



Specialty Optical Fibres



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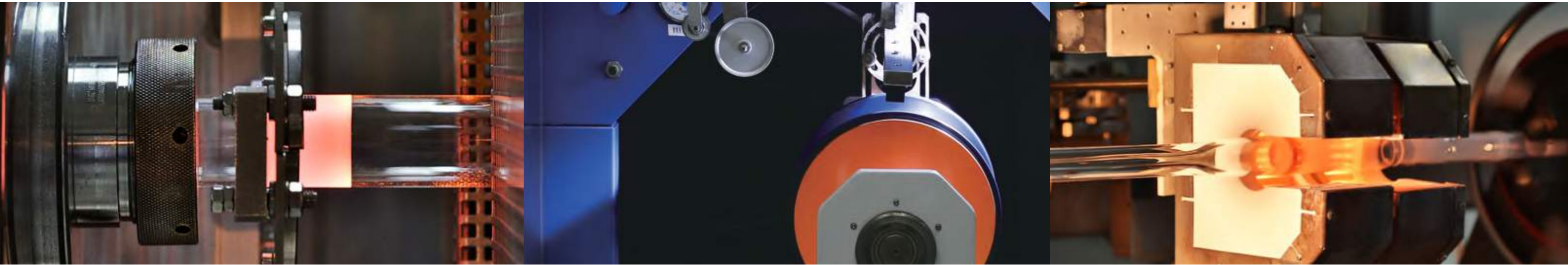
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Dispersion Compensating Fibre (DCF)



Products

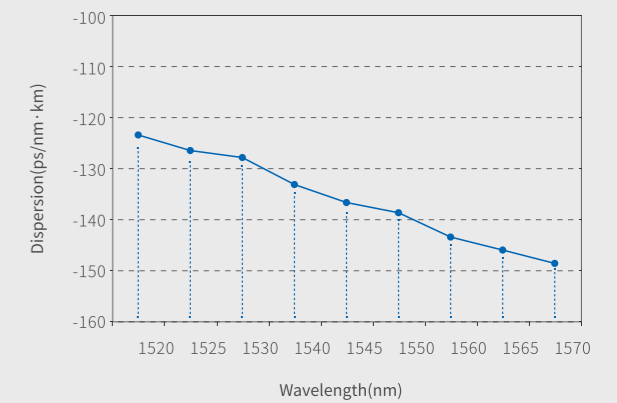
Standard Products:

- DCF for G.652 C band (Part NO. DM1010-D)
- DCF for G.652 C band (Part NO. DM1010-E)
- DCF for G.655 C band (Part NO. DM1011-A)
- DCF for CATV and high FOM (Part No.DM1013-A)

Products available:

- DCF for G.656 fibre
- Customized DCFs

G.652 DCF Dispersion Curve



YOFC dispersion compensating fibre is specially developed through proprietary PCVD-based technology. Taking advantages of PCVD process, YOFC is able to manufacture complex index-profile shapes accurately, therefore, to get the optimized products with the best compromise between insertion loss and residual dispersion over the compensated working wavelength. Customized fibres with special center wavelength and dispersion are available.

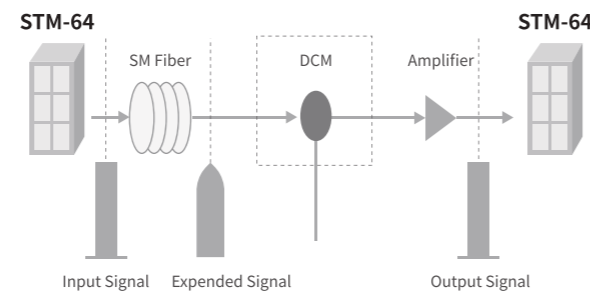


Specifications

Fibre Type	NDCF-G.652C/250	SNDCF-G.652C/170	DCF-G.655C/250	SDCF-G.652C/170LD
Part No.	DM1010-D	DM1010-E	DM1011-A	DM1013-A
Optical Properties				
Operating Wavelength (nm)	1525~1565	1525~1565	1525~1565	1525~1565
MFD (μm)	5.0±1	5.0±1	4.5±1	5.0±1
1525~1565nm Attenuation (dB/km)	≤ 0.55	≤ 0.55	≤ 1.4	≤ 0.6
1545nm Dispersion Coefficient (ps/nm·km)	-100~-170	-100~-170	-160~-360	≤-160
1545nm Relative Dispersion Slope (nm ⁻¹)	0.00288~0.00432	0.00288~0.00432	0.0176~0.0264	0.0028~0.0044
Geometrical Properties				
Cladding Diameter (μm)	120 ± 10	120 ± 10	110 ± 10	120 ± 10
Coating Diameter (μm)	245 ± 10	175 ± 15	245 ± 10	175 ± 15
Cladding Non-circularity (%)	≤1	≤1	≤1	≤1
Core/Cladding Concentricity Error (%)	≤1	≤1	≤1	≤1
Coating Type	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate

Characteristics

- Broad band dispersion compensating of DWDM network and
- extremely low residual dispersion
- 80-120% slope compensation in C/L band
- Low insertion loss and high negative dispersion coefficient
- High figure of merit (FOM)
- Low PMD
- Performances meet the criterion Telcordia GR-2854-core
- Reliability meets the criterion Telcordia GR-1221-core
- Customized encapsulation type, dimension, connector type and jumper length
- Good splicing characteristics, spliced by one discharge



Application

- Single mode fibre backbone and metropolitan area networks based on recommendation G.652
- DWDM networks
- SDH network
- CATV
- Dispersion adjustment

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Polarization Maintaining Fibre Series (PMF)

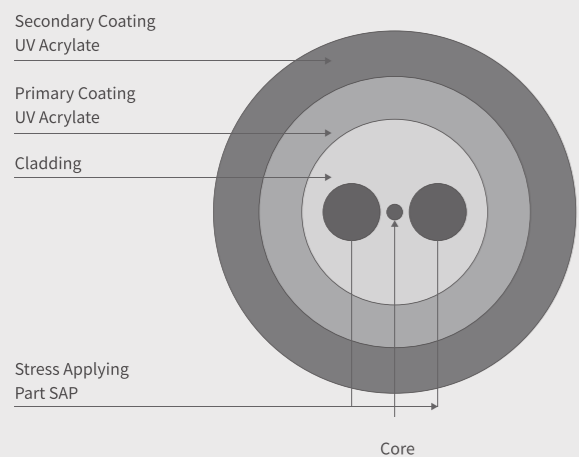


YOFC polarization maintaining fibre (PMF) is specially designed for fibre optic gyroscopes (FOGs) and polarization-sensitive components applications. This kind of fibre exhibits extremely low attenuation and excellent birefringence characteristics, and uses in a variety of demanding applications.

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°C to +85°C (-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 980 125-12/250	PM 980 125-12/400	PM 1310 125-13/250	PM 1310 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 (°C)	-45~ +85	-45~ +85	-45~ +85	-45~ +85
Proof Test (kpsi)	100	100	100	100

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Specifications-2

Fibre Type	PM 14xx 125-13/250	PM 1550 125-13/250	PM 1550 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 980 125-12/250_C	PM 1310 125-13/250_C	PM 14xx 125-13/250_C	PM 1550 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 125-16/250_C	PM 1310 125-16/250_Y	PM 1550 125-18/250_Y	PM 1310 80-16/165_Y	PM 1550 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; 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
*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.



Hard Polymer Cladding Optical Fibre (HPCF)

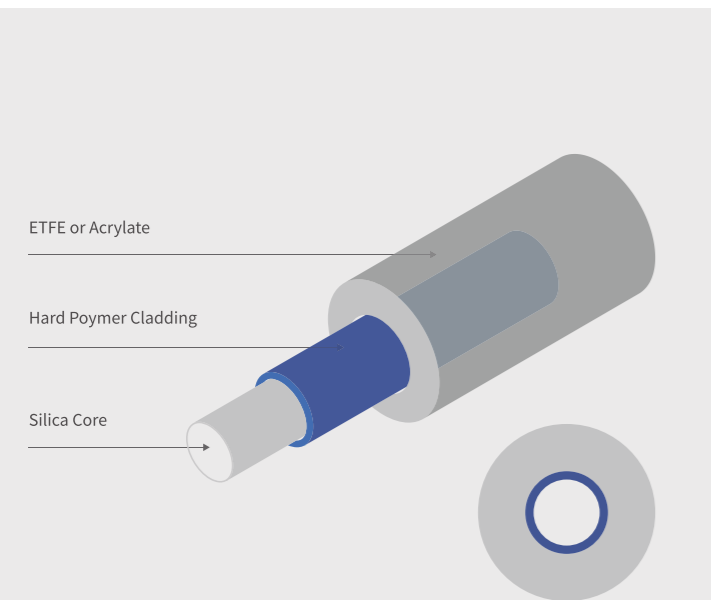
YOFC large core fibre with low OH is suited for 650nm and 850nm apparatus and systems. The hard polymer cladding provides higher tensile strength and greater resistance to moisture. These characteristics determine the HPCF widely used in fields of telecommunication, industry and near-IR spectroscopy environment.

Hard polymer (HP) cladding, made up of "fluoroacrylate", plays an important role in protecting glass core. In the process of installation or terminal use, HPCF is hard to break, even under the tightly bend or other rough conditions.

Large core with 200 μm-1000 μm diameter provides an excellent coupling efficiency for data transmission and connectors. Systems with large core fibre have lower cost due to the loose tolerance characteristics of the components. HPCF shows the best performance applied to short distance medium transmission and data transmission.

Application

- High energy laser transmission
- Short-to-medium distance telecommunication
- Electric signal transmission
- Locomotive traction control
- Medical sensor
- Factory automation control
- Laser therapy and operation
- Near-IR spectroscopy application
- Optical pyrometry
- Nuclear radiation monitoring
- Optical fibre lighting



Characteristics

- Higher coupling efficiency provided than LED and laser source
- Tolerant of wide fluctuations in temperature and humidity
- More effective and cheaper connection mode
- Excellent fatigue resistance performance
- Excellent radiation resistance performance
- Compatible with a variety of light sources

Specifications-1

Fibre Type	HP 200/230-37/500E	HP 200/230-40/500	HP 300/330-37/650E	HP 400/430-37/730E
Part No.	HP2140-A	HP2111-A	HP2140-B	HP2140-C
Optical Properties				
Numerical Aperture	0.37±0.02	0.40±0.02	0.37±0.02	0.37±0.02
Attenuation @850 nm(dB/km)	≤8.0	≤5.0	≤8.0	≤8.0
OH Content	Low OH	Low OH	Low OH	Low OH
Refractive Index Profile	Step Index	Grade Index	Step Index	Step Index
Geometrical Properties				
Core Diameter (μm)	200.0±3.0	200.0±3.0	300.0±6.0	400.0±8.0
Cladding Diameter (μm)	230+0/-8	230+0/-8	330+5/-10	430+5/-10
Coating Diameter (μm)	500.0±25.0	500.0±25.0	650.0±30.0	730.0±30.0
Core Concentricity Error (μm)	≤5.0	≤5.0	≤6.0	≤8.0
Material Composition				
Core Material	Pure Silica Glass	Doped Silica Glass	Pure Silica Glass	Pure Silica Glass
Cladding Material	Fluoroacrylate	Fluoroacrylate	Fluoroacrylate	Fluoroacrylate
Coating Material	ETFE	Acrylate	ETFE	ETFE
Mechanical Properties				
Short Term Bend Radius(mm)	≥10	≥10	≥16	≥29
Long Term Bend Radius(mm)	≥16	≥16	≥24	≥47
Operating Temperature(°C)	-65 ~ +85	-65 ~ +85	-65 ~ +85	-65 ~ +85
Proof Test Level (kpsi)	100	100	100	75

Specifications-2

Fibre Type	HP 600/630-37/1040E	HP 600/630-37/750E	HP 1000/1100-37/1400E
Part No.	HP2140-D	HP2140-E	HP2142-A
Optical Properties			
Numerical Aperture	0.37±0.02	0.37±0.02	0.37±0.02
Attenuation @850 nm(dB/km)	≤8.0	≤8.0	≤8.0
OH Content	Low OH	Low OH	Low OH
Refractive Index Profile	Step Index	Step Index	Step Index
Geometrical Properties			
Core Diameter (μm)	600.0±10.0	600.0±10.0	1000.0±20.0
Cladding Diameter (μm)	630+5/-10	630+5/-10	1100+10/-30
Coating Diameter (μm)	1040.0±30.0	750.0±30.0	1400.0±50.0
Core Concentricity Error (μm)	≤8.0	≤8.0	≤10.0
Material Composition			
Core Material	Pure Silica Glass	Pure Silica Glass	Pure Silica Glass
Cladding Material	Fluoroacrylate	Fluoroacrylate	Fluoroacrylate
Coating Material	ETFE	ETFE	ETFE
Mechanical Properties			
Short Term Bend Radius(mm)	≥58	≥58	≥73
Long Term Bend Radius(mm)	≥94	≥94	≥118
Operating Temperature(°C)	-65 ~ +85	-65 ~ +85	-65 ~ +85
Proof Test Level (kpsi)	75	75	85

Graded Index Multi-mode Fibre (GIMM)

YOFC silica-cladding multimode fibres (preforms) with graded index profile are comprehensively optimized at both 850nm and 1300nm operating wavelengths. At both wavelengths, extremely low attenuation and high bandwidth could be achieved. To satisfy the demand of client to the most extent, a series of silica-cladding graded index multimode fibres can be customized with different fibre designs, including core diameter, cladding diameter, fibre diameter and NA.

