



Member of LEONI Group

Singlemode Optical Fiber 09/125

j-fiber's Standard Singlemode fiber is the clear choice when quality, value and performance is required in optical networks. Our Singlemode fiber is deployed globally in short and long haul applications for telephony, CATV and utility networks transmitting voice, data and video while ensuring compatibility with the installed system base.

j-fiber Singlemode fiber provides industry leading performance in overall optical, mechanical and geometrical performance. It features low dispersion and is specified for use in both 1310nm and 1550nm wavelength operation. This makes it the fiber of choice to take advantage of today's high capacity, low-cost transmission components developed for the 1310nm and 1550nm operation.

Features and Benefits

- Globally deployed
- Fully compatible to worldwide standards, meets or exceeds: ITU-T Recommendation G.652 B, TIA/EIA 492 CAAA, EN/IEC 60793-2-50, and GR 20 CORE requirements
- Specified for use in 1310nm and 1550nm applications
- Features low dispersion at 1310nm and low PMD values, ideal for high transmission rate applications
- Effective use with TDM and WDM systems operating in 1550nm wavelengths region
- Excellent splicing performance and compatibility with installed fiber base and photonics components
- Proven product consistency and reliability through our patented MCVD based process manufacturing technology

Coating

j-fiber Singlemode optical fiber is protected with FCC, an enhanced coating material that guarantees long-term performance and reliability. This dual layer acrylate material is user friendly and compatible in all cable constructions, such as tight buffering, loose tube, ribbon and slotted core designs with low bending loss. The coating is mechanically strippable without leaving residue.

Outside Diameter

Standard: 245 μ m

Optional: 500 μ m

For further information about our Singlemode Fiber and other j-fiber products and services, please contact us:

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Process

All optical fibers are manufactured by j-fiber's proprietary technology. Our process allows us to provide innovative fiber designs according to the customer's exact specifications and requirements. Our improved process results in low attenuation fiber with consistent geometric properties and high strength.

Optical Characteristics

| | | Spec. Value Range | Unit |
|---|---------------|---------------------------|------------------------|
| Attenuation Coefficient ¹ | 1310nm | ≤ 0.34 – ≤ 0.37 | dB/km |
| | 1550nm | ≤ 0.20 – ≤ 0.24 | dB/km |
| Attenuation Variance Range ² | 1285 – 1330nm | ≤ 0.05 | dB/km |
| | 1530 – 1570nm | ≤ 0.05 | dB/km |
| Attenuation at the Water Peak | 1383nm ± 3nm | ≤ 1.00 | dB/km |
| Mode Field Diameter | 1310nm | 9.2 ± 0.4 | μm |
| | 1550nm | 10.5 ± 0.8 | μm |
| Point Discontinuity (tp=1 μs) | 1310nm | ≤ 0.10 | dB |
| | 1550nm | ≤ 0.10 | dB |
| Attenuation Uniformity | | ≤ 0.05 | dB |
| Macrobending Loss Bend Induced attenuation, 100 turns around a mandrel of 50mm diameter | 1310nm | ≤ 0.05 | dB |
| | 1550nm | ≤ 0.10 | dB |
| | 1550nm | ≤ 0.50 | dB |
| 1 turn around a mandrel of 32mm diameter | 1550nm | ≤ 0.50 | dB |
| Fiber Cut-off Wavelength λ_c | | 1190 – 1330 | nm |
| Zero Dispersion Wavelength λ_0 | | 1300 ≤ λ_0 ≤ 1324 | nm |
| Zero Dispersion Slope S_0 | | ≤ 0.092 | ps/nm ² ·km |
| Chromatic Dispersion | 1270 – 1340nm | ≤ 5.00 | ps/nm·km |
| | 1285 – 1330nm | ≤ 3.50 | ps/nm·km |
| | 1550nm | ≤ 18.00 | ps/nm·km |
| Effective Group Index of Refraction | 1310nm | 1.467 | |
| | 1550nm | 1.467 | |
| Polarization Mode Dispersion Link Value ³ Individual Fiber ⁴ | | ≤ 0.10 | ps/√km |
| | | ≤ 0.20 | ps/√km |

¹ Special Attenuation cells available upon request

² Fiber attenuation in specified ranges doesn't exceed nominal values @ 1310/1550nm by more than this values.

