



This fiber is a graded-index multimode fiber with extended reach, optimised for 10 Gb/s transmission speeds. It has a 50 μm core diameter and a 125 μm cladding diameter. The fiber is designed for use at 850 nm, but can also be used at 1300 nm.

R&M OM3 and OM4 fiber are bend-optimized (see table). The fiber is compliant or better than all relevant network standards e.g.

- Range for 1000BASE – S*: 1000 m
 - Range for 10GBASE – S*: 300 m
- * all applications based on wavelength 850 nm

Standards and norm

This fiber exceeds the requirements of:	<ul style="list-style-type: none"> • IEC 60793-2-10 Category A1a.2 • ITU Recommendation G.651 • TIA/EIA-492AAAC
Testing methods are in accordance with the following standards:	<ul style="list-style-type: none"> • IEC 60793-1-XX: 2002 • EN 60793-1-XX: 2002 • FOTP-220 (DMD)

Bend-optimized fiber

Criteria	Radius	Turns	Induced Attenuation
At 850 nm	37.5 mm	100	0.1 dB
	15.0 mm	2	0.1 dB
	7.5 mm	2	0.2 dB
At 1300 nm	37.5 mm	100	0.2 dB
	15.0 mm	2	0.3 dB
	7.5 mm	2	0.5 dB

Material

Criteria	Value
Core	The core is germanium doped
Coating	Dual layer UV curable acrylate, type DLPC9. The coating offers excellent stable stripping performance, and a unique high and stable value for the dynamic stress corrosion coefficient. This gives a greatly improved mechanical protection of the fiber when used in harsh environments.

Optical properties

Property	Unit	Value
Attenuation (of cable with fibers)	[dB/km]	At 850 nm: ≤ 3.0
		At 1300 nm: ≤ 1.0
Fiber attenuation (for reference only)	[dB/km]	At 850 nm: ≤ 2.5
		At 1300 nm: ≤ 0.7
Numerical aperture	–	0.200 ± 0.015
In homogeneity of OTDR trace for any two 1000 metre fiber lengths	[dB/km]	Max.: 0.1

Property	Unit	Value
Bandwidth (OFL)	[MHz x km]	At 850 nm: ≥ 1500 At 1300 nm: ≥ 500
Effective Modal Bandwidth ¹⁾ :	[MHz x km]	At 850 nm: ≥ 2000
Group index of refraction	–	At 850 nm: 1.482 At 1300 nm: 1.477

¹⁾ Effective Modal Bandwidth is assured by means of differential mode delay (DMD) measurement as specified in IEC 60793-1-49.

Dimensional and mechanical properties

Property	Unit	Value	Standard
Core diameter	[μm]	50 ± 2.5	IEC/EN 60793-1-20
Cladding diameter	[μm]	125.0 ± 1.0	IEC/EN 60793-1-20
Cladding non-circularity	[%]	≤ 1.0	IEC/EN 60793-1-20
Core non-circularity	[%]	≤ 5	IEC/EN 60793-1-20
Core-cladding concentricity error	[μm]	≤ 1.5	IEC/EN 60793-1-20
Primary coating diameter - uncoloured	[μm]	242 ± 7	IEC/EN 60793-1-21
Primary coating diameter - coloured	[μm]	250 ± 15	IEC/EN 60793-1-21
Primary coating non-circularity	[%]	≤ 5	IEC/EN 60793-1-21
Primary coating-cladding concentricity error	[μm]	≤ 10	IEC/EN 60793-1-21
Proof stress level	[GPa]	≥ 0.7 ($\approx 1\%$)	IEC/EN 60793-1-30
Typical average strip force	[N]	1.7	IEC/EN 60793-1-32
Strip force (peak)	[N]	$1.0 \leq F_{\text{peak,strip}} \leq 8.9$	IEC/EN 60793-1-32