Large Effective Area High Capacity Positive Dispersion Shifted Single-mode Fibre

Description

YOFC LAPOSH® fibre (Large Effective Area High Capacity Positive Dispersion Shifted Single-mode Fibre) is comprehensively optimized for attenuation and dispersion performance at the 1550 nm operating wavelength. The fibre has the lowest attenuation and moderate dispersion at 1550 nm, which enables excellent performance in multi-channel Dense Wavelength Division Multiplex (DWDM) systems traditionally operating in the C-band (1530 nm -1565 nm), as well as in emerging L-band (1565 nm -1625 nm) systems.

Application

YOFC LAPOSH® fibre is the commercialized fibre that has the largest effective area in the G.655 series. The fibre is suitable for application of high output power Erbium Doped Fibre Amplifier (EDFA) and multi-channel Dense Wavelength Division Multiplex (DWDM), and can be effectively applied in the high bit-rate both single-and multi-channel, long distance digital transmission links even without dispersion compensation.

Norms

YOFC LAPOSH® fibre complies with or exceeds the ITU-T Recommendation G.655 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, low attenuation, etc.

Characteristics

- Being applicable in the high bit-rate operation across 1530-1565 nm and 1565-1625 nm band
- Large effective area ensures good economic return from the transmission system
- Low attenuation, low dispersion, low PMD and low zero dispersion slope that satisfy the demand of transmission links
- 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	1550 nm	≤0.22	[dB/km]
	1625 nm	≤0.24	[dB/km]
Attenuation vs. Wavelength	1525 ~ 1575 nm	≤0.02	[dB/km]
Max. α difference			
Dispersion coefficient	1530 ~ 1565 nm	≥2.0 ≤6.0	[ps/(nm · km)]
	1565 ~ 1625 nm	≥4.5 ≤11.2	[ps/(nm · km)]
Zero dispersion wavelength		≤1520	[nm]
Dispersion slope at 1550 nm		≤0.084	[ps/(nm² · km)]
Typical dispersion slope at 1550 nm		0.075	[ps/(nm² · km)]
PMD			
Maximum Individual Fibre		≤0.2	[ps $\sqrt{km}$]
Link Design Value (M=20,Q=0.01%)		≤0.08	[ps $\sqrt{km}$]
Typical value		0.04	[ps $\sqrt{km}$]
Cable cutoff wavelength λ_{cc}		≤1450	[nm]
Mode field diameter (MFD)	1550 nm	9.1 ~ 10.1	[μm]
Effective group index of refraction (N_{eff})	1550 nm	1.469	
	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	