³ M=20, Q=0.01%

⁴ Individual values may change when cabled

Quality Procedure

All fibers comply with or exceed the ITU recommendation G.652.B, IEC 60793-2-50 and GR-20-Core optical fiber specifications.

Each fiber is 100% quality measured according to ITU recommendations G.650 and IEC 60793-1.

Environmental Friendly Packaging

The shipping spool is designed to safeguard j-fiber optical fiber not only during shipping but also during subsequent handling in the customer's plant. It features smooth inside surfaces to ensure that the fiber is wound on and off the reel without the risk of breaking. The reel barrel is isolated via a polyethylene cover. The inside end of the fiber can be accessed for various measurements while still on the shipping spool. Each spool carries product information, including fiber type, measurement data and peel-off bar coding to assist with inventory control. All reels and transport boxes are designed to take advantage of our recycling program.

Spool Sizes

| | small | large |
|----------------|--------------|--------------|
| Fiber length | < 25.2km | > 25.2km |
| Spool diameter | 9.25"/23.5cm | 10.4"/26.4cm |
| Spool width | 4.21"/10.7cm | 6.65"/16.9cm |
| Spindle | 1"/2.54cm | 1"/2.54cm |
| Traverse width | 3.75"/9.5cm | 5.9"/15.0cm |

Geometrical Characteristics

| | Spec. Values | Unit |
|----------------------------------|------------------------|------|
| Core/Clad Concentricity Error | ≤ 0.8 | μm |
| Cladding Diameter | 125 ± 1.0 ¹ | μm |
| Cladding Non-Circularity | ≤ 1.0 | % |
| Coating Diameter | 245 ± 5.0 | μm |
| Coating/Clad Concentricity Error | ≤ 10.0 | μm |
| Fiber Curl Radius | ≥ 2.0 | m |
| Standard Lengths | 2.2 - 50.4 | km |

¹ other tolerances are available upon request

Mechanical Characteristics

| | Spec. Values | Unit |
|---|----------------|------|
| Proof Test | ≥ 100 | kpsi |
| | ≥ 8.8 | N |
| | ≥ 0.7 | GPa |
| Dynamic Tensile Strength Unaged Fiber (0.5m) | ≥ 3.8 | GPa |
| Median Tensile Strength | | |
| 15th Percentile Tensile Strength | | |
| Aged Fiber (0.5m) | ≥ 3.03 | GPa |
| Median Tensile Strength | | |
| 15th Percentile Tensile Strength | | |
| Dynamic Fatigue Stress Corrosion Parameter n_d | ≥ 20 | |
| Operating Temperature Range | -60°C to +85°C | |
| Coating Strip Force (typical) | 1.9 | N |

Environmental Characteristics

| | Spec. Values | Unit |
|---|----------------|-------|
| | at 1310/1550nm | |
| Change of Temperature Attenuation increase, -60°C to +85°C | ≤ 0.05 | dB/km |
| Dry Heat Attenuation increase, 30 days at 85°C | ≤ 0.05 | dB/km |
| Damp Heat Attenuation increase, 30 days at 85°C/85% R.H. | ≤ 0.05 | dB/km |
| Water Immersion Attenuation increase, 30 days in 23°C water | ≤ 0.05 | dB/km |

Ordering Information

To order j-fiber Singlemode optical fiber please call, fax or email us and specify the following parameters when ordering:

| | |
|----------------------|---|
| Fiber Type: | Singlemode Fiber 09/125/245μm |
| Desired Attenuation: | at 1310nm/1550nm |
| Fiber Quantity: | kms |
| Other: | desired ship date, reel length, special requests |

All fibers and preforms are subject to j-fiber's ongoing process and quality improvement programs ensuring excellent performance and high reliability. We reserve the right to make changes to the above specification without notice.

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