

MaxCap 550 - 10 Gb/s GIMM Optical Fibre. Type: 50 / 125 µm



Draka Comteq

Product code: 109
Dual Layer Primary Coating (DLPC9)
Issue date: 12/03
Supersedes: -

850 nm Laser-Optimised 50 µm Multimode Fibre for 10 Gb/s Application over 550 m.

To further support low-cost, short reach 10 Gb/s connectivity, Draka Fibre Technology, trading under the marketing label 'Draka Comteq', has developed a new 850 nm laser-optimised 50 µm multimode fibre for an extended reach of 550 metre applications: MaxCap 550 multimode fibre. These applications are in particular Local Area Networks (LAN) backbones (e.g. 10GBASE-SX), Storage Area Networks (SAN) and Central Office connections. The MaxCap multimode fibres are produced by the proprietary Plasma-activated Chemical Vapour Deposition process (PCVD), acknowledged worldwide as offering the best core profile accuracy in multimode fibre.

Features of MaxCap 550 multimode fibres.

- As OM-3 (plus) type MMF, the MaxCap 550 fully supports 850 nm (SX) serial 10 Gb/s applications over 550 metres. An effective modal bandwidth (EMB) of 4700 MHz.km at 850 nm under laser launch is ensured by means of 850 nm DMD specification.
- The overfilled launch (OFL) bandwidth of the MaxCap 550 multimode fibre at 850 nm is ≥ 3500 MHz.km; at 1300 nm the OFL bandwidth is ≥ 500 MHz.km. This OFL bandwidth performance gives strong support to legacy applications. The MaxCap 550 multimode fibre offers a smooth, low-cost migration path for premises backbone cabling from 10 Mb/s up to 10 Gb/s over 550 m.
- MaxCap 550 multimode fibres offer another cost-saving advantage by eliminating the need to use expensive mode-conditioning patch cords for 1300 nm laser based systems such as 1000BASE-LX.
- MaxCap 550 multimode fibres are equipped with an excellent microbending sensitivity-reducing coating, DLPC9, which results in easy cabling and installation, supporting the maximum cabled attenuation at 850 nm of 3.0 dB/km.

Application in other LAN systems.

Thanks to the special bandwidth performance of the MaxCap 550 multimode fibre, a broad range of legacy and new 10 Gb/s applications can be supported. Together with other multimode fibre products produced by Draka Fibre Technology (e.g. the 1 Gb/s HiCap class), this range of multimode products offers end users the best possible optimisation of their networks in the most flexible way.

The MaxCap 550 multimode fibre exceeds the requirements of TIA/EIA-492AAAC, ISO/IEC 11801 OM-3 type and type A1a.2 of IEC 60793-2-10.

Specifications

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Characteristics	Conditions	Specified Values	Units
Optical Characteristics			
Attenuation Coefficient	850 nm	≤ 2.5	[dB/km]
	1300 nm	≤ 0.7	[dB/km]
Overfilled Modal Bandwidth	850 nm	≥ 3500	[MHz.km]
Effective Modal Bandwidth (EMB) [1,2]	1300 nm	≥ 500	[MHz.km]
	850 nm	≥ 4700	[MHz.km]
Fibre Capacity [3]	850 nm, 10 Gb/s	≤ 550	[m]
Differential Mode Delay [4,5]	850 nm	See Note 4	[ps/m]
Numerical Aperture		0.200 ± 0.015	
Chromatic Dispersion			
Zero-Dispersion Wavelength (λ_0)		≥ 1295	[nm]
Zero-Dispersion Slope	1295 - 1300 nm	$\leq 0.001 \cdot (\lambda_0 - 1190)$	[ps/(nm ² ·km)]
	1300 - 1320 nm	≤ 0.11	[ps/(nm ² ·km)]
Backscatter Characteristics [6]	1300 nm		
Step [7]		≤ 0.1	[dB]
Irregularities over fibre length		≤ 0.1	[dB]
Reflections		Not allowed	
Group Index of Refraction (Typical)	850 nm	1.482	
	1300 nm	1.477	
Geometrical Characteristics			
Core		50 ± 2.5	[μm]
Core Non-Circularity		≤ 6.0	[%]
Core / Cladding Concentricity Error		≤ 1.5	[μm]
Cladding Diameter		125.0 ± 1.0	[μm]
Cladding Non-Circularity		≤ 1.0	[%]
Coating Diameter		245 ± 10	[μm]
Coating Non-Circularity		≤ 6	[%]
Coating Concentricity Error		≤ 6	[μm]
Length	Standard lengths up to	8.8	[km]
Environmental Characteristics			
Temperature Dependence	850 nm, 1300 nm		
Induced Attenuation	-60°C to +85°C	≤ 0.1	[dB/km]
Temperature and Humidity Cycling	850 nm, 1300 nm		
Induced Attenuation	-10°C to +85°C, 90% R.H.	≤ 0.2	[dB/km]
Watersoak Dependence	850 nm, 1300 nm		
Induced Attenuation	20°C for 30 days	≤ 0.2	[dB/km]
Damp Heat Dependence	850 nm, 1300 nm		
Induced Attenuation	85°C, 85% R.H., 30 days	≤ 0.2	[dB/km]
Mechanical Characteristics			
Proof Test	off line	≥ 8.8 ≥ 1.0 ≥ 100 ≥ 0.7	[N] [%] [KPSI] [GPa]
Bending Dependence	850 nm, 1300 nm		
Induced Attenuation	100 turns, 75 mm diameter	≤ 0.5	[dB]
Dynamic Stress Corrosion			
Susceptibility Parameter (Typical)		≥ 27	
Coating Strip Force	Typical average force	1.7	[N]
	Peak force	≥ 1.3 ≤ 8.9	[N]

- The minimum Effective Modal Bandwidth is ensured by means of Differential Mode Delay (DMD).
- This fibre should be used with transmitters according to TIA/EIA-492AAAC or IEC 60793-2-10.
- This fibre offers a 10 Gb/s application distance of 550 meters using a maximum cabled fibre attenuation of 3.0 dB/km at 850 nm and a maximum total connector loss of 1 dB.
- The applied ultra tight DMD specifications (inner and outer mask and sliding window) ensure an effective modal bandwidth of 4700 MHz.km.
- A tighter inner mask (from 0 to 18 μm) is used as defined in TIA/EIA-492AAAC or IEC 60793-2-10, type A1a.2 (from 5 to 18 μm).
- OTDR measurement with 0.5 μs pulse width.
- Mean of bi-directional measurement.