

# Bend Optimized OM1 MMF Fibers

## Bend-insensitive fiber

**Bend optimized OM1 Multimode fiber solution combines superior bend-loss performance with a wide performance value range to allow for most flexible high data transmission at short to medium distances in Local Area Network applications**

This special 62.5/125/242 fiber is specified for use in high-speed laser-based network protocols, as well as networks using LED as signal source. They support fiber-optic network protocols such as Gigabit Ethernet, ATM, Fast Ethernet and lower bit rate networks used in Local Area Networks (LAN), Storage Area Networks (SAN), high-speed parallel interconnects for central offices and local access networks. They fit perfectly for applications as backbone, riser and horizontal in access and premises wiring applications.

### Benefits

- Minimum bend loss in very small bend-radii applications
- Customized bandwidth and link length combinations available for specific applications
- Highest performance meeting current industry standards for Gigabit Ethernet, Fiber Channel and others
- Optimized for use in 850nm and 1300nm applications with lowest attenuation and highest bandwidths
- Guaranteed link lengths for 1Gb/s data rate transmission up to 1000m
- Excellent splicing performance and compatibility with installed fiber base and photonics components

### Standardization and Compliances for GigaGrade

- IEC 60793-2-10
- ITU G651.1
- TIA/EIA 492AAAB-A

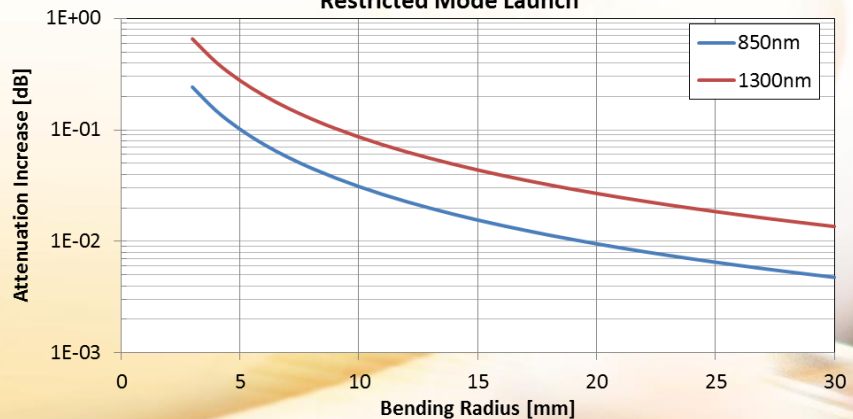
### Bending Performance

Bend Induced Attenuation		Overfilled launch	Restricted mode launch	Unit
100 turns	850 nm	≤ 0.5	≤ 0.1	dB
Radius 37.5 mm	1300 nm	≤ 1.0	≤ 0.2	dB
2 turns	850 nm	≤ 0.2	≤ 0.05	dB
Radius 15 mm	1300 nm	≤ 0.3	≤ 0.1	dB
2 turns	850 nm	≤ 0.6	≤ 0.1	dB
Radius 7.5 mm	1300 nm	≤ 1.0	≤ 0.2	dB

For further information about our Multimode Fiber and other j-fiber products and services, please contact us:

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**Bending Performance j-BendAble OM1, 2 Turns on Mandrel, Restricted Mode Launch**



## Performance Characteristics

		Spec. Value Range	Unit
Bandwidth <sup>1</sup> (Overfilled launch)	850nm	≥ 160 – ≥ 250	MHz·km
	1300nm	≥ 500 – ≥ 800	MHz·km
Transmission Link Lengths at 1Gb/s <sup>1</sup> (Restricted mode launch)	850nm	≥ 300 – ≥ 500	m
	1300nm	≥ 550 – ≥ 1000	m

<sup>1</sup> For both, bandwidth and link lengths special combinations and values are available.

