Lucent Technologies
Bell Labs Innovations

GigaGuide™ 50 XL Optical Fiber

product fact sheet

key specifications

Core diameter: 50 ± 3 micron

Clad diameter: 125 ± 1 micron

Attenuation: ≤ 2.4 dB/km at 850 nm; and ≤ 0.7 dB/km at 1300 nm

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

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

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

GigaGuide™ 50 XL multimode optical fiber from Lucent Technologies provides increased bandwidth over longer link lengths for Gigabit Ethernet and other high-speed networks. GigaGuide 50 XL combines the proven technology of 50 micron multimode fiber, Gigabit Ethernet transmission capability, and full compatibility with your installed 50/125 multimode optical fiber base.

GigaGuide 50 XL is designed to provide transmission distances up to 600 meters at the 850 nm window and 2000 meters at the 1300 nm window, meeting or exceeding the requirements for IEEE 802.3z Gigabit Ethernet standards. GigaGuide 50 XL's low attenuation (≤ 2.4 dB/km at 850 nm and ≤ 0.7 dB/km at 1300 nm) ensures clear, reliable transmissions.

High Performance at Any Speed

Gigabit Ethernet architecture provides optimal performance for those sites where even Fast Ethernet speeds are inadequate. GigaGuide 50 XL is specifically designed to provide long link lengths at 1Gb/s speeds.

Whether you need fiber for a new Gigabit Ethernet installation or to expand your existing multimode network, GigaGuide 50 XL is a wise investment. In Gigabit Ethernet networks, our laser-certified GigaGuide 50 XL 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 XL is fully compatible with all standard fiber optic network protocols including FDDI, Fast Ethernet and 155 Mb/s ATM.

product specifications

GigaGuide™ 50 XL Optical Fiber

GigaGuide meets or exceeds industry standards for fiber specifications.	
Physical Characteristics	
Core diameter (µm)	50 ± 3
Clad diameter (µm)	125 ± 1
Coating diameter (µm)	245 ± 10
Core non-circularity (%)	≤ 5
Clad non-circularity (%)	≤ 2
Core-clad offset (µm)	≤ 3
Clad-coating offset (µm)	≤ 6
Standard prooftest (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
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) 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 provides resistance to temperature and humidity extremes.	
Environmental Performance	
Maximum induced attenuation @ 850 nm and 1300 nm from -60°C to +85°C (dB/km)	≤ 0.20
Maximum induced attenuation @ 850 nm and 1300 nm from -10°C to +85°C, 85% RH 30 day cycle (dB/km)	≤ 0.20
GigaGuide's dual layer UV-cured acrylate coating provides excellent fiber protection and strips cleanly and easily.	
Coating Removal Performance	
Typical dry strip force (lb_f)	≤ 0.6
Typical wet strip force (lb_f)	≤ 0.6

Advanced Processes, Stringent Quality Control

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

GigaGuide 50 XL is manufactured at Lucent's Multimode Center of Excellence (Sturbridge, Massachusetts) using the company's advanced Inside Vapor Deposition (IVD) technology. Using the IVD process, Lucent produces a range of multimode fiber products that offer excellent performance for all transmission protocols. The IVD method enables Lucent to precisely control each fiber's index of refraction. Under the restricted launch conditions used in Gigabit Ethernet, this maximizes fiber bandwidth performance at 1Gb/s speeds.

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

For more information about GigaGuide 50 XL and Lucent's other multimode optical fiber products, contact:

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