YOFC fibres are manufactured with the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Due to the inherent advantages of the process, YOFC fibres have extremely precise refractive index profiles (RIPs), which could provide excellent geometrical, optical, environmental and mechanical properties.

Customization Information

- Flexible Numerical Aperture (NA): 0.14-0.3
- Flexible Core-Cladding Diameter Ratio (CCDR): 1.05-2.0
- Core Diameter: 50µm-1000µm
- Customized Preform
- Silicone or Polyimide coating is available to achieve high temperature fibre
- Tight buffer with diameter 500µm or 900µm is available. PVC, ETFE and Hytrel are provided for the tight buffer material

Characteristics

- High coupling efficiency to LED and laser sources
- High power transmission
- Good stripping performance
- Low attenuation and high bandwidth

Application

- Fibre sensor and laser transmission
- Data communications, local area networks and CATV
- Medical apparatus
- Optical devices and connectors

Specifications-1

Fibre Type	GI 50/125-20/250	GI 80/125-30/250	GI 100/125-29/250	GI 100/140-29/250	GI 105/125-30/250	GI 100/125-14/250
Part No.	GI2012-E	GI2017-C	GI2016-F	GI2016-H	GI2017-A	GI2011-A
Optical Properties						
Numerical Aperture	0.20±0.015	0.30±0.02	0.29±0.02	0.29±0.02	0.30±0.02	0.14±0.02
Attenuation	@850nm (dB/km)	≤2.45	≤3.5	≤3.0	≤3.2	≤4.0
	@1300nm (dB/km)	≤0.6	≤0.7	≤0.7	≤0.8	≤1.0
Bandwidth	@850nm (MHz·km)	≥500	≥300	≥250	≥100	≥200
	@1300nm (MHz·km)	≥2000	≥200	≥500	≥200	≥300
Geometrical Properties						
Core Diameter (µm)	50.0±2.0	80.0±3.0	100.0±3.0	100.0±3.0	105.0±3.0	100.0±3.0
Cladding Diameter (µm)	125.0±2.0	125.0±2.0	125.0±2.0	140.0±2.0	125.0±2.0	125.0±2.0
Coating Diameter (µm)	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0
Core Concentricity Error (µm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core Non-circularity (%)	≤2.0	≤5.0	≤2.0	≤3.0	≤2.0	≤3.0
Cladding Non-circularity (%)	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Material Composition						
Core	Ge/F Doped silica Glass					
Cladding	Pure Silica Glass					
Coating	Dual-layer UV-Acrylat					
Mechanical Properties						
Proof Test Level (kpsi)	100	100	100	100	100	100
Spool Length (km)	Customized spool					

Specifications-2

Fibre Type	GI 105/125-24/250	GI 50/80-29/165	GI 300/330-25/500	GI 200/220-22/500	GI 230/250-22/500
Part No.	GI2014-J	GI2016-C	GI2014-B	GI2013-N	GI2013-P
Optical Properties					
Numerical Aperture	0.24±0.02	0.29±0.02	0.25±0.02	0.22±0.02	0.22±0.02
Attenuation	@850nm (dB/km)	≤3.5	≤4.0	≤7.0	≤6.0
	@1300nm (dB/km)	≤1.5	≤2.0		≤5.0
Bandwidth	@850nm (MHz·km)	≥200	≥200		
	@1300nm (MHz·km)	≥300	≥500		
Geometrical Properties					
Core Diameter (µm)	105.0±3.0	50.0±3.0	300.0±10.0	200.0±4.0	230.0±5.0
Cladding Diameter (µm)	125.0±2.0	80.0±2.0	330.0±5.0	220.0±3.0	250.0±5.0
Coating Diameter (µm)	250.0±10.0	165.0±8.0	500.0±20.0	500.0±20.0	500.0±20.0
Core Concentricity Error (µm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core Non-circularity (%)	≤2.0	≤2.0			
Cladding Non-circularity (%)	≤1.0	≤1.0			
Material Composition					
Core	Ge/F Doped silica Glass				
Cladding	Pure Silica Glass				
Coating	Dual-layer UV-Acrylate				
Mechanical Properties					
Proof Test Level (kpsi)	100	100	100	100	100
Spool Length (km)	Customized spool				

Step Index Multi-mode Fibre (SIMM)

YOFC silica-cladding multimode fibres (preforms) with step index profile are comprehensively optimized at both 850nm and 1300nm operating wavelengths. At both wavelengths, extremely low attenuation and high bandwidth could be achieved. To satisfy the demand of client to the most extent, a series of silica-cladding step index multimode fibres can be customized with different fibre designs, including core diameter, cladding diameter, fibre diameter and NA.

YOFC fibres are manufactured with the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Due to the inherent advantages of the process, YOFC fibres have extremely precise refractive index profiles (RIPs) to provide excellent geometrical, optical, environmental and mechanical properties.

Customization Information

- Flexible Numerical Aperture (NA): 0.10~0.34
- Flexible Core-Cladding Diameter Ratio (CCDR): 1.05~1.4
- Core Diameter: 40µm-800µm
- High strength fibre
- Customized Preform and Fluorine doped Substrate Tube
- Silicone or Polyimide coating is available to achieve high temperature fibre
- Tight buffer with diameter 500µm or 900µm is available. PVC, ETFE and Hytrel are provided for the tight buffer material

Characteristics

- High coupling efficiency to LED and laser sources
- High power transmission
- Good stripping performance
- Low loss broad spectrum application, 275~2100nm

Application

- Fibre sensor and laser transmission
- Data communications, local area networks and CATV
- Medical apparatus
- Optical devices and connectors

Specifications-1

Fibre Type	SI 40/125-22/250	SI 100/140-22/250	SI 105/125-15/250	SI 105/125-22/250	SI 110/125-20/250	
Part No.	SI2014-E	SI2014-H	SI2012-J	SI2014-D	SI2013-A	
Optical Properties						
Numerical Aperture	0.22±0.02	0.22±0.02	0.15±0.02	0.22±0.02	0.20±0.02	
Attenuation	@850nm (dB/km)	≤3.0	≤3.0	≤8.0	≤4.0	≤8.0
	@1300nm(dB/km)	≤2.0	≤1.2	≤3.0	≤2.0	≤3.0
Geometrical Properties						
Core Diameter (µm)	40.0±2.0	100.0±3.0	105.0±3.0	105.0±3.0	110.0±3.0	
Cladding Diameter (µm)	125.0±2.0	140.0±3.0	125.0±2.0	125.0±2.0	125.0±2.0	
Coating Diameter (µm)	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	
Core Concentricity Error (µm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0	
Core Non-circularity (%)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0	
Cladding Non-circularity (%)	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0	
Material Composition						
Core	Pure Silica Glass or Ge/F Doped Silica Glass					
Cladding	Pure Silica Glass or F Doped Silica Glass					
Coating	Dual-layer UV-Acrylate					
Mechanical Properties						
Proof Test Level (kpsi)	100	100	100	100	100	
Spool Length (km)	Customized spool					

Specifications-2

Fibre Type	SI 200/220-22/500	SI 200/240-22/500	SI 400/440-22/730	SI 600/660-22/960	SI 800/840-22/1100E
Part No.	SI2024-P	SI2014-Q	SI2024-G	SI2024-A	SI2523-B
Optical Properties					
Numerical Aperture	0.22±0.02	0.22±0.02	0.22±0.02	0.22±0.02	0.22±0.02
Geometrical Properties					
Core Diameter (µm)	200.0±5.0	200.0±5.0	400.0±8.0	600.0±10.0	800.0±10.0
Cladding Diameter (µm)	220.0±5.0	240.0±5.0	440.0±8.0	660.0±10.0	840.0±10.0
Coating Diameter (µm)	500.0±20.0	500.0±20.0	730.0±30.0	960.0±30.0	1100.0±50.0
Core Concentricity Error (µm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Material Composition					
Core	Pure Silica Glass or Ge/F Doped Silica Glass				
Cladding	Pure Silica Glass or F Doped Silica Glass				
Coating	Dual-layer UV-Acrylate or ETFE				
Mechanical Properties					
Proof Test Level (kpsi)	100	100	100	100	100
Spool Length (km)	Customized spool				

Bending Insensitive Single-mode Fibre (BI-SMF)

YOFC special BI-SMFs are optimized for enhanced macro-bending insensitivity compared to the regular SMFs. The bending insensitive single-mode fibres contain three attractive features: low intrinsic attenuation, excellent low macro-bending loss and high proof-test level.

YOFC special BI-SMFs have great advantage over suppression of bending loss in long wavelength region. It's not only supporting L-band applications but also allows for easy installation such as in small size optical device or other splicing cassettes. The fibre supports installation with small cable bending radii and compact components.

Characteristics

- Low macro-bending loss including L-band
- Low micro-bending induced loss
- Superior geometry
- Good mechanical properties, proof test level can reach 200 kpsi

Application

- Short pitch cables for special application
- High performance optical network operating in O-(E)-S-C-L band
- High speed optical routes in FTTx
- Cables with extremely tight bending requirements
- Small-sized optical component
- Optical-fibre guidance
- Hydrophone

Specifications

Fibre Type		BI 6/125-18/250	BI 5/125-20/250	BI 7/125-18/250	BI 7/80-18/170*	BI 8/125-14/250
Part No.		BI1011-A	BI1012-A	BI1015-A	BI1015-B	BI1016-A
Optical Properties						
Attenuation (dB/km)	1310 nm	≤0.39	≤0.52			≤0.35
	1383 nm					≤0.35
	1490 nm	≤0.26	≤0.52			
	1550 nm	≤0.24	≤0.33	≤0.26	≤0.28	≤0.21
	1625 nm	≤0.25	≤0.33	≤0.27	≤0.29	≤0.23
Zero Dispersion Wavelength (nm)		≤1420	≤1450			1300~1324
Cable Cut-off Wavelength λ_{cc} (nm)		≤1260	≤1260	1350 ~ 1500(λ_c)	1350 ~ 1500(λ_c)	≤1260
Mode Field Diameter (μm)	1310 nm	6.5±0.4	5.6±0.4			8.2~9.0
	1550 nm	7.4±0.5	6.5±0.5	7.5±0.4	7.0±0.4	9.1~10.1
Geometrical Properties						
Cladding Diameter (μm)		124.8±1.0	124.8±1.0	124.8±1.0	80.0±1.0	124.8±1.0
Cladding Non-circularity (%)		≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Coating Diameter (μm)		245.0±7.0	245.0±7.0	245.0±7.0	170.0±5.0	245.0±7.0
Core Concentricity Error (μm)		≤0.6	≤0.6	≤0.6	≤0.6	≤0.6
Macro-bending Induced Loss						
Φ10 mm-25turn (dB)	1550 nm			≤0.02	≤0.02	
Φ10 mm-1turn (dB)	1550 nm					≤0.15
Φ10 mm-1turn (dB)	1625 nm					≤0.45
Φ15 mm-1turn (dB)	1550 nm	≤0.05	≤0.01			≤0.08
Φ15 mm-1turn (dB)	1625 nm	≤0.10	≤0.02			≤0.25
Φ20 mm-10turns (dB)	1550 nm	≤0.02	≤0.005			≤0.03
Φ20 mm-10turns (dB)	1625 nm	≤0.05	≤0.005			≤0.10
Φ30 mm-10turns (dB)	1550 nm	≤0.01	≤0.002			
Φ30 mm-10turns (dB)	1625 nm	≤0.02	≤0.005			
Environmental Properties		-60°C~85°C		1310 nm, 1550 nm and 1625 nm		
Temperature Induced Loss (dB/km)	-60°C~85°C	≤0.05	≤0.05	≤0.05	≤0.05	≤0.05
Mechanical Properties						
Proof Test Level (kpsi)	offline	150	100	200	200	150

* Can offer 135 μm outer diameter

Special Cutoff Wavelength Single-mode Fibre (SW-SMF)

YOFC SW-SMFs are optimized in the core parameters and waveguide structure on the basis of ordinary single mode fibre. It takes advantage of PCVD process to realize operating wavelength of single-mode transmission under 980nm.

Characteristics

- Single cladding step profile
- Good Geometrical uniformity
- Good mechanical properties

Application

- Special light source device
- Pump tail fibre
- Coupler
- Compact optical device

Specifications

Fibre Type	SW 630_125-13/250	SW 780_125-14/250
Part No.	SW1010-A	SW1011-A
Optical Properties		
MFD(μm)	4±0.4 (630nm)	4.5±0.4(780nm)
NA(typical value)	0.13	0.14
Attenuation (dB/km)	≤8 (630nm)	≤4.3 (780nm)
Cut-off Wavelength (nm)	570±50	720±50
Geometrical Properties		
Cladding Diameter(μm)	124.8±0.7	124.8±0.7
Cladding Non-circularity(%)	≤1.0	≤1.0
Core/Cladding Concentricity(μm)	≤0.6	≤0.6
Coating Diameter(μm)	245±7	245±7
Curl(m)	≥4	≥4
Mechanical Properties		
Proof Test Level(kpsi)	100	100
Spool Length(km)	2~25	2~25
Environmental Properties		
Operating Temperature(°C)	-60~+85	-60~+85



Photonic Single-mode Fibre Series for Component Use (PH-SMF)



YOFC Photonic single-mode fibres are specially developed for optical components. The fibre has a Ge/F codoped material system and special fibre waveguide structure by PCVD process. It is suitable for FBT coupler. For the tighter geometric characteristics and optimized-optical specifications, the fibre is good performance in pigtails use. It is compatible with G.652 fibre and has good macro-bending performance which makes it very suitable for the mini components. The fibre meets the standards of G.652/G.657 of ITU-T and so on. It suits the full range application from 1260nm to 1625nm.

