

## Properties of cable with BendBright® XS 180µm fibre

### BendBright®, low water peak G652D, OS2, G657A2, low bend

#### General and application

BendBright® XS 180µm optical fibre size reduction corresponds to half of the cross-section of legacy 250µm optical fibres, while the 125µm glass diameter is fully preserved. BendBright® XS 180µm is fully compliant with ITU-T G.652.D and G.657.A2 recommendations and can be spliced with any legacy standard single-mode fibre. BendBright® XS 180µm optical fibre enables the unprecedented cable density, deployment flexibility and reliable connectivity needed for tomorrow's network.

#### Standards and Norms

IEC 60793-2-50 Category B6_a2 and B6_b2	EN 50 173-1: cat. OS2
EN 60793-2-50: Class B6_a2 and B6_b2	ISO/IEC 11801: cat. OS2 and OS1
ITU Recommendation G.657.A2 and G.657.B2	ISO/IEC 24702: cat. OS2 and OS1
ITU Recommendation G.652 A, B, C and D	IEEE 802.3

#### Optical properties

Attribute	Measurement method	Units	Limits
Mode field diameter at 1310 nm	IEC/EN 60793-1-45	µm	8.8 ± 0.4
Mode field diameter at 1550 nm		µm	9.8 ± 0.5
Chromatic dispersion coefficient:	IEC/EN 60793-1-42		
In the interval 1285 nm – 1330 nm		ps/km • nm	≤  3.7
At 1550 nm		ps/km • nm	≤ 18.5
At 1625 nm		ps/km • nm	≤ 23.0
Zero dispersion wavelength, λ <sub>0</sub>		nm	1300 - 1324
Zero dispersion slope		ps/(nm <sup>2</sup> • km)	≤ 0.092
Cut-off wavelength	IEC/EN 60793-1-44	λ <sub>cc</sub> nm	≤ 1260 *
Polarisation mode dispersion (PMD) coefficient	IEC/EN 60793-1-48	ps/√km	≤ 0.1
PMD <sub>Q</sub> 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	≤ 0.38
Maximum attenuation value of cable at 1383 nm*	IEC/EN 60793-1-40	dB/km	≤ 0.38
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
Local discontinuity at 1310 and 1550 nm	IEC/EN 60793-1-40	dB	max. 0.1

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

#### Attenuation variation vs Bending

Attribute	Measurement method	Units	Limits
10 turns on a mandrel R = 15 mm, @1550nm	IEC/EN 60793-1-47	dB	≤ 0.03
10 turns on a mandrel R = 15 mm, @1625nm	IEC/EN 60793-1-47	dB	≤ 0.1
1 turn on a mandrel R = 10 mm, @1550nm	IEC/EN 60793-1-47	dB	≤ 0.1
1 turn on a mandrel R = 10 mm, @1625nm	IEC/EN 60793-1-47	dB	≤ 0.2
1 turn on a mandrel R = 7.5 mm, @1550nm	IEC/EN 60793-1-47	dB	≤ 0.5
1 turn on a mandrel R = 7.5 mm, @1625nm	IEC/EN 60793-1-47	dB	≤ 1.0

### 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	-79.1
1550 nm	-	dB	-81.4
1625 nm	-	dB	-82.2

### 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 (MDF) -cladding concentricity error	IEC/EN 60793-1-20	μm	≤ 0.5
Primary coating diameter – ColorLock <sup>®XS</sup> and natural	IEC/EN 60793-1-21	μm	180 ± 10
Primary coating non-circularity	IEC/EN 60793-1-21	%	≤ 5
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	μm	≤ 10

### Mechanical properties

Attribute	Measurement method	Units	Limits
Proof stress level	IEC/EN 60793-1-30	GPa	≥ 0.7 (≈ 1 %)
Strip force (peak)	IEC/EN 60793-1-32	N	1.0 ≤ F <sub>peak.strip</sub> ≤ 8.9
Dynamic fatigue resistance aged and unaged	IEC / EN 60793-1-33	(N <sub>d</sub> )	≥ 20
Static fatigue, aged	IEC / EN 60793-1-33	(N <sub>s</sub> )	≥ 23

*All measurements in accordance with ITU-T G650 recommendations*

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