

YOFC Matched Cladding Singlemode Fibre

Description

YOFC Matched Cladding Singlemode Fibre (MCSM) is optimized for performance at the 1310 nm and 1550 nm operating wavelengths. The fibre has the lowest dispersion at 1310 nm and lowest attenuation at 1550 nm, which is satisfying the use at 1310 nm or 1550 nm or both 1310 nm and 1550 nm.

Application

Due to the low attenuation, low dispersion and low Polarization Mode Dispersion (PMD), YOFC MCSM fibre can be widely used in the high bit-rate, long distance transmission links, e.g. long-haul telecommunication, trunk lines, CATV networks, feeder loops and so on.

YOFC MCSM 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 MCSM fibre complies with or exceeds the ITU Recommendation G.652 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_d), which offers a greatly improved applicability to the fibre when used in harsh environments.

Characteristics

- Low attenuation and low dispersion satisfying the operation demand at 1310 nm and 1550 nm
- Low PMD satisfying the high bit-rate and long distance 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 | 1310 nm | ≤0.36 | [dB/km] |
| | 1550 nm | ≤0.22 | [dB/km] |
| Dispersion coefficient | 1285~1340 nm | ≥-3.0 ≤3.0 | [ps/(nm·km)] |
| | 1550 nm | ≤18 | [ps/(nm·km)] |
| Zero dispersion wavelength | | ≥1302 ≤1322 | [nm] |
| Zero dispersion slope | | ≤0.091 | [ps/(nm ² ·km)] |
| Polarization Mode Dispersion | | | |
| PMD Maximum Individual Fibre | | ≤0.2 | [ps/√km] |
| PMD Link Design Value | | ≤0.08 | [ps/√km] |
| Fibre cutoff wavelength λ _c | | ≥1180 ≤1330 | [nm] |
| Cable cutoff wavelength λ _{cc} | | ≤1260 | [nm] |
| Mode field diameter (MFD) | 1310 nm | 9.2±0.4 | [μm] |
| | 1550 nm | 10.4±0.8 | [μm] |
| Group index of refraction (Typical) | 1310 nm | 1.466 | |
| | 1550 nm | 1.467 | |
| Backscatter characteristics | | | |
| | 1310 nm, 1550 nm | | |
| Step (mean of bidirectional measurement) | | ≤0.05 | [dB] |
| Irregularities over fibre length and point discontinuity | | ≤0.05 | [dB] |
| Difference in backscatter coefficient | | ≤0.03 | [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 ≤50.4 | [km/reel] |
| Environmental characteristics | | | |
| | 1310 nm, 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 | | | |
| Induced Attenuation | 1550 nm | | |
| | 1 turn, 32 mm diameter | ≤0.50 | [dB] |
| | 100 turns, 60 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 | |