Characteristics

- Tighter geometric and optic specifications
- Good splicing performance
- Full compatibility with the G.652 fibre
- Good anti-macro-bend performance
- Good anti-micro-bend performance
- High reliability enhanced by 200kpsi

Application

- Bending sensitive condition/mini component
- Pigtails/Patch cords
- Connectors
- Couplers
- Miniaturized integrated Erbium-doped Fibre Amplifier (EDFA)
- DWDM Components

Standards

- YOFC photonic single-mode fibre series for component meets the ITU-TG.652&G.657 and IEC60973-2-50 or exceeding.

Specifications

Fibre Type	PH 9/125-13/250A	PH 9/125-13/250B	PH 9/125-13/250C	PH 9/125-14/250	PH 8/125-14/250
Part No.	PH1010-A	PH1010-B	PH1010-C	PH1011-A	PH1012-A
Optical Properties					
Ref.Standards	G.652.D	G.652.B	G.652.B	G.657.A1	G.657.B3
Attenuation	@1310 (dB/km)	≤0.35	≤0.35	≤0.35	≤0.35
	@1383(dB/km)	≤0.35		≤0.35	≤0.35
	@1550 (dB/km)	≤0.20	≤0.20	≤0.20	≤0.22
	@1625(dB/km)	≤0.23	≤0.24	≤0.24	≤0.24
Zero Chromatic Dispersion Wavelength (nm)	1312±12	1312±12	1312±12	1312±12	1312±12
Zero Chromatic Dispersion Slopeps/ (nm ² ·km)	≤0.091	≤0.091	≤0.091	≤0.089	≤0.092
Dispersion	@1550 nm ps/ (nm·km)	≤18.0	≤18.0	≤18.0	≤18.0
	@1625 nm ps/ (nm·km)	≤22.0	≤22.0	≤22.0	≤22.0
PMD(PS/√ km)	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1
PMDQ(PS/√ km)	≤0.06	≤0.06	≤0.06	≤0.06	≤0.06
Cutoff Wavelength (nm)	≤1280(λc)	≤1260(λcc)	≤1260(λcc)	≤1260(λcc)	≤1260(λcc)
1310 MFD(μm)	8.7~9.5	8.7~9.5	8.4~9.2	8.4~9.2	8.0~9.2
1550 MFD(μm)	9.9~10.9	9.9~10.9	9.9~10.9	9.3~10.3	9.1~10.1
Geometrical Properties					
Clad Diameter (μm)	124.5±0.5	124.5±0.5	124.5±0.5	124.5±0.5	124.5±0.5
Non-circularity of Cladding (%)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Core/Clad Concentricity(μm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Coating Diameter (μm)	242±5	242±5	242±5	242±5	242±5
Coating/Clad Concentricity Error (μm)	≤8	≤8	≤8	≤8	≤8
Warpage Degree(Radius)(m)	≥4	≥4	≥4	≥4	≥4
Macrobend Loss					
ΦD32 mm/1circle@1550nm(dB)	≤0.03	≤0.05			
Φ50 mm/100circle@1310/1550nm(dB)	≤0.03	≤0.05			
Φ60 mm/100circle@1625nm(dB)	≤0.03	≤0.05			
Φ20 mm/1circle@1550nm(dB)			≤0.5	≤0.5	≤0.03
Φ20 mm/1circle@1625nm(dB)			≤1.5	≤1.5	≤0.10
Φ15 mm/1circle@1550nm(dB)					≤0.08
Φ15 mm/1circle@1625nm(dB)					≤0.25
Φ10 mm/1circle@1550nm(dB)					≤0.15
Φ10 mm/1circle@1625nm(dB)					≤0.45
Environmental Properties					
Item	Condition	1310nm, 1550nm and 1625nm Additional Attenuation			
Temp.Circulation	-60°C~ +85°C	≤0.05			(dB/km)
Temp.-humidity Circulation	-10°C~ +85°C, Relative Humidity 98%	≤0.05			(dB/km)
Water Soaking	23°C, 30Days	≤0.05			(dB/km)
Damp and Hot	85°C, Relative Humidity 85%, 30Days	≤0.05			(dB/km)
Dry and Hot	85°C, 30Days	≤0.05			(dB/km)
Mechanical Properties					
Proof Test		100 ~ 200			(kpsi)
		1.0 ~2.0			(%)
		9 ~18			(N)
n _d	≥20				

Coupling Single-mode Fibre(CSF)

YOFc single-mode coupled fibres are particularly developed for fused taper coupler application. Fabricated with patented Plasma Chemical Vapor Deposition (PCVD) process, YOFc coupler fibre offers excellent uniformity, precise geometry and good optical performance. Special optical structure and dual acrylate coating system ensures high mechanical strength and insensitivity to bending. This fibre is also an ideal option for application in near-infrared communication devices and sensors.

Characteristics

- Tight geometric control
- Superior mechanical protection by dual acrylate coating system
- Ultra-low bending loss
- Low attenuation
- Low insertion loss
- Low splice loss
- Excellent consistency and reliability

Application

- Optical fibre couplers, splitters and combiners
- Component fibre for optical fibre lasers, EDFAs and DWDM system
- Pump laser pigtailed
- Gratings
- Fibre sensors and gyroscope
- Low-loss fused optical devices for C/L band application

Specifications

Fibre Type	CS 1060_125-14/250	CS 1310_125-16/250	CS 980_125-16/250	CS 980_125-22/250	CS 980/80-20/165
Part No.	CS1016-A	CS1011-A	CS1015-A	CS1015-C	CS1015-D
Operation Wavelength(nm)	980/1060	1310/1550	980/1550	980/1550	980/1550
Mode-field Diameter(μm)	5.9±0.5@980nm	6.0±0.5@1310nm	5.0±0.5@980nm	4.0±0.5@980nm	4.0±0.5@980nm
	6.2±0.5@1060nm	7.1±0.5@1550nm	7.5±0.5@1550nm	6.3±0.5@1550nm	6.5±0.5@1550nm
Cutoff Wavelength(nm)	920±50	1240±50	920±50	920±50	920±50
Attenuation(dB/km)	≤2.1@980nm	≤0.75@1310nm	≤2.5@980nm	≤2.5@980nm	≤2.5@980nm
	≤1.5@1060nm	≤0.75@1550nm	≤1.0@1550nm	≤1.0@1550nm	≤1.0@1550nm
Bending-loss	Φ20mm O.D. (dB/turn)	980nm			≤0.01
		1310nm		≤0.01	
		1550nm		≤0.01	
	Φ30mm O.D. (dB/turn)	980nm		≤0.01	
1550nm			≤0.08		
Numerical Aperture	0.14	0.16	0.16	0.22	0.20
Core Diameter (μm)	5.1	5.5	4.4	3.5	3.6
*Cladding Outside Diameter (μm)	125±0.5	125±0.5	125±0.5	125±0.5	80±1
Coating Outside Diameter (μm)	245±7	245±7	245±7	245±7	165±5
Core-to-Cladding Offset (μm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Proof Test Level (kpsi)	100 or 200	100 or 200	100 or 200	100 or 200	100 or 200
Operating Temperature(°C)	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85

* Coupler fibres with cladding diameter of 80 μm are also available.

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High Temperature Fibre (HTF)



Data transmission, high power laser delivery and sensors require special reliability at demanding environment conditions. A special challenge is a changing temperature, extreme heat or extreme cold conditions for a fibre when used as fire detector, temperature sensor or for data transmission in certain special industrial applications. YOFC offers HTF for medium and high temperature environment requirements with the temperature up to 300 °C .

Characteristics

- Excellent high temperature stability
- Excellent optical and geometrical properties
- Customized profile and sizes

Typical Products

1. Special Polymer Coated High Temperature Fibre

Operation temperature: long term, -65 °C to +150 °C ; intermittent, up to 200 °C

Cladding diameter range from 200µm to 660µm, customized NA and coating diameter

- Coating diameter (125µm cladding fibres): 245±10µm
- Coating diameter (200~660µm cladding fibres): NA: Customized

Application

- The applications of YOFC HTF are demanded in environments such as mining industry, aerospace, military, oil&gas industry and medical that requires a maximum protection of the fibre at very high temperatures.

2. Optimized Polyimide Coated High Temperature Fibre

Operation temperature: in long term, -65 °C to +300 °C ; intermittent, up to 350 °C

Cladding diameter range from 200µm to 660µm, customized NA and coating diameter

- Coating diameter (125µm cladding fibres): 155±5µm
- Coating diameter (200~660µm cladding fibres): NA: Customized

Specifications-1

Fibre Type	HT 9/125-14/250(150)	HT 9/125-14/155(300)
Part No.	HT1210-A	HT1510-B
Optical Properties		
Mode Field Diameter@1310nm (µm)	9.2±0.4	9.2±0.4
Mode Field Diameter@1550nm (µm)	10.4±0.8	10.4±0.8
Fibre Cut-off Wavelength (nm)	1180~1330	1180~1330
Attenuation@1310nm (dB/km)	≤0.4	≤1.0
Attenuation@1550nm (dB/km)	≤0.25	≤0.8
Geometrical Properties		
Cladding Diameter (µm)	125.0±1.0	125.0±2.0
Coating Diameter (µm)	245.0±10.0	155.0±5.0
Cladding Non-circularity (%)	≤1.0	≤1.0
Core/ Cladding Concentricity Error(µm)	≤0.8	≤0.8
Coating/ Cladding Concentricity Error(µm)	≤12.0	
Mechanical Properties		
Proof Test (kpsi)	100	100
Operating Temperature (°C)	-65 ~ +150 Short term +200	-65 ~ +300 Short term +350
Coating Type	Special Polymer	Polyimide

Specifications-2

Fibre Type	HTG 50/125-20/250(150)	HTG 62.5/125-27/250(150)	HTG 50/125-20/155(300)	HTG 62.5/125-27/155(300)
Part No.	HT2312-B	HT2215-A	HT2512-B	HT2515-B
Optical Properties				
*Attenuation@850 nm (dB/km)	≤3.0	≤3.0	≤4.0	≤4.0
*Attenuation@1300 nm (dB/km)	≤1.0	≤1.0	≤2.0	≤2.0
Bandwidth@850 (MHz·km)	≥150	≥150	≥150	≥150
Bandwidth@1300 nm (MHz·km)	≥300	≥300	≥300	≥300
NA	0.200±0.015	0.275±0.015	0.200±0.015	0.275±0.015
Geometrical Properties				
Core Diameter (µm)	50±2.5	62.5±2.5	50±3	62.5±3
Cladding Diameter (µm)	125±2	125±2	125±2	125±2
Coating Diameter (µm)	245±10	245±10	155±5	155±5
Cladding Non-circularity (%)	≤1	≤1	≤2	≤2
Core/Cladding Offset (µm)	≤1.5	≤1.5	≤1.5	≤1.5
Coating/Cladding Offset (µm)	≤12	≤12		
Mechanical Properties				
Proof Test (kpsi)	100	100	100	100
Operating Temperature (°C)	-65 ~ +150 Short term +200		-65 ~ +300 Short term +350	
Coating Type	Special Polymer		Polyimide	

• For attenuation measurement, the fibre is wound with near zero tension onto a greater than 36cm diameter measurement spool.
 • Customized products are available upon customer request, such as different geometrical parameters, bandwidth, NA, higher proof test level, etc.

Radiation Resistant Single-mode Fibre (RRF)

Radiation Resistant Single-mode Fibre is comprehensively optimized at the operating wavelength. At the wavelength, low dispersion, low loss and superior radiation-resistant property could be achieved. With these features, Radiation Resistant Singlemode Fibre has excellent properties of optical transmission under radiation.

YOFC fibre is manufactured through the high precision Plasma Chemical Vapor Deposition (PCVD) process which makes fibre with precise refractive index profile, material uniformity and dimension tolerance, and low attenuation. Dual-layer, UV-cured Acrylate coating, which has superior ability to protect the optical fibre, is designed for tight buffering optical cable that is much more stringent. It can show excellent performance in tight buffering structure, which equips the fibre with low micro-bending induced loss. This coating is easy to be stripped without residues in different environment. In order to improve the adaptability to the harsh environment, nd is more superior and steady.

Characteristics

- Low dispersion and low attenuation
- Low PMD
- Superior mechanical protection and good stripping performance
- Outstanding uniformity and geometry control
- Low radiation loss

Application

- YOFC Radiation Resistant Single Mode Fibre is extensively used in aerospace, atomic energy, medical, oil/gas and scientific research for its advantages of low attenuation, low radiation loss, low dispersion and low PMD.

