

YOFC High Capacity Low Slope Dispersion Shifted Single Mode Fiber

Description and Application

HIPOSH fiber of YOFC provides an ideal fiber solution for high bit-rate, explosive transmission capacity and long transmission distance. Several key factors affecting fiber performance: chromatic dispersion, dispersion slope, attenuation and effective area were optimized. The transmission bandwidth is extended from C&L band to S-band. At the same time, the O-band of HIPOSH fiber can be applied because the cable cut off wavelength is below to 1260 nm and dispersion is low in 1310 nm transmission window. With low attenuation, PMD value and appropriate chromatic dispersion value, HIPOSH fiber is suitable for long distance and high bit-rate, such as 10 Gb/s and 40 Gb/s transmission system. Furthermore, the flatter dispersion slope provides an easy way to compensate the chromatic dispersion and dispersion slope using commercially available dispersion compensating devices. YOFC HIPOSH fiber is designed and manufactured according to the most advanced level in the world. It's applicable in all types including ribbon cable, loose tube stranded cable, slotted core cable, unitube cable and tight-buffer cable.

Norms

YOFC HIPOSH fibre complies with or exceeds the ITU Recommendation G.655.B Optical Fibre Specification.

YOFC tightens many parameters of fibre products.

Process and Coating

YOFC fibres are manufactured using the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Because of the inherent advantages of the process, YOFC fibres show extremely refined refractive index (RI) profile control, excellent geometrical performance, low attenuation, etc .

The optical fibre coated with a double layer UV curable acrylate, type DLPC9, which gives the fibre a good protection. Designed for more stringent tight-buffer cable application, the fibre also performs perfectly in loose buffer constructions and demonstrates a high resistance to micro-bending. The coating offers an excellent stable coating strip force over a wide range of environmental conditions and the coating stripping leaves no residues on the bare glass fibre. Ribbon tests show excellent performance in 60°C watersoak tests, exceeding 100 days. The DLPC9 coated optical fibres show high and stable values for dynamic stress corrosion susceptibility parameter (n_d), which offers a greatly improved applicability to the fibre when used in harsh environments.

Characteristics

- Suitable for high bit-rate (10 Gb/s and 40 Gb/s) and long distance DWDM transmission system in S+C+L bands
- Supporting 1310 nm window transmission on the same fibre
- A low dispersion slope applicable for chromatic dispersion and dispersion slope compensation
- DLPC9 resin offering good protection and excellent strip force stability and bending property
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

Characteristics	Conditions	Specified Values	Units
Optical characteristics			
Attenuation	1310 nm	≤0.38	[dB/km]
	1550 nm	≤0.21	[dB/km]
	1625 nm	≤0.24	[dB/km]
Dispersion coefficient	1440 nm	>1.0	[ps/nm·km]
	1530~1565 nm	≥5.5 ≤10.0	[ps/nm·km]
	1565~1625 nm	≥7.5 ≤13.4	[ps/nm·km]
Zero dispersion wavelength		≤1420	[nm]
Zero dispersion slope		≤0.06	[ps/nm ² ·km]
Zero dispersion slope (typical)		0.052	[ps/nm ² ·km]
Polarization Mode Dispersion			
PMD Maximum Individual Fibre		≤0.08	[ps/√km]
PMD Design Link Value		≤0.04	[ps/√km]
Cut-off wavelength λ_{cc}		≤1260	[nm]
Mode field diameter (MFD)	1550 nm	9.0±0.5	[μm]
Backscatter characteristics			
	1550 nm		
Step (mean of bidirectional measurement)		≤0.05	[dB]
Irregularities over fibre length and point discontinuity		≤0.10	[dB]
Difference backscatter coefficient (bidirectional measurement)		≤0.05	[dB/km]
Attenuation uniformity		≤0.01	[dB/km]
Geometrical characteristics			
Cladding diameter		125.0±1.0	[μm]
Cladding non-circularity		≤1.0	[%]
Coating diameter		242±7	[μm]
Coating/cladding concentricity error		≤12.0	[μm]
Coating non-circularity		≤6.0	[%]
Core/cladding concentricity error		≤0.6	[μm]
Curl (radius)		≥4	[m]
Delivery length		≥2.1 ≤25.2	[km/reel]
Environmental characteristics			
	1550 nm		
Temperature dependence			
Induced attenuation	-60°C to +85°C	≤0.05	[dB/km]
Temperature-humidity cycling			
Induced attenuation	-10°C to +85°C, 90% R.H.	≤0.05	[dB/km]
Damp heat dependence			
Induced attenuation	85°C, 85% R.H., 30 days	≤0.05	[dB/km]
Watersoak dependence			
Induced attenuation	20°C for 30 days	≤0.05	[dB/km]
Mechanical characteristics			
Proof test	off line	≥9.0 ≥1.0 ≥100	[N] [%] [KPSI]
Bending Dependence	1550 nm, 1625 nm		
Induced Attenuation	1 turn, 32 mm diameter	≤0.50	[dB]
	100 turns, 75 mm diameter	≤0.05	[dB]
Coating strip force	typical average force	1.7	[N]
	peak force	≥1.3 ≤8.9	[N]
Dynamic stress corrosion susceptibility parameter (n_d , Typical)		≥27	

Note: the cable process can affect the PMD link property strongly. YOFC guarantees PMD link value at reasonable cable process.