

# 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
<b>Optical Properties</b>						
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 $\lambda_{cc}$ (nm)		≤1260	≤1260	1350 ~ 1500( $\lambda_c$ )	1350 ~ 1500( $\lambda_c$ )	≤1260
Mode Field Diameter ( $\mu\text{m}$ )	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
<b>Geometrical Properties</b>						
Cladding Diameter ( $\mu\text{m}$ )		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 ( $\mu\text{m}$ )		245.0±7.0	245.0±7.0	245.0±7.0	170.0±5.0	245.0±7.0
Core Concentricity Error ( $\mu\text{m}$ )		≤0.6	≤0.6	≤0.6	≤0.6	≤0.6
<b>Macro-bending Induced Loss</b>						
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			
<b>Environmental Properties</b>		<b>-60°C~85°C</b>		<b>1310 nm, 1550 nm and 1625 nm</b>		
Temperature Induced Loss (dB/km)	-60°C~85°C	≤0.05	≤0.05	≤0.05	≤0.05	≤0.05
<b>Mechanical Properties</b>						
Proof Test Level (kpsi)	offline	150	100	200	200	150

\* Can offer 135 $\mu\text{m}$  outer diameter