Specifications

Fibre Type		RD1310-G1	RD1310-G2
Part No.		RD1011-C	RD1011-D
Optical Properties			
Attenuation (dB/km)	1310nm	≤0.45	≤0.5
Zero Dispersion Wavelength (nm)		1312±12	1312±25
Zero Dispersion Slope (ps/(nm ² ·km))		≤0.091	≤0.1
The Maximum Value of a Single Fibre (ps/√km)		≤0.1	≤0.2
Fibre Chain Value (M=20, Q=0.01%) (ps/√km)		≤0.06	≤0.2
Cable Cut-off Wavelength (λ _{cc})(nm)		≤1260	≤1290
MFD (μm)	1310nm	8.7~9.5	7.5~9.5
Geometry Properties			
Cladding Diameter (μm)		125.0±1.0	125.0±2.0
Cladding Non-Circularity (%)		≤1.0	≤1.0
Coating Diameter (μm)		245±7	245±10
Coating/Cladding Concentricity Error (μm)		≤12.0	≤12.0
Coating Non-Circularity (%)		≤6.0	≤6.0
Core /Cladding Concentricity Error (μm)		≤0.6	≤0.6
Twist Radius (m)		≥4.0	≥4.0
Environmental Properties			
Temperature Induced Attenuation (dB/km)	-60°C~85°C	≤0.05	≤0.1
TCT (dB/km)	-10°C~85°C, relative humidity of 98%	≤0.05	≤0.1
Water Induced Attenuation (dB/km)	23°C, 30Days	≤0.05	≤0.1
Wet Heat (dB/km)	85°C, relative humidity of 85%, 30Days	≤0.05	≤0.2
Dry Heat (dB/km)	85°C, 30Days	≤0.05	≤0.1
Mechanical Properties			
Proof Test (kpsi)	off-line	≥100	≥100
Strip Force (N)	average value	≥1.0 ≤5.0	≥1.0 ≤5.0
	peak value	≥1.3 ≤8.9	≥1.3 ≤8.9
n _d		≥20	≥20
Anti-radiation Characteristics: according to standard TIA/EIA 455-64 (dB/100m)	Total dose is 50k rad,with the continuous radiation whose dose rate is 0.1 rad/s(25°C) , 1310nm wavelength induced attenuation	≤0.3	N/A
	Total dose is 2000Gy,with the continuous radiation whose dose rate is 0.5Gy/s(25°C) , 1310nm wavelength induced attenuation	N/A	≤0.8
	Total dose is 200000Gy,with the continuous radiation whose dose rate is 0.5Gy/s(25°C) , 1310nm wavelength induced attenuation	N/A	≤2.5

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Radiation Resistant Multi-mode Fibre (RRF)

To meet the special application requirements of the optical fibre in the radiation environment, the multi-mode fibre with radiation resistance is developed by adjusting the optical fibre components and improving the process technology. This fibre has graded refractive index profile, which fully optimizes the waveguide characteristics of 850nm & 1300nm operation wavelength, and has very low attenuation and high bandwidth. YOFC radiation resistant multi-mode series fibres have 50µm core, Besides, YOFC also can make customized tight-buffered radiation resistant multi-mode fibre.

Process

- The fibre is produced by plasma activated chemical vapor deposition (PCVD) process. the radiation resistant multi-mode fibre fabricated by PCVD process has excellent radiation resistant properties at 850nm& 1300nm based on its special glass components and manufacturing process
- Due to the accurate control of deposition of PCVD process, YOFC radiation resistant multi-mode fibre has perfect waveguide refractive index profile, which guarantees the excellent geometrical, attenuation and bandwidth characteristics

Characteristics

- Stable transmission property under radiation environment
- High bandwidth and low attenuation @ 850nm & 1300nm
- Good stripping and welding Properties
- Suitable for various cable structures and favorable for tight/loose tubes

Standard

- YOFC radiation resistant fibre complies with or exceeds ITU-T.G651 & IEC 60793-2-10 A1a fibre specification.

Application

- Aerospace / Aircraft
- Military Field
- Atomic Energy Industry
- Petroleum & Offshore Exploration
- Medical Equipment
- Basic Research

Specifications

Fibre Type	RDG 50/125	
Part No.	RD2011-A	
Optical Properties		
Attenuation@850/1300nm(dB/km)	2.5/1.0	
Bandwidth@850/1300nm(MHz·km)	300/300	
Numerical Aperture	0.2± 0.015	
Geometrical Properties		
Core Diameter(µm)	50 ±2.5	
Cladding Diameter(µm)	125 ±1	
Coating Diameter(µm)	245 ±10	
Core/Cladding Concentricity(µm)	≤1	
Core Non-circularity(%)	≤3	
Coating/Clad Concentricity(µm)	≤10	
Cladding Non-Circularity(%)	≤0.7	
Spool Length(km)	1.1~8.8	
Material Composition		
Core Material	F Doped Silica Glass	
Cladding Material	Pure Silica Glass	
Coating Material	Dual-layer UV-Acrylate	
Environmental Properties		
Temperature Induced Loss(dB/km)	≤0.2	
Temperature-humidity Cycling Induced Attenuation(dB/km)	≤0.2	
Watersoak Dependence Induced Attenuation (dB/km)	≤0.2	
Damp Heat Dependence Induced Attenuation(dB/km)	≤0.2	
Dry Heat Aging (dB/km)	≤0.2	
Mechanical Properties		
Proof Test Level(kpsi)	≥75	
Strip Force(N)	1.2	
	≥1.2 ≤8.9	
Dynamic Stress Corrosion Susceptibility Parameter n _d	≥24	
Radiation-resistance Characteristics: according to TIA/EIA 455-64 (dB/km)	Total dose :250kGy, dose rate: 1Gy/s (25°C), induced attenuation@1310nm	≤15

Ultraviolet Optimized Fibre (UVF)

YOFC UV fibres are designed for the light source wavelength between 200nm to 670nm. Pure Silica and high OH are used in fibre core in order to enhance good and stable transmission performance.

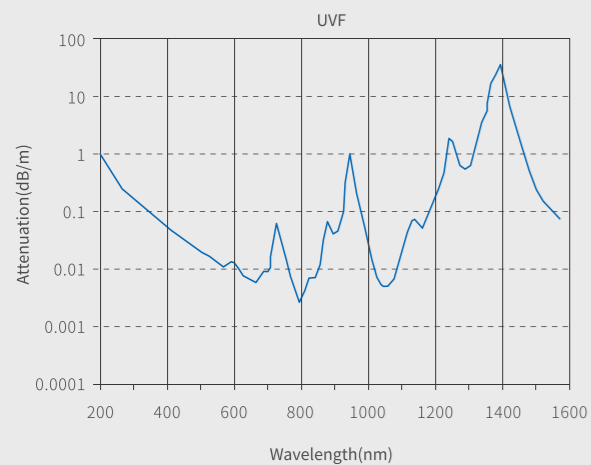
Characteristics

- Step index profile
- Pure silica core structure
- Customized geometry , NA and coating materials
- High OH in core
- Low-loss for UV-band
- Stable attenuation of long working hours

Application

- Laser transmission
- Medical diagnosis
- Scientific research
- Optical devices and connectors
- Sensors
- Analytical instruments
- UV curing

UV fibre attenuation spectrum



Specifications-1

Fibre Type	UV 25/125-12/250	UV 34/125-12/250	UV 40/80-22/165	UV 40/125-22/250
Part No.	UV2011-A	UV2012-A	UV2013-B	UV2014-B
N.A	0.12	0.12	0.22	0.22
Core Diameter(μm)	25±5	34±5	40±3	40±3
Cladding Diameter(μm)	124.7±1.0	124.7±1.0	80.0±2.0	124.7±1.0
Coating Diameter(μm)	242±5	242±5	165±5	242±5
Core/Cladding Concentricity Error(μm)	≤0.6	≤0.6	≤0.6	≤0.6
Proof Test Level(kpsi)	100	100	50	100
Length(km)	≤3	≤3	≤3	≤3

Specifications-2

Fibre Type	UV50/125-22/250	UV 60/125-12/250	UV 60/125-22/250	UV 105/125-22/250	UV 200/220-22/500
Part No.	UV2015-A	UV2016-A	UV2016-B	UV2017-A	UV2022-A
N.A	0.22	0.12	0.22	0.22	0.22
Core Diameter(μm)	50±2.5	60±2.5	60±2.5	105±3	200±3
Cladding Diameter(μm)	124.7±1.0	124.7±1.0	124.7±1.0	124.7±1.0	220±5
Coating Diameter(μm)	242±5	242±5	242±5	242±5	500±25
Core/Cladding Concentricity Error(μm)	≤0.6	≤0.6	≤0.6	≤0.6	≤1.0
Proof Test Level(kpsi)	100	100	100	100	50
Length(km)	≤3	≤3	≤3	≤3	≤1

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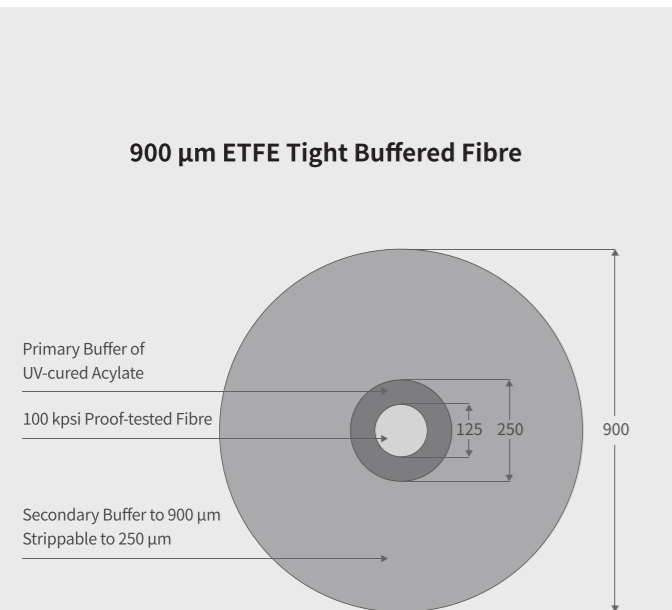
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ETFE Tight Buffered Fibre

ETFE is an engineering plastic with high performance, and it is a copolymer of ethylene and tetrafluoroethylene, with excellent general property, such as outstanding resistance to heat and flame, low temperature resistance, insulation resistance, chemical resistance, and particular less viscous performance. Therefore, ETFE tight buffered fibre also has above-mentioned performance, and can be applied to heat resistance, flame retardant and other special field.

All of YOFC ETFE tight buffered fibre have past 100kpsi proof-test, with a primary coating of UV-cured acrylate to a diameter of 250µm and a secondary ETFE buffer to 900µm.

The primary coating and secondary buffer could be mechanically removed to the 125µm glass diameter in one step, which could be used for direct termination with connectors. Also it permits mechanical stripping in short lengths (about 15mm) to remove the secondary buffer and leave the 250µm primary coating intact, which is available for splicing to similar buffered fibres from loose-tube gel-filled cables.



Characteristics

- Highest flame retardant grade of UL94 V-0
- Flexibility at low temperature
- Retention of properties after aging at elevated temperatures up to 150°C
- Ultimate protection for fibre

Application

- Temperature and stress monitoring
- Hazardous environment connectivity
- Linking optical communication modules/optical link couplers
- Providing an effective resistance to water vapor, oils/fuels, acids/alkalis, and solvents, which could adversely affect the fibre's signal transmission capabilities

Dimension of TBF (Customer sizes are available through minimum order.)

Outer Diameter (µm)	Core Concentricity Error	Non-circularity
900 ± 50	<6%	<3%

Material Properties

Flame Retardant Grade	UL94 V-0		
Safety and Environment	RoHS		
Tubing Shrinkage @85°C, 4 hours	≤0.5%		
Property	Value	Unit	Test Method
Flexural Modulus	641.1	MPa	ASTM D790
Tensile Strength at 23°C	37.9	MPa	ASTM D1708
Elongation at 23°C	>300	%	ASTM D1708
Melt Point	220~255	°C	ASTM D3159
LOI	34		ASTM D2863

Fibre Attenuation

Fibre	Typical Value (dB/km)				Max Value (dB/km)			
	SM		MM		SM		MM	
Wavelength (nm)	1310	1550	850	1300	1310	1550	850	1300
Attenuation @23°C	0.338	0.193	2.85	0.60	0.380	0.250	3.50	1.50

Environmental Properties

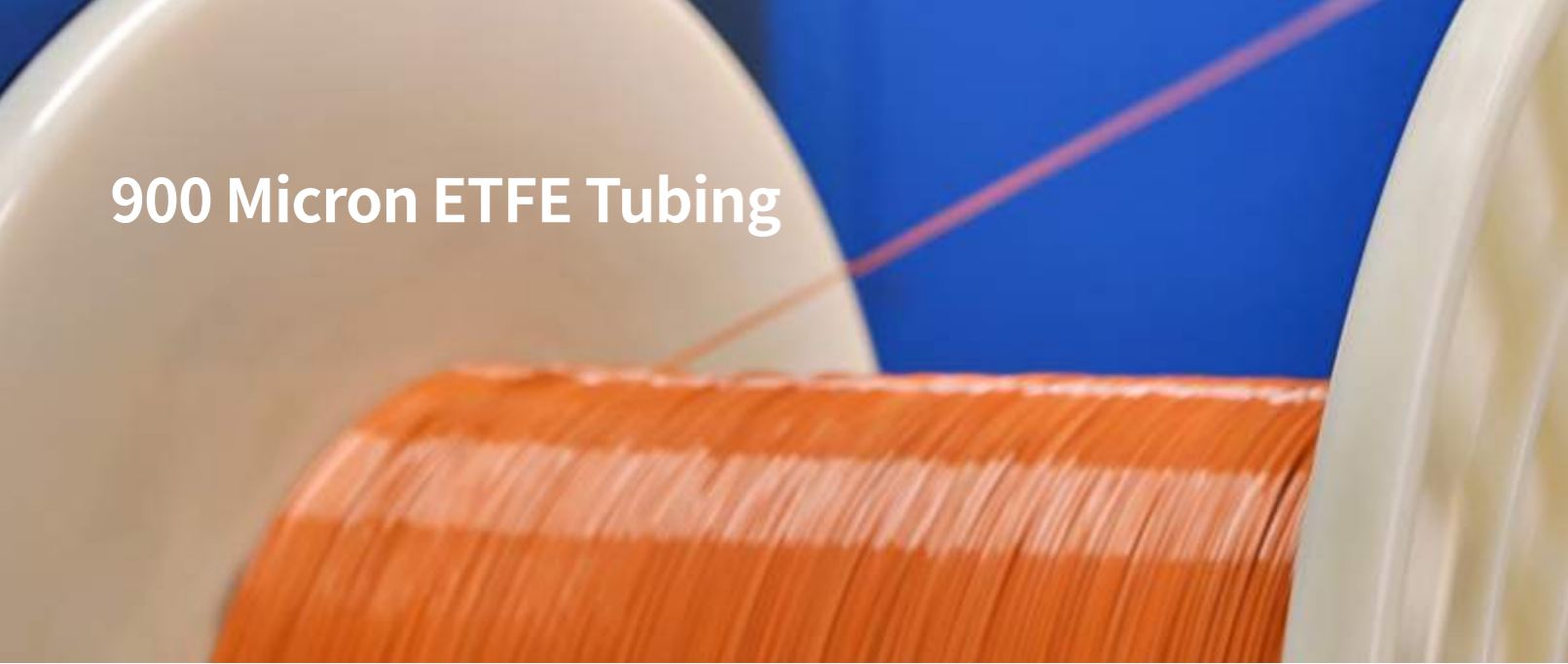
Operating (°C)	Static Diameter (mm)	Storage (°C)	Dynamic Diameter (mm)	Installation (°C)
-55 ~ + 150	10 x Tight tube diameter	-40 ~ + 80	20 x Tight tube diameter	-20 ~ + 50

