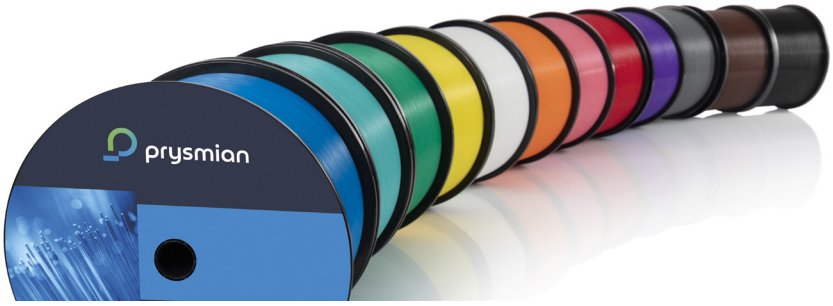
BendBright™

BendBright™ Elite Single-Mode Fibre

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: August 2024
Supersedes: November 2023

OPTICAL SPECIFICATIONS

ATTENUATION

Attribute	Units	1310 nm	1383 nm [1]	1550 nm	1625 nm
Attenuation	dB/km	≤ 0.35	≤ 0.35	≤ 0.22	≤ 0.24

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

ATTENUATION VS. WAVELENGTH

Wavelength Range (nm)	Reference λ (nm)	(dB/km)
1285 - 1330	1310	≤ 0.03
1525 - 1575	1550	≤ 0.02
1460 - 1625	1550	≤ 0.04

Point discontinuities
No point discontinuity greater than 0.05 dB at 1310 nm and 1550 nm.

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

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MODE FIELD DIAMETER

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

CUTOFF WAVELENGTH

Attribute	Specification
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 (S0) at λ_0	ps/(nm² · 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%)

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
Core - Cladding Concentricity Error	µm	≤ 0.5
Cladding non-Circularity	%	≤ 0.7
Fiber Curl (radius)	m	≥ 4

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COATING GEOMETRY

Attribute	Units	Specified Values
Coating Diameter	µm	242 ± 7
Coating - Cladding Concentricity Error	µm	≤ 12
Coating non-Circularity	%	≤ 5

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	Specified Values
Average Coating Strip Force, unaged and aged [4]	N	$1 \leq F_{avg\text{-}strip} \leq 3$
Peak Coating Strip Force, unaged and aged [4]	N	$1.2 \leq F_{peak\text{-}strip} \leq 8.9$

[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]	-	$n_d \geq 20$

[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	14 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 50.4 km per spool
Coating	Acrylate coating; ColorLock™ XS and Clear

All measurements in accordance with ITU-T G650 recommendations

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