



When looking for low cost fiber, with a high numerical aperture for more efficient light coupling, and a high core to clad ratio, the TECS™ Hard Clad multimode fiber satisfies all these requirements and more. Offered with Numerical Apertures (NA) of 0.39, in High OH for Ultraviolet to Visible (UV-VIS) transmission and Low OH for Visible to Infrared (VIS-IR), also 0.48 NA, in High OH for Ultraviolet to Visible (UV- VIS) transmission.

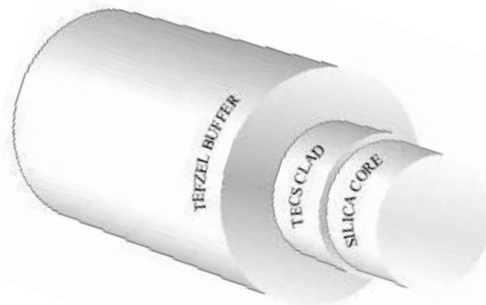
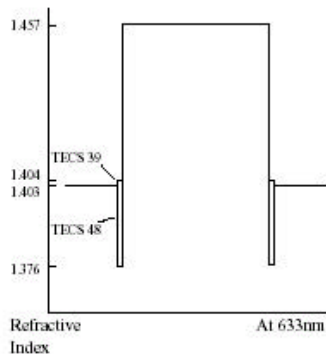
Features

- ❖ Hard cladding increases fiber strength and reduces static fatigue in humid environments.
- ❖ Protects the fiber during buffer stripping to prevent fiber breakage.
- ❖ Provides efficient light coupling and superior transmission in tight bends due to high numerical aperture.
- ❖ High core to clad bonding prevents pistoning and provides more stable crimp and cleave or epoxy terminations.
- ❖ High concentricity and core-to-clad ratio for excellent connection alignment, fiber core positioning and high trans- mission bundles.
- ❖ TECS™ cladding is removable with acetone, enabling low-cost, highly reliable, custom end designs.
- ❖ TECS™ 0.48 NA fiber couples over 50% more power than TECS™ .39 NA fiber, over 370% more power than standard silica-clad fiber, has less critical fiber alignment problems and reduced bending losses

Specifications

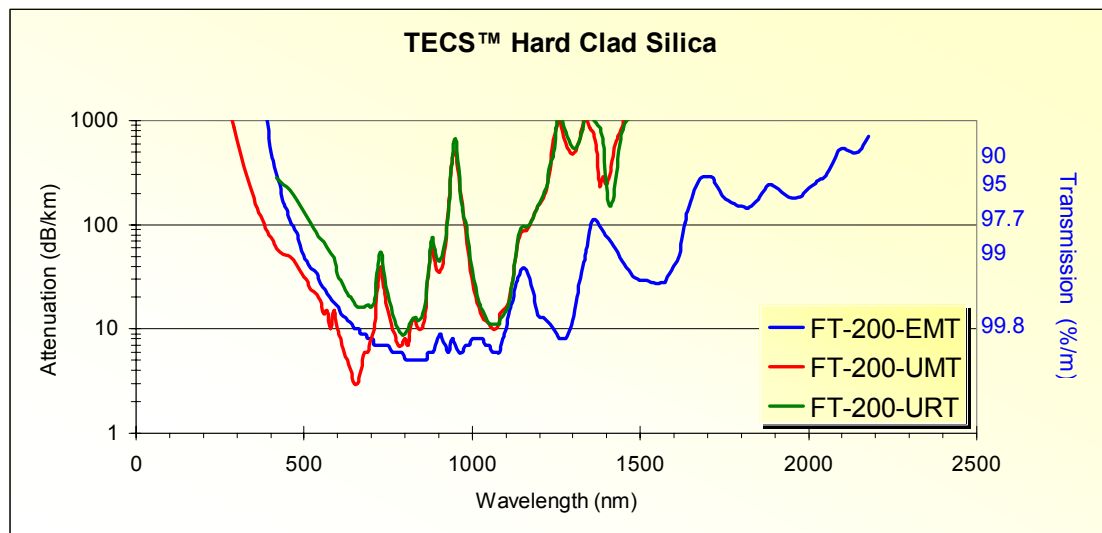
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|---|--|
| <ul style="list-style-type: none"> ❖ Sensors/Industrial Controls/Illumination <ul style="list-style-type: none"> • Make/Break • Distance • Temperature • Liquid level • Proximity • Chemical analysis • Biotechnology ❖ Industrial/Scientific diagnostic instrumentation/devices <ul style="list-style-type: none"> • Spectrophotometers • Gas/liquid chromatography • Flame pyrometer • Cytometry • DNA sequencing | <ul style="list-style-type: none"> ❖ Medical/Dental <ul style="list-style-type: none"> • Refractive surgery • Dermatology • Otolaryngology • Neurosurgery • Urology • Photodynamic therapy • General surgery ❖ Short-haul data transmission <ul style="list-style-type: none"> • In-plant systems ❖ Ordnance initiation <ul style="list-style-type: none"> • Carries signal for launch/detonation |
|---|--|

