

50 µm BendBright™ MMF with High Temperature Acrylate coating (Optimized for temperature range -60°C to 150°C)



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Applicable Standards

- IEC / EN 60793-2-10: type A1-OM2/OM3/OM4/OM5
- ISO / IEC 11801: Category OM2/OM3/OM4/OM5
- TIA / EIA 492 AAAF

Optical Specifications

Bandwidth (OFL)

Attribute	Units	OM2	OM3	OM4	OM5
Overfilled Modal Bandwidth at 850 nm	MHz•km	≥ 500	≥ 1500	≥ 3500	≥ 3500
Overfilled Modal Bandwidth at 1300 nm	MHz•km	≥ 500	≥ 500	≥ 500	≥ 500
Overfilled Modal Bandwidth at 953 nm	MHz•km	-	-	-	≥ 1850

Attenuation

Attribute	Units	Specified Values
Attenuation coefficient at 850 nm	dB/km	≤ 2.5
Attenuation coefficient at 1300 nm	dB/km	≤ 0.7

Numerical Aperture

Numerical aperture	0.200 ± 0.015
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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
Mandrel Radius = 37.5 mm, 100 Turns	850 / 1300 nm	dB	≤ 0.5 / ≤ 0.5

Chromatic Dispersion

Attribute	Units	OM2/OM3/OM4	OM5
Zero Dispersion Wavelength, λ_0	nm	$1295 \leq \lambda_0 \leq 1340$	$1297 \leq \lambda_0 \leq 1328$

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
Reflections	-	-	Not allowed
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	≤ 1.5
Cladding Diameter	μ m	125 ± 1
Cladding non-Circularity	%	≤ 1

Coating Geometry

Attribute	Units	Specified Values
Coating Diameter	μ m	242 ± 7
Coating non-Circularity	%	≤ 5
Coating-Cladding Concentricity Error	μ m	≤ 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	Typical Values
Average Coating Strip Force, unaged and aged ⁴	N	2.7
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	-	$n_d \geq 18$ ⁵ Aging at 85°C, 85% RH, 30 days

Environmental Specifications (Operating Temperature: -60°C to +150°C)

Environmental test	Test Conditions	Induced attenuation at 850, 1300 nm (dB/km)
Temperature Cycling	-60°C to +150°C	≤ 0.2
Temperature - Humidity Cycling	-10°C to +85°C, 4-98% RH	≤ 0.2
Water Immersion	30 days; 23°C	≤ 0.2
Dry Heat	3000 h ; 150°C	≤ 0.2
Damp Heat	30 days; 85°C; 85% RH	≤ 0.2

Others

Length	Up to 8.8 km per spool
Coating	High Temperature Resistant Acrylate Coating (Clear)

All measurements in accordance with ITU-T G650 recommendations