High Capacity Low Slope Dispersion Shifted Single-mode Fibre

Description and Application

HIPOSH® fibre of YOFC provides an ideal fibre solution for high bit-rate, explosive transmission capacity and long transmission distance. Several key factors affecting fibre performance: chromatic dispersion, dispersion slope, attenuation and effective area have been optimized. The transmission window is extended from C&L band to S-band. At the same time, the O-band of HIPOSH® fibre 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® fibre 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® fibre 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-T Recommendation G.655 and G.656 Optical Fibre Specification.

YOFC tightens many parameters of fibre products so as to offer more conveniences to customers.

Process

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 and low attenuation, etc .

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
- Lower dispersion compensation costs for metro networks, providing lowest first channel costs
- A relative low dispersion slope applicable for chromatic dispersion and dispersion slope compensation
- Low bending induced loss at 1550 nm and at the more sensitive 1625 nm wavelength

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Characteristics	Conditions	Specified Values	Units
Optical Characteristics			
Attenuation	1310 nm	≤0.38	[dB/km]
	1383 nm	≤1.00	[dB/km]
	1460 nm	≤0.28	[dB/km]
	1550 nm	≤0.21	[dB/km]
	1625 nm	≤0.24	[dB/km]
Attenuation vs. Wavelength Max. α difference	1525 ~ 1575 nm	≤0.02	[dB/km]
Dispersion coefficient	1460 nm	≥2.0	[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]
Dispersion slope at 1550 nm		≤0.06	[ps/(nm² · km)]
Typical dispersion slope at 1550 nm		0.052	[ps/(nm² · km)]
PMD			
Maximum Individual Fibre		≤0.2	[ps/√km]
Link Design Value (M=20,Q=0.01%)		≤0.08	[ps/√km]
Typical value		0.04	[ps/√km]
Cable cutoff wavelength λ_{cc}		≤1260	[nm]
Mode field diameter (MFD)	1550 nm	8.5 ~ 9.5	[μm]
Effective group index of refraction (N_{eff})	1550 nm & 1625 nm	1.469	
Point discontinuities	1550 nm	≤0.05	[dB]
Geometrical Characteristics			
Cladding diameter		125.0 ± 0.7	[μm]
Cladding non-circularity		≤1.0	[%]
Coating diameter		245 ± 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 to 25.2	[km/reel]
Environmental Characteristics	(1550 nm & 1625 nm)		
Temperature dependence Induced attenuation at	-60℃ to +85℃	≤0.05	[dB/km]
Temperature-humidity cycling Induced attenuation at	-10℃ to +85℃, 98% RH	≤0.05	[dB/km]
Watersoak dependence Induced attenuation at	23℃, for 30 days	≤0.05	[dB/km]
Damp heat dependence Induced attenuation at	85℃ and 85% RH, for 30 days	≤0.05	[dB/km]
Dry heat aging at	85℃	≤0.05	[dB/km]
Mechanical Specification			
Proof test		≥9.0	[N]
		≥1.0	[%]
		≥100	[kpsi]
Macro-bend induced attenuation			
1 turn around a mandrel of 32 mm diameter	1550 nm	≤0.05	[dB]
100 turns around a mandrel of 50 mm diameter	1310 nm & 1550 nm	≤0.05	[dB]
100 turns around a mandrel of 60 mm diameter	1625 nm	≤0.05	[dB]
Coating strip force	typical average force	1.5	[N]
	peak force	≥1.3 ≤8.9	[N]
Dynamic stress corrosion susceptibility parameter n_d		≥20	