

Properties of cabled Bend-insensitive Enhanced Multimode 50µm fibre

MaxCap-BB-OM4 Multimode Fibre

General and application

Prysmian MaxCap BendBright® OM4, laser-optimised, bend-insensitive, graded-index multimode fibres are designed for transmission speeds of 10 Gb/s and beyond. It is suitable for systems operating at 850 nm and 1300 nm wavelengths. MaxCap BendBright® OM4 fibres incorporate BendBright® technology to deliver enhanced macro-bending performance.

Standards and Norms

IEC 60793-2-10: type A1a.3	ISO / IEC 11801 Category OM4	ITU G.651.1
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Attenuation & Optical properties

Attribute	Measurement method	Units	Limits
Attenuation @ 850 nm		dB/km	≤ 2.5
Attenuation @ 1300 nm	IEC 60793-1-40	dB/km	≤ 0.7
Point discontinuity @ 850 nm & 1300 nm		dB/km	≤ 0.1
Numerical aperture	IEC 60793-1-43	-	0.200 ± 0.015

Bandwidth

Attribute	Measurement method	Units	Limits
Overfilled launch modal bandwidth (OFL) @ 850 nm	IEC 60793-1-41	MHz.km	≥ 3500
Overfilled launch modal bandwidth (OFL) @ 1300 nm		MHz.km	≥ 500
Effective modal bandwidth (EMB) @ 850 nm	IEC 60793-1-49	MHz.km	≥ 4700

Group index of refraction

Attribute	Measurement method	Units	Limits
Typical group index of refraction @ 850 nm		-	1.482
Typical group index of refraction @ 1300 nm	IEC 60793-1-22	-	1.477

Geometrical properties

Attribute	Measurement method	Units	Limits
Core diameter		µm	50 ± 2.5
Core non-circularity		%	≤ 5
Cladding diameter	IEC 60793-1-20	µm	125.0 ± 1.0
Cladding non-circularity		%	≤ 1.0
Core-cladding concentricity error		µm	≤ 1.5
Primary coating diameter		µm	245 ± 10
Primary coating non-circularity	IEC 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error		µm	≤ 10

Bending Loss

Attribute	Measurement method	Units	Limits
2 turns on a R= 7.5 mm mandrel @ 850 nm		dB	≤ 0.2
2 turns on a R= 7.5 mm mandrel @ 1300 nm		dB	≤ 0.5
2 turns on a R= 15 mm mandrel @ 850 nm	IEC 60793-1-40	dB	≤ 0.1
2 turns on a R= 15 mm mandrel @ 1300 nm		dB	≤ 0.3

Mechanical properties

<u>Attribute</u>	<u>Measurement method</u>	<u>Units</u>	<u>Limits</u>
Proof stress level	IEC 60793-1-30	GPa	≥ 0.7 ($\approx 1\%$)
Average strip force (F_{ave})	IEC 60793-1-32	N	$1.0 \leq F_{ave} \leq 3.0$
Peak strip force (F_{peak})		N	$1.3 \leq F_{peak} \leq 8.9$

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