



Draka

Specialty Fiber

DrakaElite™ BendBright® Elite Fiber

Ultra bend-insensitive SMF – Guaranteed for very low radii



Issue date: 10/19
Supersedes: 08/10

Draka's BendBright fiber family has set the standard for single-mode fibers for applications that are particularly demanding in terms of bending resistance, notably Access and FTTX telecom networks. Based on Draka's proprietary manufacturing technologies and patented trench-assisted design, Draka's BendBright-Elite fiber offers enhanced bending performance at very low radii at all wavelengths and can endure repeated very tight bending.

With bend losses less than 0.1 dB for 1 turn at 5mm at 1550 nm, the BendBright-Elite fiber offers unmatched value to customers that need to reduce the size of their components or to those who want to introduce the fiber in customer's homes. It is manufactured using Draka's Plasma Chemical Vapor Deposition process.

The fiber fully complies with or exceeds the ITU-T Recommendation G.652.D, and the IEC 60793-2-50 type B1.3. Optical Fiber Specification and is backward compatible with all other G.652 fiber used in current optical networks. In addition, the fiber fully complies with ITU-T Recommendation G.657.B3 and the IEC 60793-2-50 type B6_b3.

Features	Advantages
Excellent macro-bend performance at very low radii (down to 5 mm)	<ul style="list-style-type: none"> Allows miniaturization of optical components Permits high power in compact components
Solid silica structure	<ul style="list-style-type: none"> No special connectorization procedures No special mechanical splice procedures Easy to fusion splice with any commercial machine
DLPC9 coating	Guarantees easy strippability



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Product Type: G.657.B3, G.652.D
Coating Type: Natural

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Optical Specifications

Attenuation	
Attenuation at 1310 nm	≤ 0.35 dB/km
Attenuation at 1383 nm*	≤ 0.35 dB/km
Attenuation at 1550 nm	≤ 0.22 dB/km
Attenuation at 1625 nm	≤ 0.24 dB/km

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

Other values available on request

Attenuation vs. Wavelength

Maximum attenuation change over the window from reference

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 with Bending

Number of Turns	Mandrel Radius (mm)	Wavelength (nm)	Induced Attenuation (dB)
1	10	1550	≤ 0.03
1	10	1625	≤ 0.1
1	7.5	1550	≤ 0.08
1	7.5	1625	≤ 0.25
1	5.0	1550	≤ 0.15
1	5.0	1625	≤ 0.45

Cutoff Wavelength

Cable Cutoff wavelength (λ_{ccf}) ≤ 1260 nm

Mode Field Diameter

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

Chromatic Dispersion

Wavelength (nm)	Chromatic Dispersion (ps/[nm.km])
Zero Dispersion Wavelength (λ ₀):	1300 - 1324 nm
Slope (S ₀) at λ ₀ :	≤ 0.092 ps/(nm ² .km)

Polarization Mode Dispersion (PMD)

PMD Link Design Value** (ps√km)	≤ 0.06
Max. Individual Fiber (ps√km)	≤ 0.1

** According to IEC 60794-3, Ed 3 (Q=0.01%)

Geometrical Specifications

Glass Geometry

Cladding Diameter	125.0 ± 0.7 μm
Core/Cladding Concentricity Error	≤ 0.5 μm
Cladding Non-Circularity	≤ 0.7 %
Fiber Curl (Radius)	≥ 4 m

Coating Geometry

Coating Diameter	242 ± 7 μm
Coating/Cladding Concentricity Error	≤ 12 μm
Coating Non-Circularity	≤ 5 %
Length	Standard lengths up to 25.2 km

Mechanical Specifications

Proof Test

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

Tensile Strength

Dynamic tensile strength (0.5 meter gauge length):

Aged*** and unaged: median > 3.8 GPa (550 kpsi)

*** Aging at 85°C, 85% RH, 30 days

Dynamic and Static Fatigue

Dynamic fatigue, unaged and aged*** n_d ≥ 20

Static fatigue, aged*** n_s ≥ 23

Coating Performance

Coating strip force unaged and aged****:

- Average strip force: 1 N to 3 N

- Peak strip force: 1.2 N to 8.9 N

**** Aging:

- 0°C and 45°C
- 30 days at 85°C and 85% RH
- 14 days water immersion at 23°C
- Wasp spray exposure (Telcordia)

Environmental Specifications

Attenuation

Environmental Test	Test Conditions	Induced Attenuation at 1310, 1550 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

Typical Values

Miscellaneous

Nominal Zero Dispersion Slope	0.089 ps/(nm ² .km)
Effective group index @ 1310 nm	1.467
Effective group index @ 1550 nm	1.467
Effective group index @ 1625 nm	1.468

Rayleigh Backscatter Coefficient for 1 ns pulse width:

@ 1310 nm	- 79.0 dB
@ 1550 nm	- 81.3 dB
@ 1625 nm	- 82.0 dB

Median Dynamic Tensile Strength 5.3 GPa (750 kpsi)

(Aged at 85°C, 85% RH, 30 days; 0.5 m gauge length)