

GigaGuide® 50/50 XL Fibers



Laser-certified, high performance 50 micron multimode fiber that combines One Gigabit Ethernet capabilities and full compatibility with standard multimode networks

Higher Bandwidth, Longer Link Lengths at 1 Gb/s Speeds

GigaGuide 50 and 50 XL multimode optical fiber from OFS provides the increased bandwidth and clear transmissions over longer link lengths for today's high-performance networks including Gigabit Ethernet. GigaGuide 50 and 50 XL fibers combine the proven technology of 50 micron multimode fiber, Gigabit Ethernet transmission capability, and full compatibility with your installed 50/125 micron multimode optical fiber base.

GigaGuide 50 fiber is designed to provide transmission distances up to 600 meters at both the 850 nm and 1300 nm windows, while GigaGuide 50 XL fiber extends the maximum distance to 2000 meters at the 1300 nm window. Both GigaGuide fibers exceed the requirements for Institute of Electrical and Electronics Engineers (IEEE) 802.3z Gigabit Ethernet standards. In addition, GigaGuide fiber's low attenuation ensures clear, reliable transmission.



Optimized for Gigabit Ethernet

Like other graded-index multimode fibers in the GigaGuide family, GigaGuide 50 and 50 XL fibers are specifically designed to maximize the potential of the Gigabit Ethernet standard. By increasing transmission speeds to 1,000 Mb/s (1 Gb/s), Gigabit Ethernet architecture provides optimal performance for those sites where even Fast Ethernet speeds are inadequate.

Outstanding Performance With All Light Sources

In Gigabit Ethernet networks, our laser-certified GigaGuide fiber provides outstanding performance with both conventional edge emitting lasers and Vertical Cavity Surface Emitting Lasers (VCSELs). For use with your installed base, GigaGuide 50 and 50 XL fibers are fully compatible with all standard fiber optic network protocols, including Fiber Distributed Data Interface (FDDI), Fast Ethernet and 155 Mb/s Asynchronous Transfer Mode (ATM).

Key Specifications:

Core Diameter:

50 ± 2.5 micron

Clad Diameter:

125 ± 1 micron

Attenuation:

≤ 2.4 dB/km at 850 nm

≤ 0.7 dB/km at 1300 nm

Allows for Gigabit Ethernet operation up to 600 meters at 850 nm and up to 2000 meters at 1300 nm

Fully compatible with standard 50/125 graded index multimode optical fiber

Product Specifications:

GigaGuide fiber meets or exceeds industry standards for fiber specifications.

Physical Characteristics

Core Diameter (µm)	50.0 ± 2.5
Clad Diameter (µm)	125 ± 1
Coating Diameter (µm)	245 ± 10
Core Non-Circularity (%)	≤ 5
Clad Non-Circularity (%)	≤ 1
Core-Clad Offset (µm)	≤ 1.5
Coating Non-Circularity (%)	≤ 5
Clad-Coating Offset (µm)	≤ 6
Standard Proof Test (kpsi)	≥ 100
Standard Reel Lengths (km)	2.2 – 8.8

Optical Characteristics

Attenuation at 850 nm (dB/km)	≤ 2.4
Attenuation at 1300 nm (dB/km)	≤ 0.7
Attenuation Difference 1380 nm - 1300 nm (dB/km)	≤ 1.5
Numerical Aperture	0.20 ± 0.015
Zero Dispersion Wavelength Range (nm)	1297 – 1316
Maximum Dispersion Slope (ps/nm ² •km)	0.101
Macrobend Attenuation (dB/km) 100 turns on a 75 mm mandrel at 850 nm and 1300 nm)	≤ 0.5
Point Discontinuities (dB) at 850 nm and 1300 nm	≤ 0.08

Group Refractive Index

850 nm	1.483
1300 nm	1.479

GigaGuide fiber provides resistance to temperature and humidity extremes.

Environmental Performance

Temperature Induced Attenuation @ 850 nm and 1300 nm from -60° to +85° C (dB/km)	≤ 0.1
Temperature and Humidity Induced Attenuation @ 850 nm and 1300 nm from -10° to +90° C (dB/km), 85% RH 30 day cycle	≤ 0.2

GigaGuide fiber's dual layer UV-cured acrylate coating provides excellent fiber protection and strips cleanly and easily.

Coating Removal Performance

Strip Force, Aged and Unaged (ldf)	0.5 – 1.0 (2.2 – 4.4 N) Typical 0.7 (3.0 N)
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Advanced Processes, Stringent Quality Control

Robust and easy to connectorize, GigaGuide 50 and 50 XL fibers promote ease of installation even under the most stringent conditions. OFS protects the fibers by using a dual-layered, ultraviolet (UV) -cured acrylate coating system that provides excellent protection against temperature and humidity extremes, yet still strips cleanly and easily.

GigaGuide fiber is manufactured at OFS's Multimode Center of Excellence in Sturbridge, Massachusetts, using the company's advanced Inside Vapor Deposition (IVD) technology. Using the IVD process, OFS produces a range of multimode fiber products that offer excellent performance for all transmission protocols. The IVD method enables OFS to precisely control each fiber's index of refraction. Under the restricted launch conditions used in Gigabit Ethernet, this maximizes fiber bandwidth performance at 1 Gb/s speeds.

Like all of OFS's graded index multimode fibers, GigaGuide 50 and 50 XL fibers are tested and proven to exceed the Telecommunications Industry Association (TIA) Fiber Optic Test Procedures (FOTP) and other industry standards.

For additional information please contact your sales representative.

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You can also visit our website at <http://www.ofsoptics.com>.

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Leading Optical Innovations