

BendBright™ Elite Single-Mode Fibre with 500 µm coating ITU-T G.657.B3



APPLICABLE STANDARDS

- IEC/EN 60793-2-50 type B-657.B3
- IEC/EN 60793-2-50 type B-652.D
- ITU-T Recommendation G.657.B3
- ITU-T Recommendation G.652.D

Issue Date: September 2024
Supersedes: November 2023

OPTICAL SPECIFICATIONS

ATTENUATION

Attribute	Units	1310 nm	1383 nm ¹	1550 nm	1625 nm
Attenuation	dB/km	≤ 0.4	≤ 0.4	≤ 0.25	≤ 0.3

¹ Including H2-aging according to IEC 60793-2-50, type B.1.3

MODE FIELD DIAMETER

Wavelength (nm)	Units	MFD
1310	µm	8.8 ± 0.4
1550	µm	9.8 ± 0.5

Cutoff Wavelength

Cable Cutoff Wavelength (λ_{ccf})	≤ 1260 nm
---	-----------

CHROMATIC DISPERSION

Wavelength (nm)	Units	Chromatic Dispersion
In the interval 1285 – 1330	ps/[nm.km]	≤ 3.7
At 1550	ps/[nm.km]	≤ 18.5
At 1625	ps/[nm.km]	≤ 23.0
Zero Dispersion Wavelength, λ_0	nm	1300 - 1324
Slope (S_0) at λ_0	ps/(nm ² · km)	≤ 0.092

POLARIZATION MODE DISPERSION (PMD)

Attribute	Units	Specified Values
PMD Link Design Value ²	ps/√km	≤ 0.06
Max. individual Fiber	ps/√km	≤ 0.1

² According to IEC 60794 –3, Ed 3 (Q=0.01%)

ATTENUATION VARIATION VS. BENDING

Number of Turns	Wavelength (nm)	Induced Attenuation (dB)
1 turn on a R = 10 mm mandrel	1550	≤ 0.03
1 turn on a R = 10 mm mandrel	1625	≤ 0.1
1 turn on a R = 7.5 mm mandrel	1550	≤ 0.08
1 turn on a R = 7.5 mm mandrel	1625	≤ 0.25
1 turn on a R = 5 mm mandrel	1550	≤ 0.15
1 turn on a R = 5 mm mandrel	1625	≤ 0.45

TYPICAL VALUES

Attribute	Units	1310 nm	1550 nm	1625 nm
Effective group index	-	1.467	1.468	1.468
Rayleigh Backscatter Coefficient for 1 ns pulse width	dB	- 79.0	- 81.3	- 82.0

GEOMETRICAL SPECIFICATIONS

GLASS GEOMETRY

Attribute	Units	Specified Values
Cladding Diameter	μm	125.0 ± 0.7
Cladding non-Circularity	%	≤ 1.0
Core - Cladding Concentricity Error	μm	≤ 0.5

COATING GEOMETRY

Attribute	Units	Specified Values
Coating Diameter	μm	500 ± 15
Coating non-Circularity	%	≤ 5
Coating - Cladding Concentricity Error	μm	≤ 20

MECHANICAL SPECIFICATIONS

Proof Test ³

The entire spool length is subjected to a tensile proof stress ≥ 0.7 GPa (100 kpsi) ; 1% strain equivalent

³ Higher proof test available upon request

COATING PERFORMANCE

Attribute	Units	Typical Values
Average Coating Strip Force, unaged and aged ⁴	N	2
Peak Coating Strip Force, unaged and aged ⁴	N	1.3 to 8.9

⁴ Aging at 23°C, 30 days

FIBRE STRENGTH

Attribute	Units	Specified Values
Dynamic Tensile Strength (0.5 meter gauge length), unaged and aged ⁵	GPa	median > 3.8 (550 kpsi)
Dynamic Fatigue, unaged and aged ⁵	-	n _d ≥ 18

⁵ Aging at 85°C, 85% RH, 30 days

ENVIRONMENTAL SPECIFICATIONS

Environmental test	Test Conditions	Induced attenuation at 1550, 1625 nm (dB/km)
Temperature Cycling	-60°C to +85°C	≤ 0.05
Temperature - Humidity Cycling	-10°C to +85°C, 4-98% RH	≤ 0.05
Water Immersion	30 days; 23°C	≤ 0.05
Dry Heat	30 days ; 85°C	≤ 0.05
Damp Heat	30 days; 85°C; 85% RH	≤ 0.05

OTHERS

Attribute	Specification
Length	Up to 6.6 km per spool
Coating	Acrylate coating (Clear)

All measurements in accordance with ITU-T G650 recommendations

© PRYSMIAN GROUP 2024, All Rights Reserved
All sizes and values without tolerances are reference values. Specifications are for product as supplied by Prysmian: any modification or alteration afterwards of product may give different result. The information contained within this document must not be copied, reprinted or reproduced in any form, either wholly or in part, without the written consent of Prysmian. The information is believed to be correct at the time of issue. Prysmian reserves the right to amend this specification without prior notice. This specification is not contractually valid unless specifically authorized by Prysmian.