

# WideGrade Multimode Fiber 50/125

**j-fiber's extended wavelength window Multimode fiber solution WideGrade 50/125 allows for low cost, high data volume transmission at short to medium distances in Local Area Networks and Fttx applications.**

WideGrade 50/125 fiber is specified for use in network protocols using LED or laser as light source. It supports fiber-optic network protocols such as Gigabit Ethernet and fits perfectly for transmission in access network architectures such as feeder or distribution points as well as in point to point connections.

All fibers 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 specifications without notice.

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Officially registered facility according to EWG No. 761/2001



## Ordering Information

To order j-fiber products please call, fax or email us and specify the following parameters:

Fiber Type:	j-fiber WideGrade Multimode Fiber
Fiber:	kms
Other:	desired ship date, reel length, special requests

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

## j-fiber GmbH

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## Features and Benefits

- Triple play performance for maximum network upgrade potential
- Highest performance meeting/exceeding current industry standards for Gigabit Ethernet, Fiber Channel, FDDI (Fiber Distributed Data Interface), ATM (Asynchronous Transfer Mode)
- Optimized for use in 850nm, 1300nm and 1550nm applications with low attenuation and high bandwidth
- High flexible solution to benefit from low cost LEDs as well as laser as light sources, such as Vertical Cavity Surface Emitting Lasers (VCSELs)
- Excellent splicing performance and compatibility with installed fiber base and photonics components
- Maximum product consistency and reliability through patented j-fiber manufacturing process resulting in low fiber costs

## Performance Characteristics

	Spec.	Value Range	Unit
Bandwidth			
Light source:			
LED, overfilled launch	850nm	≥ 500	MHz·km
assuming a linear relationship	1300nm	≥ 500	MHz·km
	1550nm	≥ 500	MHz·km
Link Lengths at 1Gb/s transmission			
Light source:	850nm	≥ 550	m
Laser, restricted mode launch	1300nm	≥ 550	m
	1550nm	≥ 550	m

## Optical Characteristics

	Spec.	Value Range	Unit
Attenuation Coefficient	850nm	≤ 2.6	dB/km
	1300nm	≤ 0.8	dB/km
	1550nm	≤ 0.7	dB/km
Attenuation at 1383nm (OH-Peak)		< 2.0	dB/km
Attenuation Discontinuities (OTDR 1300nm)		< 0.05	dB/km
Macrobend <sup>1</sup>		≤ 0.5	dB
Numerical Aperture		0.200 ± 0.015	
Effective Group Index of Refraction	850nm	1.483	
	1300nm	1.478	

<sup>1</sup> Bend induced attenuation at 850nm, 1300nm and 1550nm; 100 turns around a mandrel of 75mm diameter

## Geometrical Characteristics

	Spec. Values	Unit
Core Diameter	50 ± 2.5	μm
Core Non-Circularity	≤ 5.0	%
Core/Clad Concentricity Error	≤ 1.5	μm
Cladding Diameter	125 ± 2.0/± 1.0	μm
Cladding Non-Circularity	≤ 1.0	%
Coating Diameter <sup>1</sup>	245 ± 10.0	μm
Coating /Clad Concentricity Error	≤ 10.0	μm
Standard Lengths	2.2/4.4/6.6/8.8	km

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

## Quality Procedure

All j-fiber Multimode fibers comply with or exceed the ITU recommendation G.651 or the IEC 60793-2-10 Optical Fiber Specifications. Each fiber is 100% quality measured according to IEC 60793. Furthermore, the specific fiber is subject to performance measurements with laser light sources and can be supported by DMD control to provide guaranteed link lengths at 1Gb/s transmission rates.

## Process

Optical fibers are manufactured by j-fiber's patented, proprietary technology using a MCVD (Modified Chemical Vapour Deposition) process. This technology allows us to flexibly provide innovative fiber designs according to the customer's own specifications. Our improved patented process results in low attenuation fiber with consistent geometric properties, high strength, and precise control of each fiber's index of refraction. The fiber has a high level of splice compatibility with optical fibers manufactured by other processes.

## Mechanical Characteristics

	Spec. Values	Unit
Proof Test (off line)	≥ 100	kpsi
	≥ 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 $n_d$	≥ 20	
Operating Temperature Range	-60°C to +85°C	
Coating Strip Force (typical)	1.9	N

## Environmental Characteristics

	Spec. Values	Unit
Change of Temperature Attenuation increase, -60°C to +85°C	≤ 0.20	dB/km
Dry Heat Attenuation increase, 30 days at 85°C	≤ 0.20	dB/km
Damp Heat Attenuation increase, 30 days at 85°C/85% R.H.	≤ 0.20	dB/km
Water Immersion Attenuation increase, 30 days in 23°C water	≤ 0.20	dB/km

## 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. Each spool carries product information, including fiber type, measurement data and peel-off bar coding to assist with inventory control. All reels and transport boxes are designed to take advantage of our recycling program.

## Coating

j-fiber Multimode optical fiber is protected with our FCC, an 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 best-in-class low microbending sensitivity. The coating is mechanically strippable and leaves no residue.

### Coating Diameter Options

- Standard: 245μm
- Optional: 500μm
- Customized: info@j-fiber.com

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