C11: MaxCap-OM4 multimode fibre

Properties for cabled MaxCap-OM4 fibre

General and application

This cabled fibre is a graded-index multimode fibre with extended reach, optimised for 10 Gb/s transmission speeds. It has a 50 µm core diameter and a 125 µm cladding diameter. The fibre is designed for use at 850 nm, but can also be used at 1300 nm.
The fibre is compliant or better than all relevant network standards. This fibre was formerly named MaxCap 550

Standards

IEC 60793-2-10: type A1a.3 (in development)	EN 50173-1:2007. Amendment AB category OM4
EN 60793-2-10: type A1a.3 (in development)	ISO/IEC 11801:2002. Amendment 2 category OM4
TIA/EIA-492 AAAD	IEEE 802.3 - 2002. incl. amendment 802.3ae - 2002.

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

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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