

Properties of cable with BendBright™ A1 Single-Mode Fibre

C53



Applicable Standards

- IEC / EN 60793-2-50 Category B-657.A1 and B-652.D
- ITU-T Recommendation G.657.A1 and G.652.D
- EN 50173-1: Category OS2 and OS1a
- ISO/IEC 11801: Category OS2 and OS1a

Optical properties

Attribute	Measurement method	Units	Limits
Mode field diameter at 1310 nm	IEC/EN 60793-1-45	μm	9.0 ± 0.4
Mode field diameter at 1550 nm		μm	10.1 ± 0.5
Chromatic Dispersion coefficient: In the interval 1285 nm – 1330 nm	IEC/EN 60793-1-42	ps/km • nm	≤ 3
At 1550 nm		ps/km • nm	≤ 18.0
At 1625 nm		ps/km • nm	≤ 22.0
Zero Dispersion Wavelength, λ ₀		nm	1300 - 1324
Zero Dispersion Slope		ps/(nm ² • km)	≤ 0.092
Cut-off Wavelength	IEC/EN 60793-1-44	λ _{cc} nm	≤ 1260 *
Polarisation Mode Dispersion (PMD) coefficient	IEC/EN 60793-1-48	ps/√km	≤ 0.1
PMD _Q Link Design Value (computed with Q=0.01%, N=20)	IEC/EN 60794-3	ps/√km	≤ 0.06

* guaranteed value according to the ITU-T (ATM G650) method

Attenuation

Attribute	Measurement method	Units	Limits
Maximum attenuation value of cable at 1310 nm	IEC/EN 60793-1-40	dB/km	≤ 0.36
Maximum attenuation value of cable at 1383 nm**	IEC/EN 60793-1-40	dB/km	≤ 0.36
Maximum attenuation value of cable at 1460 nm	IEC/EN 60793-1-40	dB/km	≤ 0.26
Maximum attenuation value of cable at 1550 nm	IEC/EN 60793-1-40	dB/km	≤ 0.23
Maximum attenuation value of cable at 1625 nm	IEC/EN 60793-1-40	dB/km	≤ 0.25
Max. attenuation change in the interval 1285 - 1330 nm (ref. 1310 nm)		dB/km	≤ 0.03
Max. attenuation change in the interval 1525 - 1575 nm (ref. 1550 nm)		dB/km	≤ 0.02
Local discontinuity at 1310 and 1550 nm	IEC/EN 60793-1-40	dB	≤ ± 0.05

** Including H2-ageing according to IEC 60793-2-50, type B.1.3, @1383nm

Attenuation variation vs Bending

Attribute	Measurement method	Units	Limits
100 turns on a mandrel R = 30 mm at 1625nm	IEC/EN 60793-1-47	dB	≤ 0.05
10 turns on a mandrel R = 15 mm at 1550nm	IEC/EN 60793-1-47	dB	≤ 0.25
10 turns on a mandrel R = 15 mm at 1625nm	IEC/EN 60793-1-47	dB	≤ 1.0
1 turn on a mandrel R = 10 mm at 1550nm	IEC/EN 60793-1-47	dB	≤ 0.75
1 turn on a mandrel R = 10 mm at 1625nm	IEC/EN 60793-1-47	dB	≤ 1.5

Group index of refraction

Attribute	Measurement method	Units	Values
1310 nm	IEC/EN 60793-1-22	-	1.467
1550 nm	IEC/EN 60793-1-22	-	1.467
1625 nm	IEC/EN 60793-1-22	-	1.468

Rayleigh Backscatter coefficient (1ns pulse width)

Attribute	Measurement method	Units	Values
1310 nm	-	dB	-79.4
1550 nm	-	dB	-81.7
1625 nm	-	dB	-82.5

Geometrical properties

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-cladding concentricity error	IEC/EN 60793-1-20	µm	≤ 0.5
Coating diameter – ColorLock ^{XS} and natural	IEC/EN 60793-1-21	µm	245 ± 10
Coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Coating-Cladding concentricity error	IEC/EN 60793-1-21	µm	≤ 12

Mechanical properties

Attribute	Measurement method	Units	Limits
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈ 1 %)
Strip force (average)	IEC/EN 60793-1-32	N	1 ≤ F _{average.strip} ≤ 3
Strip force (peak)	IEC/EN 60793-1-32	N	1.2 ≤ F _{peak.strip} ≤ 8.9
Dynamic fatigue resistance, aged and unaged	IEC/EN 60793-1-33	-	n _d ≥ 20

All measurements in accordance with ITU-T G650 recommendations

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