Product Colour

Blue	BU	Orange	OR	Green	GN
Brown	BR	Gray	GY	White	WHT
Red	RD	Black	BK	Yellow	YW
Violet	VT	Pink	PN	Light Blue	LB

- Customer colors are available through minimum order.
- Customized : YOFC can provide different tight buffered materials, such as ETFE, LCP, TPEE, PFA, PEEK, PA.

900 Micron ETFE Tubing



YOFC's 900 micron ETFE tubing can be employed as buffering material and provide additional protection for use with 250µm fibre.

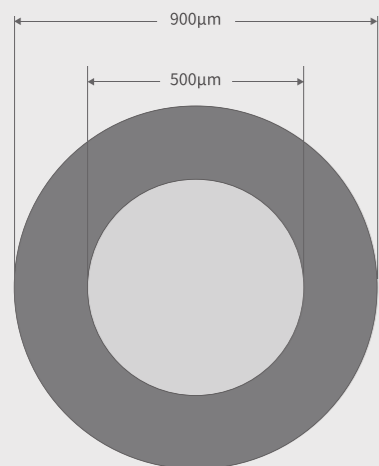
Made from ETFE possessing, ETFE tubing has some excellent property of the material, such as resistance to heat and flame, and high specific dielectric strength, and gives optimal protection to 250µm fibre.

Application

- protect bare fibre in any situation against mechanical damage during handling and installation
- provide an effective resistance to water vapor, oils/fuels, acids/alkalis, and solvents, which could adversely affect the fibre's signal transmission capabilities
- Excellent wear properties in many applications, and in cases of high voltage, radiant, medical equipments
- Can be easily installed over fibre up to more than 5 meters

Characteristics

- Highest flame retardant grade of UL94 V-0
- Flexibility at low temperature
- Retention of properties after aging at elevated temperatures up to 150°C



Dimension of Tubing

Inner Diameter (µm)	Outer Diameter (µm)	Core Concentricity Error	Non-Circularity
500.0 ± 50.0	900.0 ± 50.0	<6%	<3%

Material Properties

Flame Retardant Grade	UL94 V-0 & RoHS			
Tubing Shrinkage @85°C, 4 hours	≤2.0%			
Material	Property	Value	Unit	Test Method
ETFE	Flexural Modulus	641.1	MPa	ASTM D790
	Tensile Strength at 23°C	37.9	MPa	ASTM D1708
	Elongation at 23°C	>300	%	ASTM D1708
	Melt Point	220~255	°C	ASTM D3159
	LOI	34		ASTM D2863

Environmental Properties

Operating (°C)	Static Diameter (mm)	Storage (°C)	Dynamic Diameter (mm)	Installation (°C)
-55 ~ + 150	10 x Tight tube diameter	-40 ~ + 80	20 x Tight tube diameter	-20 ~ + 50

Product Colour

	Blue	BU		Orange	OR		Green	GN
	Brown	BR		Gray	GY		White	WHT
	Red	RD		Black	BK		Yellow	YW
	Violet	VT		Pink	PN		Light Blue	LB

- Customer colors are available through minimum order.
- Remark: YOFC can provide different diameter ETFE tight buffered fibre of various fibre, according to the requirement of client.

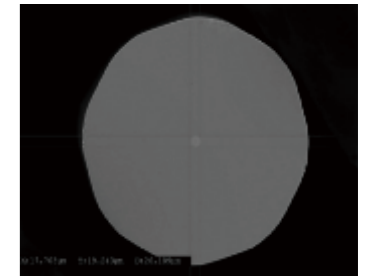
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Double-clad Ytterbium Doped Fibre(YDF)

YDFC double-clad ytterbium doped fibre (YDF) is one kind of active fibre applied for 1 micrometer fibre optical amplifier and fibre laser. Laser made by fibre cavity is extensively used in areas as military, material processing and scientific research. Fibre laser is widely used for its advantages of lightness, efficiency and stability, which are competitively alternative to solid state laser.



Characteristics

- Precise geometry
- High Ytterbium doped concentration
- Low NA core, LMA designed
- High laser slope efficiency
- Low photo-darkening
- Stable storage and operate in extreme atmosphere

Application

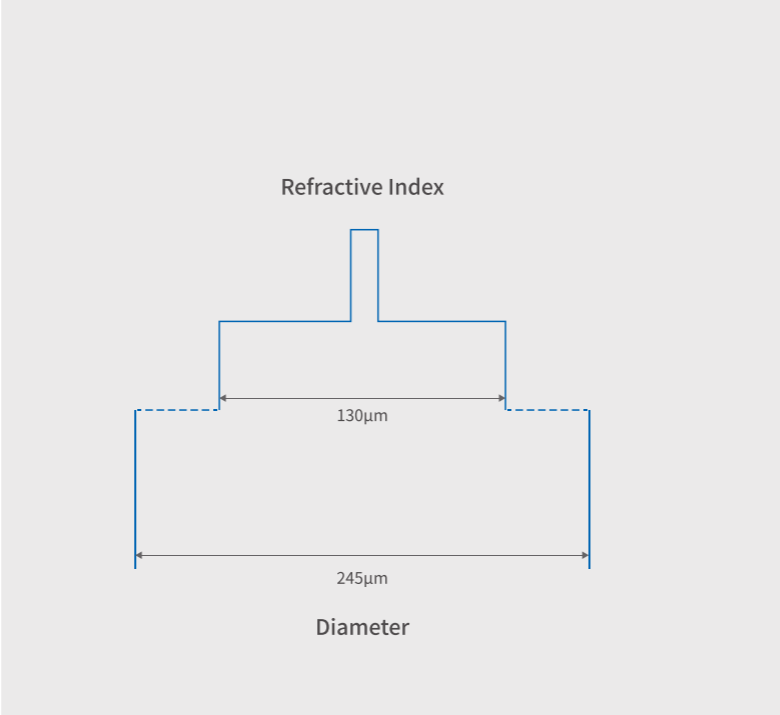
- CW/Pulse fibre laser and amplifier
- Military, Industry, Medical
- Material processing
- Fibre laser source

Specifications

Fibre Type	YDF_DC 10/125	YDF_DC 20/125	YDF_DC 20/400	YDF_DC 25/250	YDF_DC 30/250	YDF_DC 30/400
Part No.	YD1110-A	YD1110-B	YD1110-C	YD1110-D	YD1110-E	YD1110-F
Geometrical Properties						
Core Diameter (μm)	10.5±1.0	19.5±1.5	20.0±2.0	25.0±2.5	30.0±3.0	30.0±3.0
Cladding Diameter (flat-to-flat) (μm)	125±3.0	125±3.0	400.0±15.0	250.0±10.0	250.0±10.0	400.0±10.0
Coating Diameter (μm)	245.0±15.0	245.0±15.0	550.0±20.0	400.0±20.0	400.0±20.0	550.0±20.0
Inner Clad Shape	Octagon					
Optical Properties						
Operating Wavelength (Yb ³⁺) (nm)	1030~1115	1030~1115	1030~1115	1030~1115	1030~1115	1030~1115
Background Attenuation @1200nm (dB/km)	<30	<30	<30	<30	<30	<30
Cladding Pump Absorption @915nm (dB/m)	1.6±0.3	3.6±0.3	0.4±0.05	1.6±0.2	2.0±0.2	0.6±0.1
Core NA	0.08±0.01	0.08±0.01	0.06±0.01	0.06±0.01	0.06±0.01	0.06±0.01
Inner Cladding NA	≥0.46	≥0.46	≥0.46	≥0.46	≥0.46	≥0.46
Proof Test (kpsi)	100	100	100	100	100	100
Coating Material	Low Index Polymer					

Double/Single-clad Passive Fibre(GDF)

YOFC double/single-clad passive fibre is optimized precisely to match the DC-YDF series, with low splice performance. The fibre is widely used in industrial, medical, military and other fields.



Application

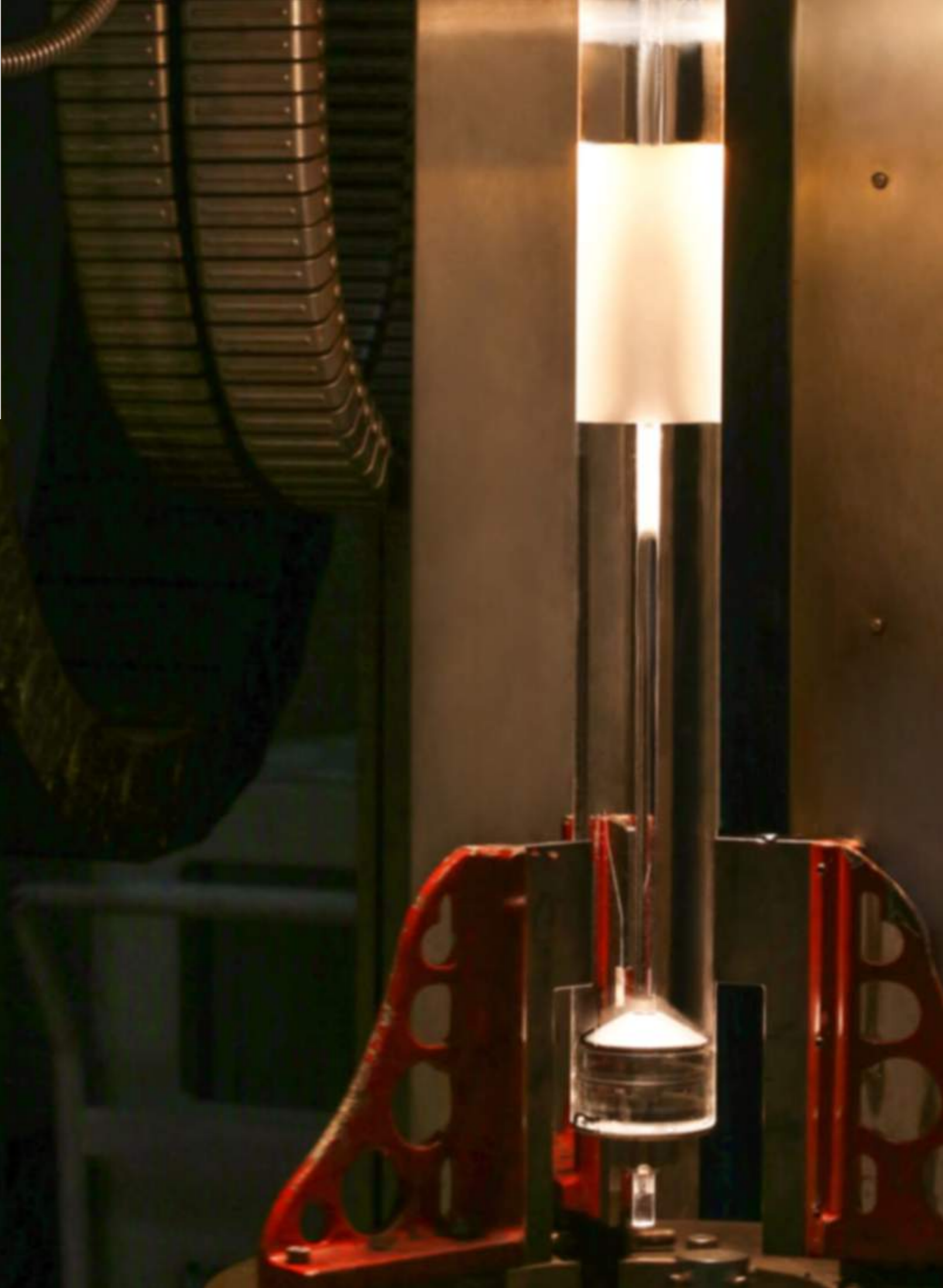
- Pulse / CW fibre laser / amplifier
- Materials processing
- Pigtail
- Fibre combiner
- FBG

Characteristics

- Precise geometry
- Low splice loss
- Low NA core to maintain excellent beam quality

