

C03e: General purpose enhanced SM fibre

ESMF: Low water-peak OS2 and OS1 fibre

General and application

This enhanced Single mode fibre provides improved performance across the entire 1260 nm to 1625 nm wavelength spectrum due to its low attenuation in 1383 nm the water-peak region.

Standards and Norms

IEC 60793-2-50 Category B.1.3	ISO/IEC 11801:2002, cat. OS1
EN 60793-2-50: Class B1.3	ISO/IEC 24702: 2006, cat. OS2; also OS1 requirements are fulfilled
ITU Recommendation G.652.D – the older ITU designations A, B and C are also fulfilled	IEEE 802.3 – 2002 incl. 802.3ae
EN 50173-1:2007, cat. OS2; also OS1 requirements are fulfilled	

Attenuation (of cable with fibres)

IEC 60793-1-40

1310 nm – 1625 nm	≤ 0.39 dB/km
1550 nm	≤ 0.25 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	Max. 0.1 dB/km

Group index of refraction

IEC 60793-1-22

Group index of refraction at 1310 nm	1.467
Group index of refraction at 1550 nm	1.468
Group index of refraction at 1625 nm	1.468

Other properties

IEC 60793-1-xx

Attribute	Measurement method	Units	Limits
Cladding diameter	IEC/EN 60793-1-20	µm	125.0 ± 0.7
Cladding non-circularity	IEC/EN 60793-1-20	%	≤ 0.7
Core (MFD) non-circularity	IEC/EN 60793-1-20	%	≤ 6
Core (MFD) -cladding concentricity error	IEC/EN 60793-1-20	µm	≤ 0.5
Primary coating diameter - uncoloured	IEC/EN 60793-1-21	µm	242 ± 7
Primary coating diameter - coloured	IEC/EN 60793-1-21	µm	250 ± 15
Primary coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	µm	≤ 12.0
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈ 1 %)
Strip force (peak)	IEC/EN 60793-1-32	N	1.0 ≤ F _{peak.strip} ≤ 8.9
Chromatic dispersion coefficient: In the interval 1285 nm – 1330 nm At 1550 nm At 1625 nm	IEC/EN 60793-1-42	ps/km • nm ps/km • nm ps/km • nm	≤ 3 ≤ 18.0 ≤ 22.0
Zero dispersion wavelength, λ ₀		nm	1311 ± 11
Zero dispersion slope		ps/(nm ² • km)	≤ 0.090
Cut-off wavelength	IEC/EN 60793-1-44	λ _c nm λ _{cc} nm	1034 - 1330 ≤ 1260
Mode field diameter at 1310 nm	IEC/EN 60793-1-45	µm	9.0 ± 0.4
Mode field diameter at 1550 nm	IEC/EN 60793-1-45	µm	10.1 ± 0.5
Macrobending loss at 1550 nm, 100 turns on a ø 60 mm mandrel.	IEC/EN 60793-1-47	dB	≤ 0.05
Polarisation mode dispersion (PMD) coefficient, cabled	IEC/EN 60793-1-48	ps/√km	≤ 0.5
PMD _Q Link Design Value	IEC/EN 60794-3	ps/√km	≤ 0.2