

C32: MaxCap-BB-OM4 multimode fibre

Properties of cabled bend insensitive OM4 fibre.

General and application

This fibre is a laser-optimised, bend-insensitive graded-index multimode OM4 fibre suitable for transmission speeds of 10 Gb/s or higher. It has a 50 µm core diameter and a 125 µm cladding diameter. The fibre is optimised for maximum transmission properties at 850 nm; but is also well suited for 1300 nm systems. This fibre is fully compliant to the OM4 specification. The fibre supports 1100 m link length for a 1000BASE-SX system and 550 m for a 1000BASE-LX system as well as 550 m for a properly engineered 10GBASE-SX system. In data centres, this fibre supports 150 m for 40BASE-SR and 100 BASE100-SR systems. The outstanding bending performance of this fibre supports future compact cable management.

Standards

IEC 60793-2-10: type A1a.3	EN 50173-1 category OM4
ISO/IEC 11801 category OM4	TIA/EIA-492 AAAD
ISO/IEC 24764	ANSI/TIA/EIA-568.C
ITU G.651.1	IEEE 802.3
EN 60793-2-10: type A1a.3	

Optical properties

Attribute	Measurement method	Units	Limits
Attenuation limit according to IEC 60793-2-10, 850 nm	IEC 60793-1-40	dB/km	≤ 2.5
Attenuation limit according to IEC 60793-2-10, 1300 nm	IEC 60793-1-40	dB/km	≤ 0.8
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	IEC 60793-1-40	dB/km	Max. 0.1
Numerical aperture	IEC 60793-1-43	-	0.200 ± 0.015

Cable attenuation

Maximum attenuation value of cable at 850 nm	IEC 60793-1-40	dB/km	≤ 3.0
Maximum attenuation value of cable at 1300 nm	IEC 60793-1-40	dB/km	≤ 1.0

Attenuation variation vs bending

Fibre bending loss R=7.5 mm 850/1300 nm	IEC 60793-1-40	dB	≤ 0.2 / ≤ 0.5
Fibre bending loss R=15 mm 850/1300 nm	IEC 60793-1-40	dB	≤ 0.1 / ≤ 0.3

Bandwidth

Overfilled (OFL) modal bandwidth at 850 nm	IEC 60793-1-41	MHz • km	≥ 3500
Overfilled (OFL) modal bandwidth at 1300 nm	IEC 60793-1-41	MHz • km	≥ 500
Effective Modal Bandwidth (EMB) at 850 nm	IEC 60793-1-49	MHz • km	≥ 4700

Group index of refraction

Group index of refraction at 850 nm	IEC 60793-1-22	-	1.482
Group index of refraction at 1300 nm	IEC 60793-1-22	-	1.477

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Geometrical properties

Attribute	Measurement method	Units	Limits
Core diameter	IEC 60793-1-20	μm	50 ± 2
Cladding diameter	IEC 60793-1-20	μm	125.0 ± 1.0
Cladding non-circularity	IEC 60793-1-20	%	≤ 0.7
Core non-circularity	IEC 60793-1-20	%	≤ 5
Core-cladding concentricity error	IEC 60793-1-20	μm	≤ 1
Primary coating diameter - uncoloured	IEC 60793-1-21	μm	242 ± 5
Primary coating diameter - coloured	IEC 60793-1-21	μm	250 ± 15
Primary coating non-circularity	IEC 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC 60793-1-21	μm	≤ 6

Mechanical properties

Attribute	Measurement method	Units	Limits
Proof stress level	IEC 60793-1-30	GPa	≥ 0.7 (≈ 1 %)
Typical average strip force	IEC 60793-1-32	N	1.7
Strip force (peak)	IEC 60793-1-32	N	1.3 ≤ F _{peak.strip} ≤ 8.9

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