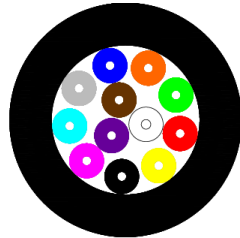


Indoor / Outdoor Light Duty Riser Optical Cable- OM4

DESCRIPTION

This semi-tight buffered multi-fibre optical cable is suitable for applications in local area network (LAN) including FDDI cabling, Ethernet and Token ring.



MaxCap BendBright® OM4 fibres are laser-optimised, bend-insensitive, graded-index multimode fibres engineered for transmission speeds of 10 Gb/s and higher. They are ideal for systems operating at wavelengths of 850 nm and 1300 nm. Featuring BendBright® technology, these fibres offer superior macro-bending performance.

FEATURES

- Multi-fibre construction
- Secondary fibre protection (Semi-tight buffer): Low smoke and fumes zero halogen (LSZH) material
- Peripheral strength members: High modulus aramid yarns
- Longitudinal water tightness: Water swellable elements (dry-core technology)
- Sheath: UV stabilised low smoke and fumes zero halogen (LSZH) in compliance with AS 1049

STANDARDS

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

TECHNICAL DATA

Number of Fibres		4	6	8	12	24
Tight buffer diameter	µm	900 ± 50				
Cable nominal diameter	mm	4.8	4.8	5.4	6.2	8.8
Cable nominal weight	kg/km	20	22	26	33	61
Max. installation tension	N	600				1100
Max. crush resistance	N/100 mm	500 (Short-term) / 300 (Long-term)				
Min. bending radius	mm	At full load 20 x Cable OD At no load 10 x Cable OD				
Temperature range	°C	Installation 0 -> +50		Transport & Storage -10 -> +60		Operation -10 -> +70

#Footnote: Cable should be installed in an environment that is not permanently submerged in water.

IDENTIFICATION

Fibre Colours (Buffered fibre)

No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua
No.	13	14	15	16	17	18	19	20	21	22	23	24
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

Sheath Colour:

The outer sheath colour is black.

Yellow or blue sheath are also available for single-mode fibres upon request.

Orange or aqua sheath are also available for multi-mode fibres upon request.

FLAME RESISTANCE

AS/NZS IEC 60332.1	Vertical flame propagation for single cable
AS/NZS IEC 60332.3.24	Vertical flame propagation for bunched cables – Category C

MAIN MECHANICAL CHARACTERISTICS

Parameter	Test method	Test conditions	Acceptance criteria*
Tensile strength	IEC 60794-1-21-E1	Load: As per cable maximum installation tension in technical data table above	Fibre strain $\leq 0.6\%$. No physical damage and no change in attenuation after test.
Crush	IEC 60794-1-21-E3	Load: As per maximum crush resistance in technical data table above Duration: 1 min (short-term) / 15 min (long-term)	No physical damage. No change in attenuation after test (short-term) or during test (long-term).
Impact	IEC 60794-1-21-E4	Impact energy: 1 J Anvil radius: 300 mm	No physical damage. No change in attenuation after test.
Torsion	IEC 60794-1-21-E7	Sample length: 1 m Rotation: +/-180 degree, 10 cycles	No physical damage. No change in attenuation after test.
Bend	IEC 60794-1-21-E11	Mandrel radius: As per Min. bending radius at no load in technical data table above No. of turns/helix: 6, No. of cycles: 10	No physical damage. No change in attenuation after test.
Bend under tension	Concurrent to tensile test	Mandrel radius: As per Min. bending radius at full load in technical data table above Bend: 360°, 1 turn	No physical damage. No change in attenuation after test.
Temperature cycling	IEC 60794-1-22-F1	Sample length: 1000 m (minimum) Temperature range: As per Operation temperature range in technical data table above	No change in attenuation between 10°C & 30°C. Max. change in attenuation $\leq 0.15\text{dB/km}$ between Min. & Max. operation temperatures.
Water penetration	IEC 60794-1-22-F5C	Sample length=3m, Water height=1m	No water leakage after 24 hours

* All optical measurements for singlemode fibres performed at 1550 nm.

CABLE PROPERTIES

Attenuation & Optical properties

Attribute	Measurement	Units	Limits
Attenuation @ 850 nm	IEC 60793-1-40	dB/km	≤ 2.5
Attenuation @ 1300 nm		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	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	Units	Limits
Typical group index of refraction @ 850 nm	IEC 60793-1-22	-	1.482
Typical group index of refraction @ 1300 nm		-	1.477

Geometrical properties

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

Bending Loss

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

Mechanical properties

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