



High Temperature Fibre (HTF)

Data transmission, high power laser delivery and sensors require special reliability at demanding environment conditions. A special challenge is the 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

Applications

- Mining industry
- Aerospace
- Oil/gas industry
- Medical

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

2. Optimized Polyimide Coated High Temperature Fibre

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

- Coating diameter (125µm cladding fibres): 155±5µm
- Coating diameter (≤ 220µm 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)	≤ 1280	≤ 1280
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 (μm)	≤ 0.8	≤ 0.8
Coating/ Cladding Concentricity (μm)	≤ 12.0	-
Mechanical Properties		
Proof Test (kpsi)	100	100
Operating Temperature (°C)	-65 to +150 Short Term +200	-65 to +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)	HT 50/125-20/155(300)	HT 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)	50.0 ± 2.5	62.5 ± 2.5	50.0 ± 3.0	62.5 ± 3.0
Cladding Diameter (μm)	125.0 ± 1.0	125.0 ± 1.0	125.0 ± 2.0	125.0 ± 2.0
Coating Diameter (μm)	245.0 ± 10.0	245.0 ± 10.0	155.0 ± 5.0	155.0 ± 5.0
Cladding Non-circularity (%)	≤ 1	≤ 1	≤ 2	≤ 2
Core/Cladding Concentricity (μm)	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Cladding/Coating Concentricity (μm)	≤ 12	≤ 12	-	-
Mechanical Properties				
Proof Test (kpsi)	100	100	100	100
Operating Temperature (°C)	-65 to +150 Short Term +200		-65 to +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.