Double/Single-clad Passive Fibre

Fibre Type	GDF_SC 10/130	GDF_DC 10/130	GDF_DC 20/130	GDF_DC 25/250	GDF_DC 30/250	GDF_DC 20/400	GDF_DC 20/400(L)
Part No.	SG1010-A	DG1110-A	DG1110-B	DG1110-D	DG1110-E	DG1110-C	DG1110-M
Optical Properties							
Operating Wavelength(nm)	1060~1600	1060~1600	1060~1600	1060~1600	1060~1600	1060~1600	1060~1600
Core NA	0.08±0.01	0.08±0.01	0.08±0.01	0.065±0.005	0.065±0.005	0.065±0.005	0.12±0.01
Inner Cladding NA		≥0.46	≥0.46	≥0.46	≥0.46	≥0.46	≥0.46
Core Attenuation@1300 nm (dB/km)	≤40.0	≤40.0	≤40.0	≤45.0	≤45.0	≤12.0	≤20.0
Core Attenuation@1200 nm(dB/km)	≤20.0	≤20.0	≤20.0	≤30.0	≤30.0	≤8.0	≤15.0
Clad Attenuation@1095nm(dB/km)		≤15.0	≤15.0	≤15.0	≤15.0	≤15.0	≤20.0
Geometrical Properties							
Cladding Diameter (µm)	130.0±2.0	130.0±2.0	130.0±2.0	247.0±3.0	247.0±3.0	395.0±5.0	400.0±5.0
Core Diameter (µm)	10.0±1.0	11.0±1.0	20.0±1.0	25.0±1.5	30.0±2.0	20.0±1.5	20.0±1.5
Coating Diameter (µm)	245.0±10.0	245.0±10.0	245.0±10.0	395.0±15.0	395.0±15.0	550.0±15.0	550.0±15.0
Core/Clad Concentricity Error (µm)	≤0.7	≤0.7	≤0.7	≤2.0	≤2.0	≤2.0	≤2.0
Cladding Non-circularity (%)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Proof Test (kpsi)	≥100	≥100	≥100	≥100	≥100	≥100	≥100



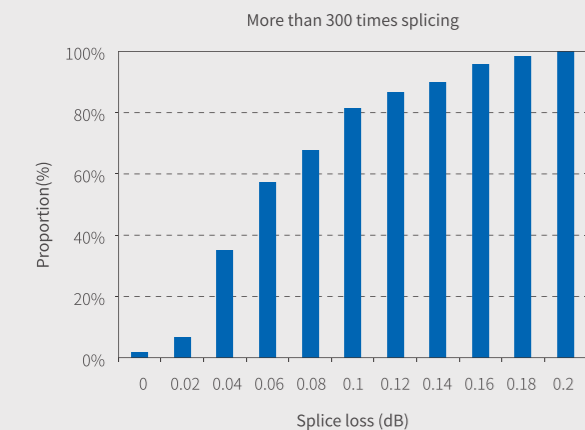
Erbium Doped Fibre (EDF)

YOFC offers full series of Erbium doped fibres, which could meet the most stringent amplifier requirements both for C-Band and L-Band. Through 1480nm or 980nm pump technology, YOFC erbium doped fibre can realize 35nm amplification bandwidth, and maintain flatness gain to get ideal power conversion efficiency. YOFC erbium doped fibres are specially designed for high performance, low noise requirements amplifier, for example: optical preamplifier, booster and in-line amplifier in the WDM communication system. YOFC Erbium doped fibre has been optimized through co-doping with Erbium and Aluminum technology to ensure the high quality performance.

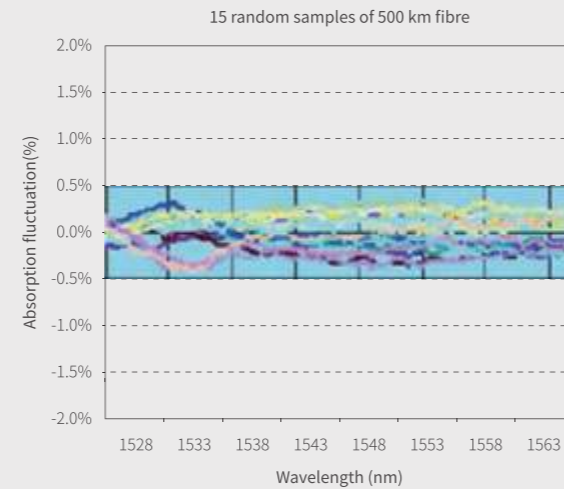
Characteristics

- Excellent spectral uniformity
- High power conversion efficiency and low noise design
- Industry leading fibre geometry
- Low PMD
- DLPC9 dual-layer coating to ensure excellent mechanical properties
- Good performance of anti-hydrogen loss
- Lower splice loss

Excellent Splicing Performance



Absorption Reproducibility (+/- 0.3% in the C Band)



Application

For the Telecommunication Industry

- DWDM amplifiers
- CATV amplifiers
- 980nm or 1480nm pumps
- Terrestrial and Submarine telecommunications
- Defense/Military/Aerospace

Products

Fibre Type	EDF3/6/125-23	EDF7/6/125-23	EDF13/6/125-23	EDF22/6/125-23	EDF36/6/125-23
Part No.	ED1011-A	ED1012-A	ED1013-A	ED1015-A	ED1016-A
Absorption Peak Coefficient at 1532 nm (Max. [1530 – 1534 nm])					
Specified Value	2~4 dB/m	4~9 dB/m	10~15 dB/m	19~25 dB/m	32~40 dB/m
Typical	3 dB/m	7 dB/m	13 dB/m	22 dB/m	36 dB/m
Application	C Band	C Band	C & L Band	C & L Band	C & L Band

Specifications

Fibre Type	EDF3/6/125-23	EDF7/6/125-23	EDF13/6/125-23	EDF22/6/125-23	EDF36/6/125-23
Part No.	ED1011-A	ED1012-A	ED1013-A	ED1015-A	ED1016-A
Optical Properties					
*Absorption Peak 1532nm (Max.[1530~1534 nm]) Specified Value (dB/m)	2 ~ 4	4 ~ 9	10 ~ 15	19 ~ 25	32 - 40
*Absorption Peak 1532nm (Max.[1530~1534 nm]) Typical (dB/m)	3	7	13	22	36
Absorption Reproducibility (%) (250m)	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5
Background Attenuation(Min.[1100~1300 nm]) (dB/km)	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Background Attenuation(Min.[1100~1300 nm]) Typical (dB/km)	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
Macro-bend Induced Attenuation (100 m, 15 mm diameter, λ< 1620 nm) (dB)	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1
*Cutoff Wavelength (nm)	≤ 1300	≤ 1300	≤ 1300	≤ 1300	≤ 1300
*MFD 1550 nm (μm)	5.4 ± 0.7	5.4 ± 0.7	5.4 ± 0.7	5.4 ± 0.7	5.4 ± 0.7
NA	0.23 ± 0.02	0.23 ± 0.02	0.23 ± 0.02	0.23 ± 0.02	0.23 ± 0.02
Splicing Loss (with G.652 at 1300 & 1700 nm) (dB)	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2
PMD (100 m) (ps)	≤ 0.25	≤ 0.25	≤ 0.25	≤ 0.25	≤ 0.25
Geometrical Properties					
Cladding Diameter (μm)	125.0±1.0	125.0±1.0	125.0±1.0	125.0±1.0	125.0±1.0
Coating Diameter (μm)	250.0±7.0	250.0±7.0	250.0±7.0	250.0±7.0	250.0±7.0
Core/Cladding Concentricity (μm)	≤ 0.6	≤ 0.6	≤ 0.6	≤ 0.6	≤ 0.6
Cladding/Coating Concentricity (μm)	≤ 12.5	≤ 12.5	≤ 12.5	≤ 12.5	≤ 12.5
Mechanical Properties					
Proof Test (kpsi)	100	100	100	100	100
Delivery Length (± 5 m)(m)	250, 500, 1000	250, 500, 1000	250, 500, 1000	250, 500, 1000	250, 500, 1000
Environmental Properties					
Storage Temperature (°C)	-40~+75	-40~+75	-40~+75	-40~+75	-40~+75
Operating Temperature Range (°C)	-5~ +75	-5~ +75	-5~ +75	-5~ +75	-5~ +75
Storage Humidity (Non Condensing)(%)	5 ~ 95	5 ~ 95	5 ~ 95	5 ~ 95	5 ~ 95
Operating Humidity (Non Condensing)(%)	5 ~ 95	5 ~ 95	5 ~ 95	5 ~ 95	5 ~ 95

- Other values available on request
- Cutoff wavelength below 980 nm on request
- Larger MFD about ED1012-A on request

Iso Gain™ Series EDF

Fibrecore company IsoGain™ series EDF includes different gain performance and cutoff wavelengths in response to different types of optical fibre amplifiers(EDFA).

Fibrecore supplies low absorption coefficient fibre for C band amplifier and high absorption coefficient fibre for L band amplifier.

High cutoff wavelength(HC)fibre has large core diameter, which helps to reduce the nonlinear effect and improve the efficiency of the pump with higher power.

Fibrecore company IsoGain™ series EDF's core part is carefully designed and has a substantially flat wavelength gain curve, which can be matched with other leading Erbium-doped fibres.

Supported by Fibrecore's GainMaster™ simulation software.

Advantages

- High efficiency core component
- Optimized high cutoff wavelength used for high efficiency pump EDFA
- L Band amplifiers Small/Micro C Band EDFA High absorption fibre
- Provide a wide range of absorption values for EDFA design optimization

Relative Products

- I-4(980/125) used for high efficiency C band EDFA
- I-4(980/125)HC used for high efficiency, high power C band EDFA
- I-4(980/125)HP used for high efficiency, high power C band EDFA
- I-6(980/125) used for high efficiency C band EDFA high absorption EDF
- I-12(980/125) used for short segment C/L band EDFA with medium absorption fibre
- I-12(980/125)HC used for higher power, short segment C/L band EDFA with high cutoff wavelength medium absorption fibre
- I-15(980/125)HC used for higher power, short segment C/L band EDFA with high cutoff wavelength/high absorption fibre
- I-25(980/125) used for short segment L band EDFA high absorption fibre
- I-25H(1480/80) used for small/micro EDFA with a small diameter and 80µm cladding, high cutoff wavelength, high absorption fibre

Other Relative Products

- MetroGain™ series EDF
- Double-cladding Er-doped/ Yb-doped Fibre (CP1500Y)
- GainMaster™ simulation tool

Technical Parameters

High Efficiency C Band EDF

Fibre Type	I-4(980/125)	I-4(980/125)HC	I-4(980/125)HP	I-6(980/125)
Part No.	ED1018-A	ED1018-B	ED1018-C	ED1018-D
Cut-off Wavelength (nm)	870~970	1000~1320	1100~1320	870~970
NA	0.22~0.24	0.22~0.24	0.19~0.22	0.22~0.24
MFD@1550nm(µm)	5.4~6.6	5.2~5.8	5.7~6.6	5.5~6.3
Absorption Peak@1531nm Specified Value(dB/m)	5.0~6.7	7.7~9.4	7.7~9.4	7.2~8.4
Proof Test (kpsi)	100	100	100	100
Attenuation@1200nm (dB/km)	≤10	≤10	≤10	≤10
Polarization Mode Dispersion(ps/m)	≤0.005	≤0.005	≤0.005	≤0.005
Cladding Diameter (µm)	125±1	125±1	125±1	125±1
Core Concentricity (µm)	≤0.3	≤0.3	≤0.3	≤0.3
Coating Diameter (µm)	245±15	245±15	245±15	245±15
Coating Type	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate
Operating Temperature (°C)	-55 ~ +85	-55 ~ +85	-55 ~ +85	-55 ~ +85

L Band & C Band EDF

Fibre Type	I-12(980/125)	I-12(980/125)HC	I-15(980/125)HC	I-25(980/125)
Part No.	ED1019-A	ED1019-B	ED1019-C	ED1019-D
Cut-off Wavelength (nm)	900~970	1200~1320	1200~1320	900~970
NA	0.21~0.23	0.23~0.26	0.23~0.26	0.23~0.26
MFD@1550nm(µm)	5.7~6.6	5.0~5.5	4.8~5.4	5.2~6.3
Absorption Peak@1531nm Specified Value(dB/m)	14~21	17~21	27~33	35~45
Proof Test (kpsi)	100	100	100	100
Attenuation@1200nm (dB/km)	≤10	≤10	≤10	≤10
Polarization Mode Dispersion(ps/m)	≤0.005	≤0.005	≤0.005	≤0.005
Cladding Diameter (µm)	125±1	125±1	125±1	125±1
Core Concentricity (µm)	≤0.3	≤0.3	≤0.3	≤0.3
Coating Diameter (µm)	245±15	245±15	245±15	245±15
Coating Type	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate	Dual-layer UV-Acrylate
Operating Temperature (°C)	-55 ~ +85	-55 ~ +85	-55 ~ +85	-55 ~ +85

Small Diameter EDF for Small/Micro EDFA

Fibre Type	I-25H(1480/80)
Part No.	ED1020-A
Cut-off Wavelength (nm)	900~1025
NA	≥0.30
MFD@1550nm(µm)	3.8~4.7
Absorption Peak@1531nm Specified Value(dB/m)	23~27
Proof Test (kpsi)	100
Attenuation@1200nm (dB/km)	≤30
Polarization Mode Dispersion(ps/m)	≤0.005
Cladding Diameter (µm)	80±1
Core Concentricity (µm)	≤0.5
Coating Diameter (µm)	160±10
Coating Type	Dual-layer UV-Acrylate
Operating Temperature (°C)	-55 ~ +85

Distributed Temperature System-multimode Fibre (DTS-MMF)

The distributed temperature system-multimode fibre (DTS-MMF), adopts advanced plasma chemical vapor deposition (PCVD) process which can insure precise waveguide design and smooth graded index profile. Because of the above process advantages and optimized preform parameter, the fibre has excellent optical and geometric properties at long wavelength (1300nm, 1550nm). Additionally, the fibre can resist high temperature by using special coating material.

