

# j-BendAble OM4 Multimode Fibers

## Bend-insensitive fiber

### Superior bend-loss performance in OM4 standard compliant high-bandwidth performance for 10 Gb/s Ethernet transmission rates

j-BendAble OM4 Multimode fiber is a bend-insensitive 850 nm laser-optimized 50µm Multimode fiber. It provides for best macrobending performance and supports high-density packaging cables, smallest bend-radii and challenging installation situations in advanced data centers. j-BendAble OM4 fiber enables serial 10 Gb/Ethernet transmission over 550 m. j-BendAble is compatible with all commercially available standard and bend-insensitive 50µm fibers.

### Benefits

- Minimum bend loss in very small bend-radii applications
- 10 Gb/s Ethernet serial transmission with guaranteed OM4 standard compliant optical performance
- Guaranteed OM4 compliance: Effective Modal Bandwidth (EMB)  $\geq 4700$  MHz·km @850nm
- Provides high performance at overfilled launch (OFL) bandwidth  $\geq 3500$  MHz·km @ 850 nm
- Ensures compatibility with currently commercially available bend-insensitive MMF and standard MMF
- Supports compact cable management systems in advanced data center applications
- Supports high fiber count cable manufacturing
- Guarantees reliable system performance by most stringent DMD characterization

### Standardization and Compliances for j-BendAble OM4

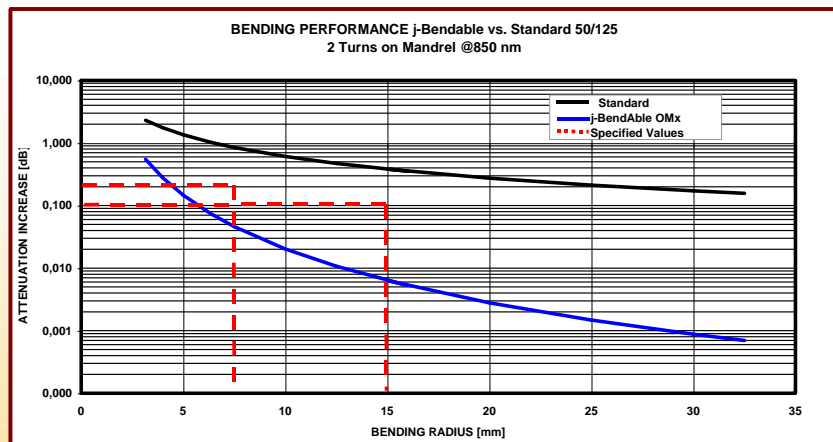
- IEC 60793-2-10
- ITU G651.1
- TIA/EIA 492AAAD
- IEEE 802.3

### Bending Performance

Macrobending Loss / Bend Induced Attenuation		Spec. Values	Unit
100 turns	850 nm	$\leq 0.05$	dB
Radius 37.5 mm	1300 nm	$\leq 0.15$	dB
2 turns	850 nm	$\leq 0.1$	dB
Radius 15 mm	1300 nm	$\leq 0.3$	dB
2 turns	850 nm	$\leq 0.2$	dB
Radius 7.5 mm	1300 nm	$\leq 0.5$	dB

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

**j-fiber GmbH**  
 Im Semmicht 1  
 D-07751 Jena, Germany  
 Tel.: +49-3641-352 100  
 Fax: +49-3641-352 101  
 Email: [info@j-fiber.com](mailto:info@j-fiber.com)  
 Internet: [www.j-fiber.com](http://www.j-fiber.com)



## Performance Characteristics

		Spec. Values	Unit
Bandwidth (Overfilled Launch)	850 nm	≥ 3500	MHz·km
	1300 nm	≥ 500	MHz·km
Effective Modal Bandwidth (EMB)	850 nm	≥ 4700	MHz·km
Transmission Link lengths for 10 Gb/s <sup>1</sup>	850 nm	550	m
	1300 nm	300	m

<sup>1</sup> 850 nm operating wavelength, transmitters meeting encircled flux of ≤ 30% @ radius 4.5 μm and ≥ 86 % @ radius 19.0 μm. At 1300nm link length using LX4.

## Optical Characteristics

		Spec. Values	Unit
Attenuation Coefficient <sup>1</sup>	850 nm	≤ 2.3	dB/km
	1300 nm	≤ 0.7	dB/km
Attenuation at 1383 nm (OH-Peak)		< 2.0	dB/km
Attenuation Discontinuities (OTDR 1300 nm)		< 0.05	dB
Chromatic Dispersion			
Zero Dispersion Wavelength λ <sub>0</sub>		1295 ≤ λ <sub>0</sub> ≤ 1340	nm
Zero Dispersion Slope, S <sub>0</sub>	– from 1295 ≤ λ <sub>0</sub> ≤ 1310	≤ 0.105	ps/nm <sup>2</sup> ·km
	– from 1310 ≤ λ <sub>0</sub> ≤ 1340	≤ 0.000375·(1590-λ <sub>0</sub> )	ps/nm <sup>2</sup> ·km
Numerical Aperture		0.200 ± 0.015	
Effective Group Index of Refraction	850 nm	1.483	
	1300 nm	1.478	

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

## Geometrical Characteristics

	Spec. Values	Unit
Core Diameter	50 ± 2.5	μm
Core Non-Circularity	≤ 5.0	%
Core/Clad Concentricity Error	≤ 1	μm
Cladding Diameter	125 ± 1.0	μm
Cladding Non-Circularity	≤ 1.0	%
Coating Diameter	242 ± 7	μm
Coating /Clad Concentricity Error	≤ 10	μm
Standard Lengths	1.1 - 8.8	km

## Mechanical Characteristics

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

## Environmental Characteristics

	Spec. Values	Unit
	850nm/1300 nm	
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 air cushion 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 our j-BendAble OM4 please call, fax or email us and specify the following parameters when ordering:

Fiber Type:	j-BendAble OM4 50/125/242 $\mu\text{m}$
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-FNB-003-03-0516 Issued May 2016

Supersedes DB-FNB-003-02-0513

Copyright 2016 © j-fiber GmbH with regard to DIN ISO 16016



Officially registered facility according to EWG No1221/2009