

YOFC Large Effective Area High Capacity Positive Dispersion Shifted Singlemode Fibre

Description

YOFC LAPOSH[®] fibre (Large Effective Area High Capacity Positive Dispersion Shifted Singlemode 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 is satisfying the demand of new generation transmission system.

Application

YOFC LAPOSH[®] fibre is the commercialized fibre that has the largest effective area. 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. The fibre offers considerable dispersion and the high power signal is distributed over a large effective area. Through the two ways, the non-linear optical effects such as four-wave mixing, self phase modulation, modulation, instability and cross phase modulation are suppressed. Thus, the fibre can satisfy the demand of DWDM transmission system.

YOFC LAPOSH[®] fibre is applicable in all cable types including ribbon cable, loose tube stranded cable, slotted core cable, unitube cable and tight-buffer cable. YOFC optical fibres are compatible with fibres manufactured with other processes.

Norms

YOFC LAPOSH[®] fibre complies with or exceeds the ITU Recommendation G.655 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 is 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_{sc}), which offers a greatly improved applicability to the fibre when used in harsh environments.

Characteristics

- Being applicable in the high bit-rate operation across 1530~1625 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
- DLPC9 coating offering good protection and excellent strip force stability
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

Characteristics	Conditions	Specified Values	Units
Optical characteristics			
Attenuation	1550 nm	≤0.22	[dB/km]
	1625 nm	≤0.25	[dB/km]
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]
Zero dispersion slope		≤0.084	[ps/(nm ² ·km)]
Zero dispersion slope (typical)		0.078	[ps/(nm ² ·km)]
Polarization Mode Dispersion		≤0.1	[ps/√km]
Cut-off wavelength λ_{∞}		≤1480	[nm]
Mode field diameter (MFD)	1550 nm	9.6±0.5	[μm]
Group index of refraction (Typical)	1550 nm	1.469	
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	[N]
		≥1.0	[%]
		≥100	[KPSI]
Bending Dependence	1550 nm, 1625 nm		
	1 turn, 32 mm diameter	≤0.50	[dB]
Induced Attenuation	100 turns, 75 mm diameter	≤0.05	[dB]
	typical average force	1.7	[N]
Coating strip force	peak force	≥1.3 ≤8.9	[N]
	Dynamic stress corrosion susceptibility parameter (n_0 , Typical)	≥27	