Characteristics

- Low attenuation at DTS operating wavelength 1450nm, 1550nm and 1650 nm
- High bandwidth at C-band (especially at 1550nm)
- High temperature resistance
- Low splicing loss
- Excellent bending insensitivity

Application

- Distributed Temperature System

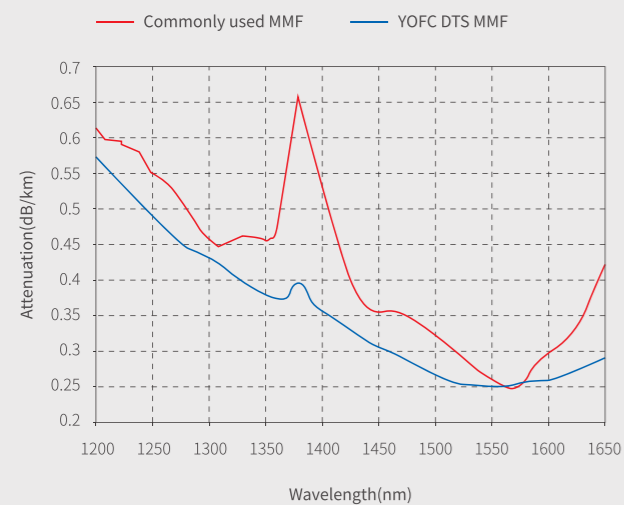
Compared with communication multimode fibre, the advantages of DTS-MMF are as follows:

1.Low attenuation at DTS operating wavelength

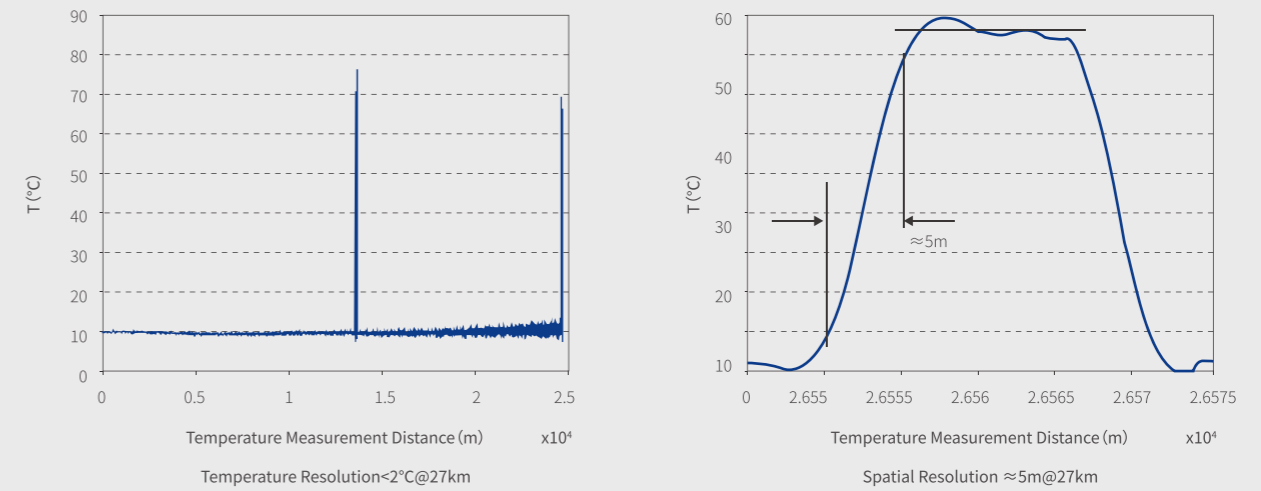
- The lower attenuation of the DTS-MMF at the wavelength of 1450nm, 1550nm and 1650nm can increase the distance of the distributed temperature measurement system.

2.High bandwidth at 1550nm

- According to IEC 60793-1-41-2010 (bandwidth), the actual measured bandwidth at 1550nm of DTS-MMF can exceed more than 1000MHz·km, which effectively improves the spatial resolution of the long-distance distributed temperature measurement system.



DTS Host Measured Result

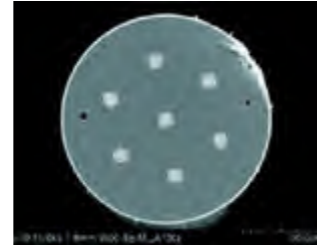


Specifications

Fibre Type	GI62.5/125-27/250DTS	GI50/125-20/250DTS
Part No.	GI2015-B	GI2012-B
Optical Properties		
Numerical Aperture (NA)	0.275±0.02	0.195±0.02
Loss	@1300 (dB/km)	≤0.6
	@1450 nm (dB/km)	≤0.5
	@1550 nm (dB/km)	≤0.4
	@1650 nm (dB/km)	≤0.5
Splicing Loss (dB)	≤0.1	≤0.1
Bandwidth	@1300 nm (MHz·km)	≥200
	@1550 nm (MHz·km)	≥1000
Geometrical Properties		
Fibre Core Radium (μm)	62.5±1.5	50±1.5
Cladding Diameter(μm)	125±0.7	125±0.7
Fibre Diameter (μm)	245±7	245±7
Concentricity of Core Cladding (μm)	≤1.5	≤1.5
Non-circularity of Core (%)	≤5.0	≤5.0
Non-circularity of Cladding (%)	≤0.6	≤0.6
Macro Bending Attached Attenuation		
Macro bend Loss (dB)		
Two Circles Radius: 15mm	1300 nm	≤0.2
	1550 nm	≤0.2
Two Circles Radius: 7.5mm	1300 nm	≤0.3
	1550 nm	≤0.3
Mechanical Properties		
Proof Test Level (kpsi)	≥100	≥100
Environmental Properties		
Operating Temperature Range (°C)	-40~+85/-40~+150(Optional)	-40~+85/-40~+150(Optional)

Multi Core Fibre(MCF)

Multi Core fibre(MCF) is a new kind fibre with several separate fibre cores co-existed in the same cladding. YOFC MCF can achieve low inter-crosstalk in long SDM optical transmission by adopting the sever-core structure and F-doped caldding, which has a typical promising future in optical transmission field. Based on the concept of space division multiplexing (SDM), multi-core fibre can realize transmitting several light signals through different channels and is expected as a breakthrough technology against capacity crunch of optical transmission system over a single-mode fibre. With the development of SDM (Space Division Multiplexing) and multi-core fibre sensor technology, multi-core fibre would be a vital branch of fibre development. The level of crosstalk and fibre coating of MCF can also be customization to fulfill your use in transmission, sensor, industry, medical equipment fields and so on.



Characteristics

- Single fibre with spatial superchannels
- Ultra-low cross talk between cores
- Excellent fibre geometric consistency
- Low and consistent attenuation char

Application

- Extremely large capacity transmission system
- Large-Capacity Multi-Task Access
- Distributed fibre sensors
- Medical Equipments

Specifications

Fibre Type	MCF-7-42/150/250	
Type Description	Low Crosstalk Seven Core MCF	
Optical Properties	Value	Typical
Cross Talk (Adjacent Core) (dB/ km)	<-45	-50
Attenuation@ 1310nm (dB/km)	<0.45	0.4
Attenuation @ 1550nm (dB/km)	<0.30	0.25
Zero Dispersion Wavelength (nm)	1290~1320	1308
Dispersion@ 1550nm (ps/nm · km)	17±1.0	17.1
PMD ps/sqrt (km)	<2	<1.5
Cable Cut off Wavelength λ _{cc} (nm)	<1300	1250
Mode Field Diameter@1310nm (μm)	8.5±0.5	8.4
Mode Field Diameter @1550nm (μm)	9.5±0.5	9.5
Geometrical Properties		
Core Diameter (μm)	8.0±0.5	7.9
Core-to-core (adjacent) Distance (μm)	41.5±1.5	
Coating Description		
Coating Type	UV-Acylate	High temperature coating is available
Operating Temperature Range(°C)	-40~+70	
Mechanical Properties		
Short Term Bend Radius(mm)	≥7.5	
Long Term Bend Radius (mm)	≥15	
Proof Test Level (kpsi)	≥50	

Multi-core Fibre Fan-in & Fan-out Module

Multi-core fibre fan-in and fan-out module is a module to realize the high coupling efficiency between the multi-core fibre and several single-mode fibre, to realize the channel space division multiplexing and demultiplexing function in the application. The optical fibre coupling technology is used to realize the optical power coupling between multi-core fibre and a few single mode fibre with low insertion loss, low core crosstalk and high return loss. YOFC multi-core fibre fan-in and fan-out module adopts seven channel structure, with the corresponding parameters of seven core optical fibre communication and sensor can be used to build a complete system. It has the broad application prospect.



Characteristics

- Encapsulated in box
- Low and consistent insertion loss
- Ultra low crosstalk
- FC/PC, FC/APC or bare fibre

Specifications

Module Type	FAN-7-42	
Type Description	7-cores fibre fan-in & fan-out module	
Optical Properties	Value	Typical
Average Insertion Loss (dB)	<1.5	1.0
Max.Insertion Loss (dB)	<2.0	1.5
Return Loss (dB)	>45	50
Crosstalk Index-Adjacent Core (dB)	<-50	-55
Geometrical Properties		
Multi-core Pigtail Length (m)	>1.0	1.5
Single-mode Pigtail Length (Bare Fibre) (m)	>1.0	2.0
Single-mode Pigtail Length (Patch-cord) (m)	>0.5	1.0
Encapsulation Box Description		
Encapsulation Material	ABS Plastic	
Box Size (mm)	100×80×10	
Operating Temperature(°C)	-40~+70	

Few-mode Fibre (FMF)

YOFC FMFs take advantages of PCVD process which is able to manufacture complex index-profile accurately and optical waveguide structure flexibility to get various types of core layer structure, such like Step-Index, Graded-Index etc.

Characteristics

- Strictly controlled optical and geometrical parameters
- Customized waveguide is available

Application

- Mode division multiplexing(MDM)
- Communication
- Sensing
- Test

Specifications

Geometrical Parameter	Specifications
Cladding Diameter(μm)	124.5 \pm 1.0
Cladding Non-circularity(%)	\leq 0.7
Core/Clad Concentricity Error(μm)	\leq 1.0
Coating Diameter(μm)	242 \pm 10
Coat/Clad Concentricity Error(μm)	\leq 12
Curl(radius)(m)	\geq 4
Delivery Length(km/reel)	2 ~ 25
Mechanical Properties	
Proof Test Level (kpsi)	\geq 100
	\geq 1.0
	\geq 9
n_d	\geq 20

• Customized FMFs are available.

Two Mode Fibre (Step-Index)

		Typical value	range	Unit
Core Diameter			14 \pm 0.5	μm
Core Refractive Index@1550nm			1.4485	---
Cladding Diameter			125 \pm 0.7	μm
Cladding Non-circularity			<0.7	%
Coating Diameter			245 \pm 5	μm
Dispersion@1550nm	LP01	21	<22	ps/(nm·km)
	LP11	19.5	<21	ps/(nm·km)
Dispersion Slope@1550nm	LP01	0.08	<0.1	ps/(nm ² ·km)
	LP11	0.07	<0.1	ps/(nm ² ·km)
Effective Area@1550nm	LP01	130	>100	μm^2
	LP11	220	>200	μm^2
Attenuation Coefficient@1550nm	LP01	0.19	<0.21	dB/km
	LP11	0.19	<0.21	dB/km
Differential Group Delay	LP11-LP01	1.9	<2.1	ps/m

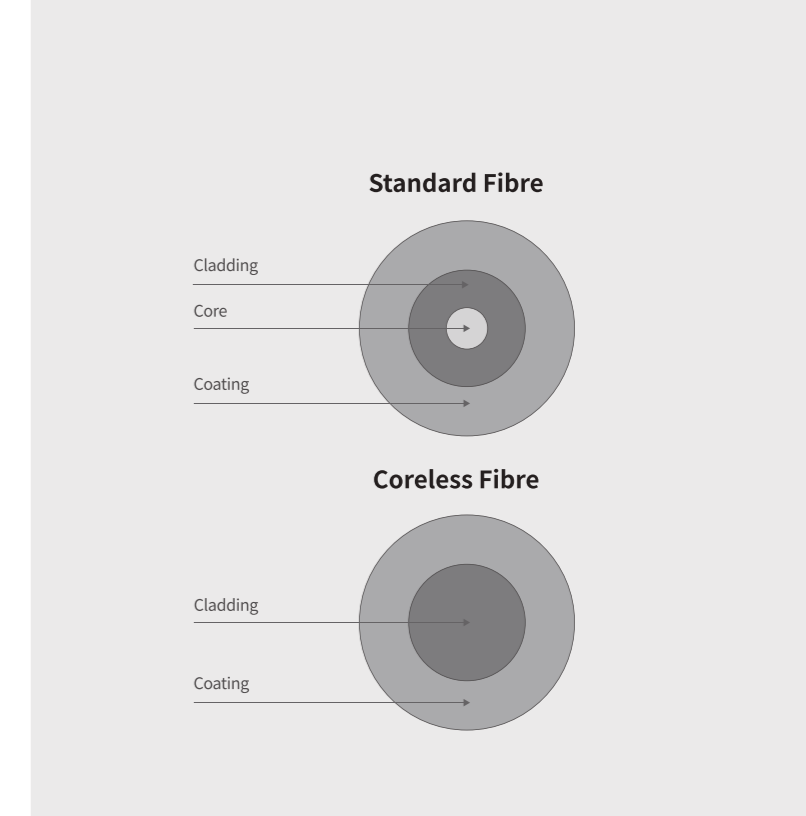
Four Mode Fibre (Step-Index)

