



Bending Insensitive Single-mode Fibre (BI-SMF)

YOFC bending insensitive single-mode fibre are particularly developed for applications with very small bending radius. The fibre has excellent bending resistance by the special design of waveguide structure, and the minimum bending radius can reach 5mm. By strictly controlling of preform raw materials and drawing process, the fibre has excellent mechanical properties and can meet high proof test level and long spool length requirements.

In this fibre series, BI1011-A is suitable for optical fibre guidance, and BI1015-A and BI1015-B are suitable for fibre hydrophone. BI1015-B is a small-diameter fibre with a cladding diameter of 80 μ m, serving the application of compact components.

Characteristics

- Low macro-bending loss including L-band
- Low micro-bending induced loss
- Superior geometry
- Excellent mechanical properties, proof test level can reach 200 kpsi
- The cladding diameter is 80 μ m, realizing the miniaturization of optical fibre

Applications

- Small-sized optical component
- Optical-fibre guidance
- Hydrophone

Specifications

Fibre Type	BI 6/125-18/250 ^{*①}	BI 6/100-18/200	BI 7/125-18/250	BI 7/80-18/170 ^{*②}	BI 7/80-19/170	BI 8/125-14/250
Part No.	BI1011-A	BI1011-C	BI1015-A	BI1015-B	BI1015-F	BI1016-A
Optical Properties						
Fibre Cutoff Wavelength (nm)	≤1260	≤1260	1350 - 1500	1350 - 1500	1350 - 1500	≤1260
Zero Dispersion Wavelength (nm)	≤1420	≤1420	-	-	-	1300 - 1324
Mode-field Diameter@1310nm (μm)	6.5±0.4	6.5±0.4	-	-	-	8.6±0.4
Mode-field Diameter@1550nm (μm)	7.4±0.5	7.4±0.5	7.5±0.4	7.0±0.4	6.6±0.4	9.6±0.5
Attenuation@1310 (dB/km)	≤0.39	≤0.42	-	-	-	≤0.35
Attenuation@1383 (dB/km)	-	-	-	-	-	≤0.35
Attenuation@1490 (dB/km)	≤0.26	≤0.32	-	-	-	-
Attenuation@1550 (dB/km)	≤0.24	≤0.30	≤0.26	≤0.28	≤0.28	≤0.21
Attenuation@1625 (dB/km)	≤0.25	≤0.31	≤0.27	≤0.29	≤0.29	≤0.23
Geometrical Properties						
Cladding Diameter (μm)	124.7±0.5	100.0±1.0	124.7±0.5	80.0±1.0	80.0±1.0	124.4±0.4
Coating Diameter (μm)	240.0±5.0	198.0±5.0	240.0±5.0	170.0±5.0	170.0±5.0	240.0±5.0
Cladding Non-circularity (%)	≤1.0	≤1.0	≤0.7	≤0.7	≤0.7	≤0.7
Core/Cladding Concentricity (μm)	≤0.6	≤0.6	≤0.6	≤0.6	≤0.6	≤0.6
Macro-bending Induced Loss						
φ10mm-1turn(dB)	1550nm	-	≤0.05	-	-	≤0.15
	1625nm	-	≤0.15	-	-	≤0.45
φ15mm-1turn(dB)	1550nm	≤0.05	-	-	-	≤0.05
	1625nm	≤0.10	-	-	-	≤0.25
φ20mm-1turn(dB)	1550nm	≤0.02	-	-	-	≤0.03
	1625nm	≤0.05	-	-	-	≤0.10
φ10mm-25turns(dB)	1550nm	-	-	≤0.02	≤0.02	≤0.02
φ30mm-10turns(dB)	1550nm	≤0.01	-	-	-	-
	1625nm	≤0.02	-	-	-	-
Mechanical Properties						
Proof Test Level (kpsi)	150	150	150	200	200	100
Environmental Properties						
Operating Temperature (°C)	-60 to +85	-60 to +85	-60 to +85	-60 to +85	-60 to +85	-60 to +85

*①200μm outer diameter fibre is available

*②135μm outer diameter fibre is available

*③Reducing-cladding diameter fibre such as 60μm, 100μm, and other non-standard size fibre are available

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