

The Optimal 50 Micron Multimode Fiber for 1 Gigabit Ethernet Transmission, with Performance to 750 Meters and Full Compatibility with Legacy Systems.

Overview

Designed for high-speed local area network applications, LaserWave® G+ Fiber provides higher bandwidth and reliable Gigabit Ethernet transmission at distances up to 750 meters. LaserWave G+ Fiber is the industry's most cost-effective solution for 1 Gb/s transmission.

Product Description

DMD-controlled and measured for performance with laser light sources, LaserWave G+ Fiber is specifically designed to maximize the potential of the Gigabit Ethernet standard. In fact, LaserWave G+ Fiber exceeds the requirements of Gigabit Ethernet standards established by the Institute of Electrical and Electronic Engineers (IEEE).

LaserWave G+ Fiber also delivers 10 Gb/s application support up to 150 meters at 850 nm. It can be used in premise and campus installations for longer distance 1 Gb/s applications and shorter reach 10 Gb/s 850 nm applications (for standard and extended-reach 10 Gb/s applications, choose OFS' LaserWave 300 and 550 Fibers). For maximum network performance, reliability, and design flexibility, LaserWave Fibers used in low-loss cabling systems can support extended reach beyond the rated length, as well as more connections and greater power margins.

This laser-optimized fiber provides outstanding reliability with low-cost Vertical Cavity Surface Emitting Lasers (VCSELs). LaserWave G+ Fiber is fully compatible with standard network protocols such as Fiber Distributed Data Interface (FDDI), Fast Ethernet, and 155 Mb/s Asynchronous Transfer Mode (ATM).

Applications

LaserWave G+ Fiber is designed for 1 Gb/s transmission in campus backbone, riser, and horizontal applications. It supports 1000BASE-SX to 750 meters to permit the use of the lowest cost and most popular 850 nm VCSEL transceivers. It also offers short reach 10 Gb/s capability in interconnects to 150 meters, ideal for Internet data centers, equipment rooms and short building backbones.

Features/Benefits:

- Superior geometric tolerances and very low attenuation
- Enables minimal connection loss and low cabled attenuation
- DMD-tested for higher reliability at longer link lengths
- Allows Gigabit Ethernet operation up to 750 meters at 850 nm and 10 Gb/s operation up to 150 meters at 850 nm.

Flex-10™ Coating for Multimode Fiber

OFS multimode fibers are made with a world-class draw process and our enhanced Flex-10 coating, designed to minimize induced attenuation that can occur in tight-buffer cable. Easy to strip and install, the coating offers outstanding performance in attenuation-sensitive 1 Gb/s and 10 Gb/s systems.

Product Specifications

DMD Performance Assured

OFS measures and controls DMD on all LaserWave Fibers to ensure reliable system performance to rated distances for 1 and 10 Gb/s systems. DMD testing enables LaserWave G+ Fiber to achieve longer link lengths.

Manufacturing and Quality Control

LaserWave G+ Fiber is manufactured at OFS' Multimode Center of Excellence in Sturbridge, Mass. using the company's advanced Modified Chemical Vapor Deposition (MCVD) technology. The MCVD process enables OFS to precisely control each fiber's index of refraction across the core, including the core's center region.

Robust and easy to connectorize, LaserWave G+ Fiber promotes ease of installation even under the most stringent conditions. OFS protects the fibers with Flex-10 coating, a dual-layered acrylate coating system that provides the industry's best protection against water, temperature and humidity.

For additional information please contact your sales representative.

You can also visit our website at: www.ofsoptics.com/ofsfiber or call 1-888-fiberhelp (from inside the USA).

For regional assistance, contact the global location closest to you.



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Physical Characteristics	50/125
Core Diameter	50 ± 2.5 µm
Core Non-Circularity	≤ 5 %
Clad Diameter	125 ± 1 µm
Clad Non-Circularity	≤ 1 %
Core/Clad Concentricity Error (Offset)	≤ 1.0 µm
Coating Diameter	245 ± 10 µm
Coating Non-Circularity	≤ 5 %
Coating-Clad Concentricity Error (Offset)	≤ 8 µm
Tensile Proof Test	100 kpsi (0.69 GPa)
Coating Strip Force	Range: 0.5 - 1.0 lbf (2.2 - 4.4 N) Typical: 0.7 lbf (3.0 N)
Standard Reel Lengths	2.2 – 8.8 km

Optical Characteristics

Attenuation	
at 850 nm	≤ 2.3 dB/km
at 1300 nm	≤ 0.6 dB/km
Overfilled Bandwidth	
at 850 nm	≥ 700 MHz-km
at 1300 nm	≥ 500 MHz-km
Laser Bandwidth/EMB	
at 850 nm	≥ 950 MHz-km
at 1300 nm	≥ 500 MHz-km
Transmission Distance (Link Length) Support	
Gigabit Ethernet at 850 nm	750 meters
Gigabit Ethernet at 1300 nm	600 meters
10 Gigabit Ethernet at 850 nm	150 meters
Attenuation 1380 nm minus attenuation at 1300 nm	≤ 1.0 dB/km
Attenuation Uniformity / Point Discontinuities at 850 nm and 1300 nm	≤ 0.08 dB
Numerical Aperture	0.20 ± 0.015
Chromatic Dispersion	
Zero Dispersion Wavelength (λ_0)	1295 – 1340 nm
Zero Dispersion Slope (S_0)	≤ 0.105 ps/nm ² -km (1295 ≤ λ_0 ≤ 1310 nm) ≤ 0.000375 x (1590 – λ_0) (1310 ≤ λ_0 ≤ 1340 nm)
Group Refractive Index	
at 850 nm	1.483
at 1300 nm	1.479
Backscatter Coefficient	
at 850 nm	-68.4 dB
at 1300 nm	-75.8 dB
Macrobend Attenuation	
100 turns on a 75 mm mandrel at 850 nm and 1300 nm	≤ 0.5 dB

Environmental Characteristics

Operating Temperature Range	-60° C to +85° C
Temperature Induced Attenuation at 850 nm and 1300 nm from -60° C to +85° C (5 24-hour cycles)	≤ 0.1 dB/km
Temperature and Humidity Induced Attenuation at 850 nm and 1300 nm from -10° C to +85° C, 94% RH (30 24-hour cycles)	≤ 0.1 dB/km
Accelerated Aging (Temperature) Induced Attenuation at 85° C for 30 days	≤ 0.1 dB/km
Water Immersion Induced Attenuation, 23° C for 30 days	≤ 0.1 dB/km
Dynamic Fatigue Stress Corrosion Parameter (n_d)	≥ 18

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