

Part No. GIMM50



Cable Description

Graded-Index Multimode Optical Fiber (50/125 μm)

Uninet 50/125 μm multimode fiber is a graded index multimode optical fiber with a 50 μm core diameter and a 125 μm cladding diameter. The optical fiber is comprehensively optimized for performance at the 850 nm and 1300 nm operating wavelengths. The fiber has the highest bandwidth and lowest attenuation, which is satisfying the use at 850 nm and 1300 nm. Uninet 50/125 μm multimode fiber is designed and manufactured according to most advanced level in the world.

Application

Due to the low attenuation and high bandwidth, Uninet 50/125 μm multimode fiber can be widely applied in local area networks (LAN), video, voice and data services. It's specially suited to Gigabit Ethernet (IEEE 802.3z) using laser or light emitting diode (LED) sources. Because of the advantages of the manufacturing process (PCVD), such as extremely refined refractive index (RI) profile control, stability, etc., Uninet 50/125 μm multimode fiber offers the highest bandwidth available in the market. Uninet 50/125 μm multimode fiber is applicable in all cable type including ribbon cable, loose tube stranded cable slotted core cable, unitube cable and tight-buffer cable. Uninet optical fibers are compatible with fibers manufactured with other processes.

Process and Coating

Uninet fibers are manufactured using the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Because of the inherent advantages of the process, Uninet fibers show extremely refined refractive index (RI) profile control, excellent geometrical performance, low attenuation, etc.

The optical fiber is coated with a double layer UV curable acrylate, type DLPC9, which gives the fiber a good protection. Designed for more stringent tight-buffer cable application, the fiber also performs perfectly in loose buffer constructions and demonstrates a high resistance to micro-bending. The coating offers an excellent stable coating strip force over a wide range of environmental conditions and the coating stripping leaves no residues on the bare glass fiber. Ribbon tests show excellent performance in 60 $^{\circ}\text{C}$ water soak tests, exceeding 100 days. The DLPC9 coated optical fibers show high and stable values for dynamic stress corrosion susceptibility parameter (nd), which offers a greatly improved applicability to the fiber when used in harsh environments.

Cable Characteristic

- Designed for use at 850 nm and 1300 nm
- Low attenuation and high bandwidth, which overfills the transmission demand of IEEE 802.3z Gigabit Ethernet
- DLPC9 coating offering good protection and excellent strip force stability

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Cable Norms

Uninet 50/125 μm multimode fiber complies with or exceeds the ITU Recommendation G.651 Optical Fiber Specification. Uninet tightens many parameters of fiber products so as to offer more conveniences to customers.

Fiber Core Performance

Characteristics	Conditions	Specified Values			Units
		A	B	C	
Optical characteristics					
Attenuation	850 nm	≤2.3	≤2.5	≤2.7	[dB/km]
	1300 nm	≤0.55	≤0.70	≤0.80	[dB/km]
Overfilled Modal Bandwidth	850 nm	≥500	≥400	<400	[MHz·km]
	1300 nm	≥1000	≥800	<800	[MHz·km]
Numerical Aperture (NA)		0.2±0.015			
Group index of refraction (Typical)	850 nm	1.482			
	1300 nm	1.477			
Backscatter characteristics					
		1300 nm			
Step (mean of bidirectional measurement)		≤0.10			[dB]
Irregularities over fiber length and point discontinuity		≤0.10			[dB]
Difference backscatter coefficient (bidirectional measurement)		≤0.08			[dB/km]
Geometrical characteristics					
Core diameter		50±2.5			[μm]
Cladding diameter		125.0±1.0			[μm]
Cladding non-circularity		≤1.0			[%]
Coating diameter		242±7			[μm]
Coating/cladding concentricity error		≤12.0			[μm]
Coating non-circularity		≤6.0			[%]
Core/cladding concentricity error		≤1.5			[μm]
Delivery length		≥1.1	≤17.6		[km/reel]
Environmental characteristics					
		850 nm, 1300 nm			
Temperature dependence Induced attenuation	-60°C to +85°C	≤0.10			[dB/km]
Temperature-humidity cycling Induced attenuation	-10°C to +85°C, 90% R.H.	≤0.20			[dB/km]
Damp heat dependence Induced attenuation	85°C, 85% R.H., 30 days	≤0.20			[dB/km]
Water soak dependence Induced attenuation	20°C for 30 days	≤0.20			[dB/km]

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Table Content Continued:

Mechanical characteristics				
Proof test	off line		≥9.0 ≥1.0 ≥100	[N] [%] [KPSI]
Bending Dependence Induced Attenuation	850 nm, 1300 nm 100 turns, 75 mm diameter		≤0.50	[dB]
Coating strip force	typical average force peak force	≥1.3 ≥1.3	1.7 ≤8.9	[N]
Dynamic stress corrosion susceptibility parameter (nd, Typical)			≥27	[N]