## Optical Characteristics

		Spec. Value Range	Unit
Attenuation Coefficient <sup>1</sup>	850nm	≤ 2.7 – ≤ 2.9	dB/km
	1300nm	≤ 0.6 – ≤ 0.7	dB/km
Attenuation at 1383nm (OH-Peak)		< 2.0	dB/km
Attenuation Discontinuities (OTDR 1300nm)		< 0.05	dB
Chromatic dispersion Zero Dispersion Wavelength $\lambda_0$		$1320 \leq \lambda_0 \leq 1365$	nm
Zero Dispersion Slope, $S_0$	– from $1320 \leq \lambda_0 \leq 1348$	≤ 0.11	ps/nm <sup>2</sup> ·km
	– from $1348 \leq \lambda_0 \leq 1365$	≤ 0.001·(1458 - $\lambda_0$ )	ps/nm <sup>2</sup> ·km
Numerical Aperture		0.275 ± 0.015	
Effective Group Index of Refraction	850nm	1.497	
	1300nm	1.493	

<sup>1</sup> Special attenuation values available upon request.

## Geometrical Characteristics

	Spec. Values	Unit
Core Diameter	62.5 ± 2.5	μm
Core Non-Circularity	≤ 5.0	%
Core/Clad Concentricity Error	≤ 1	μm
Cladding Diameter	125 ± 1	μm
Cladding Non-Circularity	≤ 1.0	%
Coating Diameter <sup>1</sup>	242 ± 7	μm
Coating /Clad Concentricity Error	≤ 10	μm
Standard Lengths	2.2 - 17.6	km

<sup>1</sup> Other coating diameters are available upon request.

## Mechanical Characteristics

	Spec. Values	Unit	
Proof Test	≥ 0.69	GPa	
	≥ 8.8	N	
Dynamic Tensile Strength Unaged Fiber (0.5m)	≥ 3.8	GPa	
		15th Percentile Tensile Strength	≥ 3.3
	Aged Fiber (0.5m)	≥ 3.03	GPa
		15th Percentile Tensile Strength	≥ 2.76
Dynamic Fatigue Stress Corrosion Parameter $n_d$ (typical)	≥ 23		
Operating Temperature Range	-60 to +85	°C	
Coating Strip Force (typical)	1.9	N	

## Environmental Characteristics

	Spec. Values	Unit
	850/1300nm	
Change of Temperature Attenuation increase, -60°C to +85°C	≤ 0.1	dB/km
Dry Heat Attenuation increase, 30 days at 85°C	≤ 0.1	dB/km
Damp Heat Attenuation increase, 30 days at 85°C/85% R.H.	≤ 0.1	dB/km
Water Immersion Attenuation increase, 30 days in 23°C water	≤ 0.1	dB/km

## Coating

j-fiber Multimode optical fiber is protected with our enhanced coating material that guarantees long-term performance and reliability. The dual-layer acrylate material is user-friendly and compatible in all cable constructions, such as tight buffer and loose tube designs with low bending loss. Optimized for multimode fiber, the coating shows lowest microbending sensitivity. The coating is mechanically strippable and leaves no residue. Coating options for special applications are available on request.

## Spool Size

	Size
Spool diameter	9.25"/23.5cm
Spool width	4.21"/10.7cm
Spindle	1"/2.54cm
Traverse width	3.75"/9.5cm

### Environmental friendly Packaging

The shipping spool is designed to safeguard j-fiber optical fiber not only during shipping but also during subsequent handling in the customer's plant. It features smooth inside surfaces to ensure that the fiber is wound on and off the reel without the risk of breaking. The reel barrel is isolated via a polyethylene cover. The inside end of the fiber can be accessed for various measurements while still on the shipping spool. All reels and transport boxes are designed to take advantage of our recycling program.

### Ordering Information

To order the bend optimized OM1 optical fiber please call, fax or email us and specify the following parameters when ordering:

Fiber Type:	Bend optimized OM1 Fiber: 62.5/125/242 $\mu$ m
Desired Attenuation, Bandwidth, Link Length at 1Gb/s:	at 850nm/1300nm
Fiber Quantity:	kms
Other:	desired ship date, reel length, special requests

All fibers and preforms are subject to j-fiber's ongoing process and quality improvement programs ensuring excellent performance and high reliability. We reserve the right to make changes to the above specification without notice.

DB-FHB-001-07-0617 Issued June 2017

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