j-fiber Jena

Member of LEONI Group

IG - 09/125/245 - HTC 200

j-fiber's industry leading Singlemode fiber solution for reliable operation in high temperature areas to allow for highest data volume transmission at long distances in a variety of applications.

The application of optical fibers in demanding environments, such as in mining, industry, aerospace, military and transportation requires a maximum protection of the fiber at high temperatures. Especially designed for production of cables with high temperature stability j-fiber offers its Singlemode fiber with an extended operating temperature range. It features low dispersion and is specified for use in both 1310nm and 1550nm wavelengths, all other optical characteristics comply to ITU-T G.652.B. The coating material safeguards the fiber in environments with temperature ranges from as low as –60°C up to 200°C.

Features and Benefits

- j-fiber HTC200 - High Temperature Coating for reliable operation in harsh environments
- Optimized for use in 1310nm and 1550nm applications with lowest attenuation values
- Features low dispersion at 1310nm and low PMD values, ideal for high transmission rate applications
- SMF with Low Water Peak according to G.652.D available upon request
- Excellent splicing performance and compatibility with installed fiber base and photonics components

Application

- Fiber Optic Sensors
- Data Transmission in harsh environments
- Data Communication in harsh environments

Optical Performance

		Spec. Value Range	Unit
Attenuation Coefficient	1310nm	≤ 0.35 – ≤ 0.38	dB/km
	1383nm	≤ 1.00	dB/km
	1550nm	≤ 0.21 – ≤ 0.25	dB/km
Mode Field Diameter	1310nm	9.2 ± 0.4	µm
	1550nm	10.5 ± 0.8	µm
Fiber Cut-off Wavelength λc		1190 - 1330	nm
Zero Dispersion Wavelength λo		1300 ≤ λo ≤1324	nm
Zero Dispersion Slope So		≤ 0.092	Ps/nm^{2}km
Effective Group Index of Refraction	1310nm	1.467	
	1550nm	1.467	

Ordering Information

To order j-fiber products please call, fax or email us and specify the following parameters:

Fiber Type:	j-fiber Singlemode Fiber 09/125/245µm HTC 200 Extended Operating Temperature Range
Desired Attenuation:	at 1310nm / 1383nm / 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 enclosed specifications without notice.

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Officially registered facility according to EWG No. 761/2001

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

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Geometrical Characteristics

	Spec. Values	Unit
Core/Clad Concentricity Error	≤ 0.8	μm
Cladding Diameter	125.0 ± 1.0	μm
Cladding Non-Circularity	≤ 1.0	%
Coating Diameter	245.0 ± 10.0	μm
Coating/Clad Concentricity Error	≤ 10.0	μm
Lengths	Custom lengths up 25km per reel	km

Environmental Characteristics

	Spec. Values	Unit
	at 1310/1550nm	
Change of Temperature Attenuation increase, -60°C to+150°C	≤ 0.05	dB/km
Dry Heat Attenuation increase, 30 days at 150°C	≤ 0.05	dB/km
Damp Heat Attenuation increase, 30 days at 85°C/85% R.H.	≤ 0.05	dB/km

Mechanical Characteristics

	Spec. Values	Unit
Proof Test	≥ 100 ≥ 8.8	Kpsi N
Dynamic Tensile Strength Unaged Fiber (0.5m) Median Tensile Strength 15th Percentile Tensile Strength Aged Fiber (0.5m) Median Tensile Strength 15th Percentile Tensile Strength	 ≥ 3.8 ≥ 3.3 ≥ 3.03 ≥ 2.76	 GPa GPa GPa GPa
Dynamic Fatigue Stress Corrosion Parameter n_d	 ≥ 20	
Coating Strip Force (typical)	3.2	N

Quality Procedure

j-fiber Singlemode 09/125/245 HTC 200 optical fiber complies with or exceeds the ITU recommendation G.652.B or the IEC 60793-2-50 Optical Fiber Specifications. Each fiber is 100% quality measured according to IEC 60793.

Manufacturing Process

Optical fibers are manufactured by j-fiber's proprietary technology using a MCVD (Modified Chemical Vapour Deposition) process for preform fabrication. This technology allows us to flexibly provide innovative fiber and preform designs according to the customer's own specifications. Our established process results in low attenuation fiber with consistent geometric properties, high strength, and precise control of each fiber's index of refraction. The fiber has a high level of splice compatibility with optical fibers manufactured by other processes.

HTC 200 Coating

j-fiber Singlemode 09/125/245 HTC 200 optical fiber is protected with our HTC 200 / FCC-28, a specially developed coating material that guarantees long-term performance and reliability at high and low temperature applications. The dual layer material is user friendly and compatible in all cable constructions, such as tight buffer and loose tube designs with low bending loss. The coating is mechanically strippable and leaves no residue.

Coating Description

	Spec. Values	Unit
Coating Material	High Temperature Polymer	
Coating ID	HTC 200 / FCC28	
Operating Temperature Range	- 60 to +200	°C
Short term (up to 7 days)	200	°C
Intermediate (up to 14 days)	180	°C
Long Term (>3 months)	150	°C

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 air cushion 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 Size
Spool diameter	9.25"/23.5cm
Spool width	4.21"/10.7cm
Spindle	1"/2.54cm
Traverse width	3.75"/9.5cm