

BendBright™ OM4 – BiDi Fiber

OM4–BiDi optimized for Advanced 800G and Terabit BiDi applications



APPLICABLE STANDARDS

- IEC / EN 60793-2-10: type A1-OM4
- ISO / IEC 11801: Category OM4
- TIA / EIA 492 AAAF

Issue Date: August 2024

Supersedes: February 2024

OPTICAL SPECIFICATIONS

BANDWIDTH (EMB)

Attribute	Units	Specified Values
Effective Modal Bandwidth at 850 nm	MHz·km	≥ 4700
Effective Modal Bandwidth at 910 nm	MHz·km	≥ 3100

BANDWIDTH (OFL)

Attribute	Units	Specified Values
Overfilled Modal Bandwidth at 850 nm	MHz·km	≥ 3500
Overfilled Modal Bandwidth at 1300 nm	MHz·km	≥ 500

ATTENUATION

Attribute	Units	Specified Values
Attenuation coefficient at 850 nm	dB/km	≤ 2.3
Attenuation coefficient at 910 nm	dB/km	≤ 1.8
Attenuation coefficient at 1300 nm	dB/km	≤ 0.6

NUMERICAL APERTURE

Attribute	Specified Values
Numerical aperture	0.200 ± 0.015

MACROBENDING LOSS

Conditions	Wavelength	Units	Specified Values
Mandrel Radius = 7.5 mm, 2 Turns	850 / 1300 nm	dB	≤ 0.2 / ≤ 0.5
Mandrel Radius = 15 mm, 2 Turns	850 / 1300 nm	dB	≤ 0.1 / ≤ 0.3

MULTIMODE SYSTEM REACH

IEEE Standard or MSA	Units	Transmission Distance
Terabit BiDi 1.6T-SR8.2	m	100
Terabit BiDi 1.6T-VR8.2	m	70
Terabit BiDi 800G-SR4.2	m	100
Terabit BiDi 800G-VR4.2	m	70
800GBASE-SR8	m	100
800GBASE-VR8	m	50
400GBASE-SR4.2	m	100
400GBASE-SR8	m	100

CHROMATIC DISPERSION

Attribute	Conditions	Units	Specified Values
Zero Dispersion Wavelength, λ_0		nm	$1295 \leq \lambda_0 \leq 1340$
Zero Dispersion Slope, S_0	$1295 \leq \lambda_0 \leq 1310$	ps/[nm ² ·km]	≤ 0.105
	$1310 \leq \lambda_0 \leq 1340$	ps/[nm ² ·km]	$\leq 0.000375 (1590 - \lambda_0)$

BACKSCATTER CHARACTERISTICS ¹

Attribute	Conditions	Units	Specified Values
Point Discontinuity ²	850 nm, 1300 nm	dB	≤ 0.1
Irregularities over fibre length	850 nm, 1300 nm	dB	≤ 0.1
Group Index of Refraction at 850 nm	-	-	1.482 (typical)
Group Index of Refraction at 1300 nm	-	-	1.477 (typical)

¹ OTDR measurement with 0.5 μ s pulse width.

² Mean of bi-directional measurement

GEOMETRICAL SPECIFICATIONS

GLASS GEOMETRY

Attribute	Units	Specified Values
Core Diameter	μ m	50 ± 2.5
Core non-Circularity	%	≤ 5
Core-Cladding Concentricity Error	μ m	≤ 1.0
Cladding Diameter	μ m	125.0 ± 1.0
Cladding non-Circularity	%	≤ 0.7

COATING GEOMETRY

Attribute	Units	Specified Values
Coating Diameter	μm	242 ± 7
Coating non-Circularity	%	≤ 5
Coating-Cladding Concentricity Error	μm	≤ 10

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 ≤ F _{avg-strip} ≤ 3.0
Peak Coating Strip Force, unaged and aged ⁴	N	1.3 ≤ F _{peak-strip} ≤ 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 ≥ 20

⁵ Aging at 85°C, 85% RH, 30 days

ENVIRONMENTAL SPECIFICATIONS

Environmental test	Test Conditions	Induced attenuation at 850, 1300 nm (dB/km)
Temperature Cycling	-60°C to +85°C	≤ 0.1
Temperature - Humidity Cycling	-10°C to +85°C, 4-98% RH	≤ 0.1
Water Immersion	30 days; 23°C	≤ 0.1
Dry Heat	30 days ; 85°C	≤ 0.1
Damp Heat	30 days; 85°C; 85% RH	≤ 0.1

OTHERS

Attribute	Specified Values
Length	8.8 km per spool
Coating	Acrylate Coating (Clear)

All measurements in accordance with ITU-T G650 recommendations

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