

YOFC MaxBand® 550-10 Gb/s GIMM Fibre (50/125 µm)

Description

YOFC MaxBand® 550 GIMM fibre is designed specially for high speed local area networks (LAN) such as 10 Gb/s Ethernet. Meanwhile, MaxBand® 550 fibre can also be used in lower speed LAN than 10 Gb/s. With the extremely refined refractive index profile owing to the optimized PCVD process, YOFC MaxBand® 550 GIMM fibre eliminates the central dip and index-disturbance. The MaxBand® 550 fibres satisfy the use at 850 nm and 1300 nm. The maximum link distance can reach over 550 meters in 10 Gb/s Ethernet system at 850 nm wavelength. MaxBand® 550 fibre is 50/125 µm type.

Application

The outstanding optical performance of MaxBand® 550 fibre makes it suitable for applications including not only 10 Gb/s bit-rate LAN (including not only Ethernet, but other network formats) but also lower bit-rate systems such as 1000 Mb/s, 100 Mb/s and 10 Mb/s network.

MaxBand® 550 fibre is applicable in all cable types including ribbon cable, loose tube stranded cable, slotted core cable, unitube cable and tight-buffer cable.

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 water-soak 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

- Designed for use at 850 nm and 1300 nm
- Suited to application in 10 Gb/s speed or lower bit-rate networks such as Ethernet and other LAN systems
- Ensuring the link distance over 550 meters for 10 Gb/s bit-rate at 850 nm wavelength
- DLPC9 coating offering good protection and excellent force stability

Characteristics	Conditions	Specified Values	Units
Optical characteristics			
Attenuation	850 nm	≤2.5	[dB/km]
	1300 nm	≤0.7	[dB/km]
Overfilled Modal Bandwidth	850 nm	≥3500	[MHz · km]
	1300 nm	≥500	[MHz · km]
Effective Modal Bandwidth	850 nm	≥4700	[MHz · km]
10 Gb/s Ethernet link distance SX	850 nm	≤550	[m]
Differential Mode Delay	see Note 1&2	850 [see Note 1]	[nm]
Numerical Aperture (NA)		0.200±0.015	
Group index of refraction (typical)	850 nm	1.482	
	1300 nm	1.477	
Zero dispersion wavelength		≥1295 ≤1320	[nm]
Zero dispersion slope	1295~1300 nm	≤0.001 ($\lambda_0 \sim 1190$)	[ps/(nm ² · km)]
	1300~1320 nm	≤0.11	[ps/(nm ² · km)]
Backscatter characteristics			
	1300 nm		
Step (Mean of bidirectional measurement)		≤0.10	[dB]
Irregularities over fibre length and point discontinuity		≤0.10	[dB]
Difference backscatter coefficient (bidirectional measurement)		≤0.08	[dB/km]
Geometrical characteristics			
Core diameter		50±2.5	[μm]
Core non-circularity		≤6.0	[%]
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		≤1.5	[μm]
Delivery length	Standard delivery lengths up to 8.8 km/reel		
Environmental characteristics			
	850 nm, 1300 nm		
Temperature dependence			
Induced attenuation	-60°C to +85°C	≤0.10	[dB/km]
Temperature-humidity cycling			
Induced attenuation	-10°C to +85°C, 90% R.H.	≤0.20	[dB/km]
Damp heat dependence			
Induced attenuation	85°C, 85% R.H., 30 days	≤0.20	[dB/km]
Watersoak dependence			
Induced attenuation	20°C for 30 days	≤0.20	[dB/km]
Mechanical characteristics			
Proof test	off line	≥9.0	[N]
		≥1.0	[%]
		≥100	[KPSI]
Bending Dependence	850 nm, 1300 nm		
Induced Attenuation	100 turn, 75 mm diameter	≤0.5	[dB]
Coating strip force	typical average force	1.7	[N]
	peak force	≥1.3 ≤8.9	[N]
Dynamic stress corrosion susceptibility parameter (n _a , Typical)		≥27	

Note: 1. The applied ultra tight DMD specifications (inner and outer mask and sliding window) ensure an effective modal bandwidth of 4700 MHz · km.

2. A tighter inner mask (from 0 to 18 μm) is used as defined in TIA/EIA-492AAC or IEC 60793-2-10, type A1a (from 5 to 18 μm)