TIA/EIA-492AAA

Technical Data Sheet

Multi-mode Optical Fiber

Standard 62.5/125 μm fiber

1. General

This specification covers the design requirements and performance standards for the optical fiber described below. This fiber is used in the optical cables. The features described in this document are intended to provide information on the performance of the optical fiber and aid in handling and use. Refer to the appropriate cable specification for details regarding the finished cable's performance.

1.1 Fiber Description

The standard Multimode (MM) optical fiber used is a graded index fiber with glass core, glass cladding and dual acrylate protective coatings. This Type Ia TIA specified fiber is optimized for operation at both 850 and 1300 nm transmission windows. It is fully compatible with commercially available splicing and connector products and can be spliced to other commercially available 62.5 μm MM fibers. The 62.5 μm MM fiber is ideal for data and local area networks.

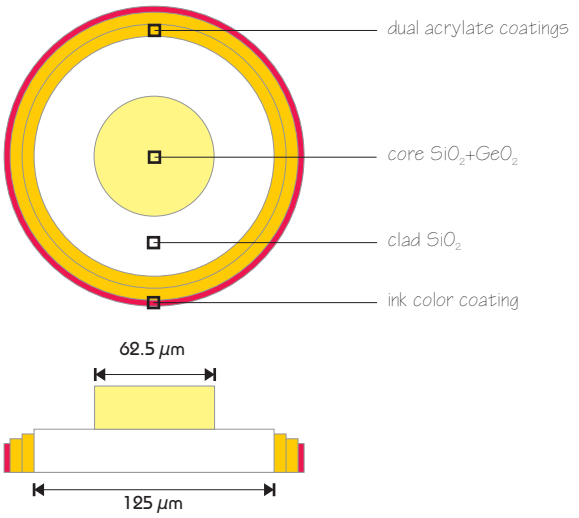
1.2 Quality

4SProducts ensures a continuing level of quality in our optical fiber products through multiple programs including ISO 9000. Quality product is guaranteed and is evident in the optical fiber cable products supplied by 4SProducts.

1.3 Reliability

4SProducts ensures product reliability through rigorous qualification testing of each product family to meet or exceed industry standards. Both initial and periodic qualification testing are performed to assure the fiber's performance and durability in the field environment.

Fiber cut-away



2. Fiber Design

Only the highest quality Multi-Mode fibers in our cables 62.5 μm Multimode (MM) optical fiber manufactured by the Modified Chemical Vapor Deposition (MCVD). This high quality glass has excellent geometry, high strength characteristics, high bandwidth, and low attenuation. The MM fiber is fully compatible with other commercially available MM fibers and is optimized for transmission at 850 and 1300 nm wavelengths.

The 62.5 μm MM fiber is a graded index design. It's optical properties are achieved through a Germanium doped silica based core with a pure silica cladding. A dual acrylate protective coating is applied over the glass cladding to provide the necessary bending and tensile strength required for handling in the field and to ensure maximum fiber lifetime through increased reliability.

3. Testing & Inspection

The optical properties of all fibers are measured prior to cable manufacturing with bi-directional OTDR and remain traceable through-out the manufacturing process and the lifetime of the cable. After cabling, 100% of all fibers in each length of cable are measured at all operating wavelengths. The attenuation for each fiber is recorded.

4621 Ponce de Leon Boulevard
Coral Gables, FL 33146, USA
[1] 305.666.7474
[1] 305.666.7272 fax
cable@4SProducts.com e-mail

4SProducts
Optical Fiber Specifications

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Fiber Construction	Property	Test procedure	Specification
Core (Glass)	Diameter Non-circularity Core/Cladding offset	EIA/TIA-455-58 EIA/TIA-455-45 EIA/TIA-455-45	62.5 ± 3.0 μm ≤5 % ≤3 μm
Cladding (Glass)	Diameter Non-circularity	EIA/TIA-455-45 EIA/TIA-455-45	125 ± 1.0 μm <2.0%
Coating (Buffer)	Material Inked diameter	 EIA/TIA-455-55	UV-acrylate 250 ± 15 μm

Optical Characteristics	Property	Test procedure	Specification
Maximum individual fiber attenuation @ 850 / 1300 nm		EIA/TIA-455-61	3.4 / 1.0 dB/km
Point discontinuities @ 1300 nm		EIA/TIA-455-59	≤ 0.10 dB
Attenuation change vs. wavelength	800 to 900 nm 1250 to 1350 nm	EIA/TIA-455-46	≤ 1 dB/km ≤ 0.2 dB/km
Attenuation change vs. bending	100 wraps / 75 mm	EIA/TIA-455-62	≤ 0.5 dB
Minimum bandwidth	850 nm 1300 nm	EIA/TIA-455-30	200 MHz-km 500 MHz-km
Numerical aperture		EIA/TIA-455-177	0.275± 0.015
Group index of refraction	850 nm 1300 nm	EIA/TIA-455-44	1.496 1.491

Mechanical Characteristics	Property	Test procedure	Specification
Proof test stress		EIA/TIA-455-31	100 kpsi (0.69 GPa)
Maximum bend radius	During installation During service		16.0 mm 37.5 mm