm)	6.5 ± 1.0	6.5 ± 1.0	6.5 ± 1.0	9.0 ± 1.0	9.0 ± 1.0	9.0 ± 1.0
Attenuation (dB/km)	≤ 2.5	≤ 2.5	≤ 2.5	≤ 0.5	≤ 0.5	≤ 0.5
Beat Length (mm)	≤ 3.0	≤ 3.0	≤ 3.0	≤ 4.0	≤ 4.0	≤ 4.0
Typical Cross Talk at 4m (dB)	≤–40	≤–40	≤–30	≤–40	≤–40	≤–30
Cross Talk at 100m (dB)	≤–30	≤–30	≤–25	≤–30	≤–30	≤–25
Geometric Properties						
Cladding Diameter (μm)	125.0 ± 1.0	125.0 ± 1.0	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	900.0 ± 100.0	245.0 ± 7.0	400.0 ± 15.0	900.0 ± 100.0
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	≤1.0	≤1.0
Coating Type	Dual–layer/UV–Acrylate		UV/Polyamide	Dual–layer/UV–Acrylate		UV/Polyamide

Polarization Maintaining Fibre Series (PMF)

Polarization Maintaining Gyroscope & Sensor Fibres

Applications

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

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

Specifications

Fibre Type	PMF1310 125–16/250	PMF1310 80–16/165	PMF1550 125–18/250	PMF1550 80–18/165
Part No.	*PM1016-A*	*PM1016-B*	*PM1017-A*	*PM1017-B*
Optical Properties				
Operating Wavelength (nm)	1310	1310	1550	1550
Cut–off Wavelength (nm)	1100~1290	1100~1290	1290~1520	1290~1520
Mode Field Diameter (μm)	6.0 ± 1.0	6.0 ± 1.0	6.5 ± 1.0	6.5 ± 1.0
Attenuation (dB/km)	≤ 0.6	≤ 0.6	≤ 0.5	≤ 0.8
Beat Length (mm)	≤ 3.0	≤ 3.0	≤ 3.5	≤ 3.5
Cross Talk at 1000m (dB)	≤–30	≤–30	≤–30	≤–30
Geometric Properties				
Cladding Diameter (μm)	125.0 ± 1.0	80.0 ± 1.0	125.0 ± 1.0	80.0 ± 1.0
Coating Type	Dual–layer; UV–Acrylate			
Coating Diameter (μm)	245.0 ± 7.0	170.0 ± 7.0	245.0 ± 7.0	170.0 ± 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
Environmental and Mechanical				
Operating Temperature Range (℃)	–45 to +85			
*Proof Test Level (kpsi)	0.70 GN/m^2 (100 kpsi)			

* Customized PMFs are available with different application designs.

* Standard proof test minimum is 1%. 2% proof test fibre is available.

Polarization Maintaining Fibre Series (PMF)

Fibre Type	PMF14xx 125–13/250	PMF14xx 125–13/400	PMF14xx 125–13/900	PMF1550 125–13/250	PMF1550 125–13/400	PMF1550 125–13/900
Part No.	*PM1018-A*	*PM1028-A*	*PM1048-A*	*PM1017-C*	*PM1027-C*	*PM1047-C*
Optical Properties						
Operating Wavelength (nm)	1400~1490	1400~1490	1400~1490	1550	1550	1550
Cut–off Wavelength (nm)	1200~1380	1200~1380	1200~1380	1290~1520	1290~1520	1290~1520
Mode Field Diameter (μm)	9.8 ± 1.0	9.8 ± 1.0	9.8 ± 1.0	10.5 ± 1.0	10.5 ± 1.0	10.5 ± 1.0
Attenuation (dB/km)	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
Beat Length (mm)	≤ 4.5	≤ 4.5	≤ 4.5	≤ 5.0	≤ 5.0	≤ 5.0
Typical Cross Talk at 4m (dB)	≤–40	≤–40	≤–30	≤–40	≤–40	≤–30
Cross Talk at 100m (dB)	≤–30	≤–30	≤–25	≤–30	≤–30	≤–25
Geometric Properties						
Cladding Diameter (μm)	125.0 ± 1.0	125.0 ± 1.0	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	900.0 ± 100.0	245.0 ± 7.0	400.0 ± 15.0	900.0 ± 100.0
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	≤1.0	≤1.0
Coating Type	Dual–layer/UV–Acrylate		UV/Polyamide	Dual–layer/UV–Acrylate		UV/Polyamide

Specifications–2

Fibre Type	PMF980 125–12/250_C	PMF1310 125–13/250_C	PMF14xx 125–13/250_C	PMF1550 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
Geometric Properties				
Cladding Diameter (μm)	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0
Coating Type	Dual–layer; UV–Acrylate			
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
Environmental and Mechanical				
Operating Temperature Range (℃)	–45 to +85			
*Proof Test Level (kpsi)	0.70 GN/m^2 (100 kpsi)			

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Polarization Maintaining Fibre Series (PMF)

Polarization Maintaining Birefringence Matching Fibres

Applications

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

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

Specifications

Fibre Type	PMF1310 125–16/250_C	PMF1550 125–18/250_C	PMF1310 125–16/250_Y	PMF1550 125–18/250_Y	PMF1310 80–16/165_Y	PMF1550 80–18/165_Y
Part No.	*PM1016-D*	*PM1017-D*	*PM1016-E*	*PM1017-E*	*PM1016-F*	*PM1017-F*
Optical Properties						
Operating Wavelength (nm)	1310	1550	1310	1550	1310	1550
Cut–off Wavelength (nm)	1100~1290	1290~1520	1100~1290	1290~1520	1100~1290	1290~1520
Mode Field Diameter (μm)	6.5 ± 1.0	7.0 ± 1.0	6.0 ± 1.0	6.5 ± 1.0	6.0 ± 1.0	6.5 ± 1.0
Attenuation (dB/km)	≤ 1.0	≤ 0.5	≤ 0.6	≤ 0.6	≤ 0.6	≤ 1.0
Beat Length (mm)	4.0~6.0	4.5~6.5	2.5~4.0	3.0~4.5	2.5~4.0	3.0~4.5
Typical Cross Talk at 4m (dB)	≤–30	≤–30	≤–30	≤–30	≤–30	≤–30
Cross Talk at 100m (dB)	≤–25	≤–25	≤–25	≤–25	≤–25	≤–25
Geometric Properties						
Cladding Diameter (μm)	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 1.0	80.0 ± 1.0	80.0 ± 1.0
Coating Type	Dual–layer; UV–Acrylate					
Coating Diameter (μm)	245.0 ± 7.0	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	≤1.0
Core Concentricity Error (μm)	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Environmental and Mechanical						
Operating Temperature Range (℃)	–45 to +85					
*Proof Test Level (kpsi)	0.70 GN/m^2 (100 kpsi)					

* Customized PMFs are available with different application designs.

* Standard proof test minimum is 1%. 2% proof test fibre is available.