BendBright™ A2 200
Bend Insensitive Single Mode Fiber

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Overview

BendBright A2 200 fiber delivers the extraordinary bend performance of a G.657.A2 fiber, while splicing seamlessly with G.652 and G.657.A1 fibers. This unique feature is achieved through an innovative core profile that has the same mode field diameter as a standard G.652 fiber. BendBright A2 200 provides exceptional bend performance for demanding applications where A1 fibers fall short. BendBright A2 200 fiber meets and exceeds the requirements of ITU G.657.A2 and G.652D and is rated for a minimum bend radius of 7.5 mm.

With a smaller 200 um coating diameter, BendBright™ A2 200 allows cable designers to drastically reduce cable diameters for most OSP cable designs. This feature not only increases fiber density in ducts, it reduces size & weight of aerial cables and it allows designers to increase fiber density in microduct and FlexRibbon designs.

This latest addition to the BendBright portfolio further exemplifies its commitment to enabling fiber densification for the optical networks of tomorrow.

Features and Benefits

Reduced Coating Diameter
- Reduction of cable diameter.
- Increased fiber counts in 1, 1 ¼, 1 ½, and 2" conduits.
- Increased fiber counts in microduct applications.
- Reduction of fiber management systems footprint.

Same glass and diameter (125 um) as standard BendBright™ A2
- Compatible with standard cleaving and stripping tools.
- Can be single fiber spliced with similar fusion splice program settings as BendBright™A2 or other G.657.A1 and G.652 fibers.
- Low loss splicing to BendBright™ XS and other G657.A1 or G652.D fibers.

Low bending losses
- Specified down to a 7.5 mm bend radius; 1 turn loss ≤ 0.5 dB @ 1550 nm.
- Allows a smaller bend radius with small diameter cables such as patch cords and distribution cables.
- Mitigates losses caused by improper installations.
- Allows the use of smaller splice trays or closures.
- Provides lower bending losses at higher wavelengths such as 1625 nm, which future proofs the network.
- Improves long-term attenuation stability by reducing losses related to temperature cycling and mid-span buffer-tube storage.

Full industry standards compliance
- Fully compliant to both ITU G.657.A2 BIF and G.652.D SMF industry standards.
- Fully compliant to both IEC 60793-2-50 B-657.A2 and B-652.D SMF fiber standards.
- Fully compliant with Telcordia GR20 & GR409.
- Fully compliant with all ICEA fiber cable standards including ICEA 640, 696, & 596.
- Compliant with RUS 7 CFR 1755.900 fiber requirements.

Full backward ITU G.652.D SMF compatibility
- Compliant with ITU G.652.D and IEC 60793-2-50 B-652.D low water peak SMF specifications.
- Compatible with equipment designed for G.652 fibers; fully transparent from a transmission perspective.
- Splice compatible with ITU G.652 SMF using standard single mode fiber machine settings.
- Full 1260-1625 nm low water peak compliance.

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Performance Specifications (Uncabled Fiber)

Attenuation vs. Wavelength	
1285 nm to 1330 nm	= α_{1310} ± 0.03 dB/km
1525 nm to 1575 nm	= α_{1550} ± 0.02 dB/km

Polarization Mode Dispersion (PMD)	
Max. Value In Uncabled Fiber	≤ 0.1 ps/km$^{1/2}$
Link Design Value	≤ 0.04 ps/km$^{1/2}$

Optical Parameters	
Mode Field Diameter @ 1310 nm	9.2 ± 0.4 µm
Mode Field Diameter @ 1550 nm	10.4 ± 0.5 µm
Cabled Cut-Off Wavelength	≤ 1260 nm
Zero Dispersion Wavelength (λ)	1304 nm to 1324 nm
Chromatic Dispersion	
1550 nm	≤ 18.0 ps/(nm*km)
1625 nm	≤ 22.0 ps/(nm*km)
Zero Dispersion Slope	≤ 0.092 ps/(nm^2*km)
Point Discontinuity (1310 & 1550 nm)	≤ 0.05 dB

Attenuation with Bending			
Mandrel Radius (mm)	**Number of Turns**	**Wavelength (nm)**	**Attenuation (dB)**
7.5	1	1625	≤ 1.0
7.5	1	1550	≤ 0.5
10	1	1625	≤ 0.2
10	1	1550	≤ 0.1
15	10	1625	≤ 0.1
15	10	1550	<= 0.03

Dimensional Parameters	
Outer Coating Diameter	200 ± 10 µm
Coating/Cladding Concentricity Error	≤ 10 µm
Cladding Diameter	125.0 ± 0.7 µm
Cladding Non-Circularity	≤ 0.7%
Core-Clad Concentricity	≤ 0.5 µm
Fiber Curl	≥ 4.0 m radius

Mechanical Performance	
Minimum Proof Test	100 Kpsi (0.7 GPa); 1% strain equivalent

Environmental Performance	
Environmental Test	**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, up to 98% RH)	≤ 0.05
Water Immersion (23°C ± 2°C)	≤ 0.05
Accelerated Heat Aging (85°C ± 2°C)	≤ 0.05
Damp Heat (85°C, 85% RH)	≤ 0.05

Performance Characterization	
Effective Group Index of Refraction	@ 1310 nm 1.467 @ 1550 nm 1.468
Fatigue Resistance Parameter (n_d)	20
Rayleigh Backscatter Coefficient (1 ns = pulse width)	@ 1310 nm. -77 dB @ 1550 nm. -82 dB
Core Diameter	8.2 µm

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