		Typical Value	Scope of value	Unit
Diameter			19 \pm 1	μm
Core Refractive Index@1550nm			1.4499	---
Cladding Diameter			125 \pm 0.7	μm
Cladding Non-circularity			<0.7	%
Coating Diameter			245 \pm 5	μm
Dispersion@1550nm	LP01	22	<23	ps/(nm·km)
	LP11	23	<24	ps/(nm·km)
	LP21	21	<22	ps/(nm·km)
	LP02	11	<12	ps/(nm·km)
Dispersion Slope@1550nm	LP01	0.09	<0.10	ps/(nm ² ·km)
	LP11	0.09	<0.10	ps/(nm ² ·km)
	LP21	0.07	<0.09	ps/(nm ² ·km)
	LP02	0.01	<0.02	ps/(nm ² ·km)
Effective Area@1550nm	LP01	190	>170	μm^2
	LP11	270	>240	μm^2
	LP21	310	>290	μm^2
Attenuation Coefficient@1550nm	LP02	200	>180	μm^2
	LP01	0.20	<0.21	dB/km
	LP11	0.20	<0.21	dB/km
Differential Group Delay	LP21	0.20	<0.21	dB/km
	LP02	0.20	<0.21	dB/km
	LP11-LP01	-1.2	<3	ps/m
	LP21-LP01	1.3	<3	ps/m
	LP02-LP01	0.2	<3	ps/m



Coreless Fibre (CLF)

YOFC coreless fibre, which is coreless, only includes a solid silica cladding surrounded by a transparent coating material, acrylate. Coreless fibres with $\Phi 125\mu\text{m}$ or $\Phi 250\mu\text{m}$ silica cladding are our standard products. Besides, customized fibres with special requirements are available.



Characteristics

- High geometrical precision
- Using F300 glass material as cladding material
- Attributed to adopting the commonly used UV curing dual-layer acrylate as coating material, the coating is easy to be stripped off
- Excellent mechanical properties

Application

- Spliced with unused branches of fibre components to minimize back reflections
- Used as fibre end caps to prevent laser-induced fibre damage

Specifications

Fibre Type	CL 0-125-0-250	CL 0-250-0-500
Part No.	CL 1010-A	CL 1010-B
Cladding Diameter(μm)	125 \pm 1	250 \pm 5
Reflection Index@1550nm	1.444	1.444
Coating Diameter(μm)	245 \pm 10	500 \pm 15
Proof Test Level(kpsi)	100	100

High Nonlinear Optical Fibre (HNLFF)

The nonlinear effect of optical fibre, such as stimulated Raman scattering (SRS), stimulated Brillouin scattering and optical Kerr effect, has many applications in the field of communications and optical signal processing. In the Kerr effect, refractive index of optical dielectric materials changes with luminous power, which will lead to a series of secondary effects, such as the self-phase modulation (SPM), cross phase modulation (XPM), four wave mixing (FWM), and the unsteady modulation. Optical Kerr effect can be used in optical parametric amplification, frequency conversion, phase coupling, pulse compression and generation, optical soliton transmission, etc.

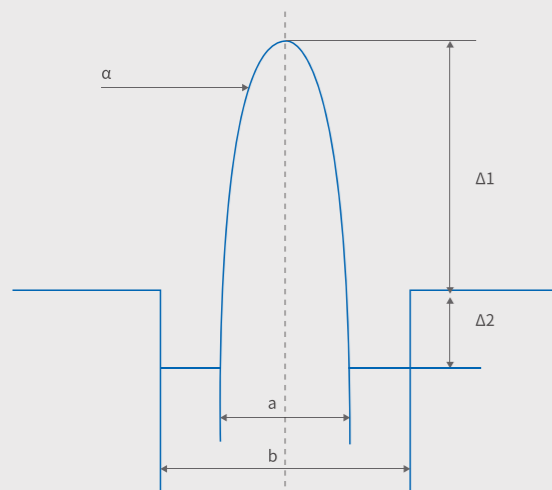
The design of the high nonlinear optical fibre on several aspects need to be taken into account. Firstly, optical fibre should have high nonlinear coefficient to obtain effective nonlinear interaction. Secondly, optical fibre must have a lower loss in order to increase the effective length.

Moreover, the dispersion of optical fibre should match various applications. Finally, the nonlinear optical fibre must have low polarization mode dispersion. For silica-based high nonlinear optical fibre, the design of the refractive index profile plays an important role to meet the above requirement. Small core effective area, low dispersion slope and cutoff wavelength which is much smaller than the working wavelength must be implemented at the same time in the design of high nonlinear optical fibre.

YOFC HNLFFs not only have high nonlinear coefficient and very low dispersion slope at the same time. YOFC uses W type to design profile which is flexible, and the cladding in low refractive index is introduced around the core step refractive index.

Characteristics

- High nonlinear coefficient
- Zero-dispersion wavelength is adjustable in the s, c, l wavelength
- Low loss and low dispersion slope
- Easy to be spliced to single-mode fibre with low additional loss

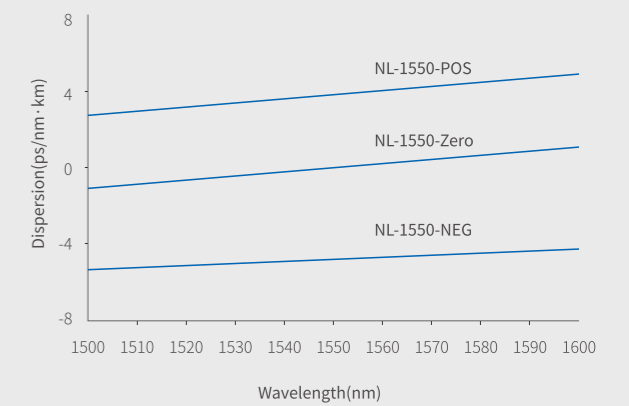


The refractive index profile sketch

Application

- Parametric amplification
- Wavelength conversion
- Pulse compression
- Supercontinuum source
- Light regenerator
- Discrete type (or lumped type) Raman amplifier

Three types of HNLFF typical dispersion test curves



Specifications

Fibre Type	NL 1550-POS	NL 1550-Zero	NL 1550-NEG
Part No.	NL1016-A	NL1016-B	NL1016-C
Optical Properties			
Operating Window	C wavelength	C wavelength	C wavelength
Dispersion Slope@1550nm (ps/nm ² ·km)	<0.035	<0.030	<0.030
Dispersion@1550nm (ps/nm·km)	>1	0.0±1	<-1
Nonlinear Coefficient@1550nm (W ⁻¹ km ⁻¹)	≥10	≥10	≥10
Attenuation Coefficient@1550nm (dB/km)	≤1.5	≤1.5	≤1.5
Cut-off Wavelength(nm)	<1480	<1480	<1480
Numerical Aperture(typical value)	0.35	0.35	0.35
Geometry Properties			
Cladding Diameter (μm)	125±7	125±7	125±7
Cladding Non-circularity (%)	≤1	≤1	≤1
Core/Cladding Concentricity (μm)	≤0.5	≤0.5	≤0.5
Coating Diameter (μm)	245±10	245±10	245±10

• Optical fibre welding is available.

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Photonic Crystal Fibre (PCF)



Photonic Crystal Fibre, also known as microstructure fibre or holey fibre, normally consists of a regular pattern of air holes or doped materials inside pure silica background along the transverse direction. According to the mechanism of light guided in fibre, PCF is classified as TIR and PBG. Stacking and drawing technique are used for the preparation of our PCFs to realize special characteristics such as endless single mode, extremely large mode area, wave-guide in hollow core, high nonlinear effects and birefringence etc.

YOFC has developed a series of PCFs for all kinds of applications based on our synthetic material, PCVD process, stackingdrawing technique and theoretical simulation.

Characteristics

YOFC PCF has following characteristics

- Low loss
- Long delivery length
- Fine microstructure, excellent characteristics performance of specific fibre type
- Single material composition, namely high purity SiO₂ (except all solid photonic band gap fibre)

Application

- Supercontinuum sources
- Optical fibre laser and amplifier
- High power transmission
- Optical fibre grating and sensors
- All optical signal processing

Standard Products

- Endless single-mode PCF
- Polarization maintaining PCF
- High nonlinearity PCF
- All solid PBG
- Dual core fibre

Specifications

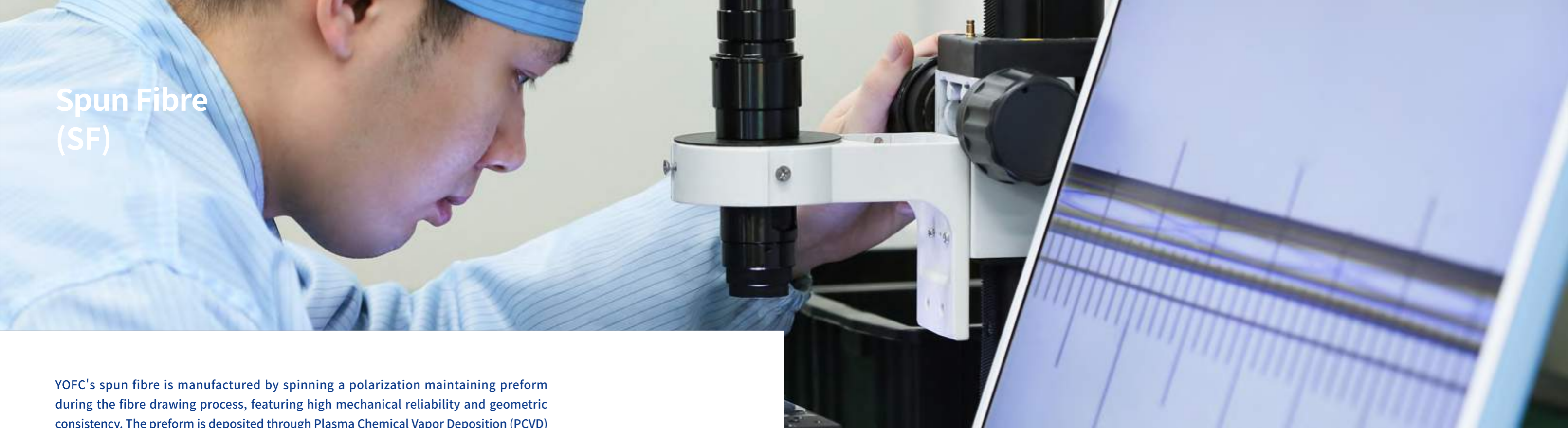
Main Classes	Subclasses	Attributes	Fibre Structure	Application Examples
Total internal reflection (TIR)	Endlessly single-mode fibre	Pure silica core; Attenuation can be as low as 1 dB/km		Wide single-mode transmission Energy delivery
	High Nonlinearity Fibre	950-1100nm ZDW		Supercontinuum generation by 1µm pulse laser or CW laser
		700-900nm ZDW		Supercontinuum generation by 0.8µm fs pulse laser Nonlinearity optics Nonlinearity fibre laser
	Multi-core fibre	Dual core		Senor, Directionl coupling components
	PM fibre	Excellent radiation resistance, temperature insensitive, low macro-bending induced attenuation		Gyro; interferometer
Photonic bandgap (PBG)	All-solid photonic Bandgap fibre	Tailored bandgap spectrum		Filtering Special rare earth doped fibre Special dispersion and operating wavelength fibre

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Spun Fibre (SF)



YOFC's spun fibre is manufactured by spinning a polarization maintaining preform during the fibre drawing process, featuring high mechanical reliability and geometric consistency. The preform is deposited through Plasma Chemical Vapor Deposition (PCVD) process, which enables a precise refractive index profiles and dimensional tolerances of the fibre. Excellent environmental immunity and circular polarization-maintenance performance are obtained by design to meet the requirement of applications, such as fibre optic current transformer (FOCT).

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

Characteristics

- Excellent and stable optical performance
- Optimized for current sensing
- High environmental stability and reliability
- Low attenuation

Application

- Fibre optic current transformer
- DC and AC current sensors
- Polarimetric sensors

Specifications

Fibre Type	SH 1310_125-5/250
Part No.	SH 1016-A
Optical Properties	
Operating Wavelength (nm)	1310
Cut-off Wavelength (nm)	1020~1260
Mode Field Diameter (μm)	7±1.0 @1310nm
Attenuation (dB/km)	≤2.0 @1310nm
Beat Length (mm)	9~14 @1310nm
Geometrical Properties	
Spin Pitch (mm)	5 ±0.2
Cladding Diameter (μm)	125.0 ± 1.0
Coating Diameter (μm)	245± 7
Cladding Non-circularity (%)	≤1.0
Core-Cladding Concentricity (μm)	≤1.0
Coating Type	Dual-layer/UV-Acrylate
Mechanical properties	
Operating Temperature (°C)	-45~+85
Proof Test (kpsi)	50 or 100

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