Fiber Cross Section



The core, cladding and buffer materials have been approved to USP Class VI for non-toxicity and biocompatibility. Optical fibers and assemblies are sterilizable by ETO, steam and gamma (except where noted). Blue colored coatings available.

Spectral Attenuation (Typical)



Fiber Specifications

- ❖ Standard buffer coating: Tefzel® 210 (clear)
- ❖ Operating temperature: -60°C to + 125°C
- ❖ Numerical Aperture¹ 0.39 +/- 0.02 (Full Acceptance Angle 46°) and 0.48 +/- 0.02 (Full Acceptance Angle 57°)
- ❖ Proof test level: 100kpsi
- ❖ Maximum attenuation: 10 dB/km @ 820nm (0.39 NA fiber); 12 dB/km @820nm (0.48 NA fiber)

Low OH Product Code	FT-200-EMT	FT-300-EMT	FT-400-EMT	FT-600-EMT	FT-800-EMT	FT-1.0-EMT	FT-1.5-EMT
High OH Product Code	FT-200-UMT	FT-300-UMT	FT-400-UMT	FT-600-UMT	FT-800-UMT	FT-1.0-UMT	FT-1.5-UMT
High OH High NA Product Code	FT-200-URT	FT-300-URT	FT-400-URT	FT-600-URT	FT-800-URT	FT-1.0-URT	FT-1.5-URT
Core Diameter	200um ± 5um	300um ± 6um	400um ± 8um	600um ± 10um	800um ± 10um	1000um ± 15um	1500um ± 30um
Clad Diameter	225um ± 5um	325um ± 10um	425um ± 10um	630um ± 10um	800um ± 10um	1035um ± 15um	1550um ± 31um
Buffer Diameter	500um ± 30um	650um ± 30um	730um ± 30um	1040um ± 30um	1040um ± 30um	1400um ± 50um	2000um ± 100um
Bandwidth @ 820nm	20 MHz/km	15MHz/km	13MHz/km	9MHz/km	-	-	-
Maximum Core/Clad Offset	5um	5um	7um	9um	9um	10um	15um
Maximum Power Capability							
-CW ²	0.2kW	0.5kW	0.8kW	1.8kW	3.2kW	5.0kW	11.3kW
-Pulsed ³	1.0MW	2.3MW	4.0MW	9.0MW	16.1MW	25.1MW	56.6MW
Minimum Bend Diameter							
-Recommended Short Term ⁴	20mm	30mm	40mm	60mm	80mm	100mm	150mm
-Recommended Long Term ⁵	40mm	60mm	80mm	120mm	160mm	200mm	300mm

1 – 2 meters, 50% intensity: uncoated and mode stripped

2 – Based on 1 MW/cm² for 1064nm ND:YAG laser and input spot size equal to 80% of the core diameter.

3 – Based on 5 GW/cm² for 1064nm ND:YAG laser with 10nsec. Pulse length and input spot size equal to 80% of the core diameter.

4 – Recommended geometric strain during installation is 100% of proof test level, based on statistical analysis of fiber failures.

5 – Recommended geometric strain is 50% of proof test level, based on statistical analysis of fiber failures.

Note: Buffer also available in colored Tefzel, clear nylon, and clear acrylate as custom production run.

Fiberguide Industries Customization Program

Fiberguide Industries is a full service custom fiber and value-added assembly provider. If you have unique requirements, please contact us to discuss tailoring a product or design to optimize optical performance for your specific application.

Fiberguide Industries, Inc. • 1 Bay Street, Stirling, NJ 07980

908-647-6601 • Fax:908-647-8464 • info@fiberguide.com • www.fiberguide.com

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Specifications subject to change without notice.