Eye Safe 10P/130 Thulium-Doped Single-Mode Double Clad Fibers

Coherent thulium-doped double clad fibers utilize glass compositions specifically optimized for a high degree of cross-relaxations between Tm ions, enabling efficient conversion of 793 nm pump photons into signal photons at 2 µm. The precision matched –M fiber version offers even higher absorption and efficiency than the –HE version. In addition, the waveguide design in the –M version is specifically tailored to offer a truly single-mode operation in monolithic fiber laser and amplifier systems when spliced to the precision matched passive fibers. These fibers, along with matching passive fibers, are available in 130 µm cladding diameter for ease of handling, cleaving and splicing, enabling reliable manufacturing of low power, eye-safe, fiber lasers and amplifiers.

Typical Applications

- Low to mid power CW and pulsed lasers & amplifiers
- Eye Safe industrial & medical lasers
- Military and commercial LIDAR
- Pumping of Ho-doped lasers & amplifiers

Features & Benefits

- Optimized core composition — High efficiencies when pumped at 793 nm
- Optimized waveguide design — Truly single-mode operation
- High absorption — Useful for generating high peak powers
- NuCOAT_{FA}™ fluoroacrylate coating — Greater fiber durability in extreme operating and storage conditions
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications	**SM-TDF-10P/130-M**	**PM-TDF-10P/130-HE**
Operating Wavelength	1900 – 2100 nm	1900 – 2100 nm
Core NA	0.150	0.150
First Cladding NA (5%)	≥ 0.46	≥ 0.46
Cutoff	1825 ± 75 nm	N/A
Cladding Attenuation	≤ 15.0 dB/km @ 860 nm	≤ 15 dB/km @ 860 nm
Cladding Absorption	1.50 ± 0.30 dB/m at 1180 nm 9.00 dB/m at 793 nm	1.60 ± 0.30 dB/m at 1180 nm 9.60 dB/m at 793 nm
Birefringence	N/A	nominal 1.5×10^{-4}
Geometrical & Mechanical Specifications		
Cladding Diameter	130.0 ± 1.5 µm	130.0 ± 1.0 µm
Core Diameter	10.0 µm	10.0 ± 1.0 µm
Coating Diameter	215.0 ± 10.0 µm	215.0 ± 10.0 µm
Coating Concentricity	< 5.0 µm	N/A
Core/Clad Offset	≤ 1.00 µm	N/A
Coating Material	Low Index Acrylate	Low Index Acrylate
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)	≥ 100 kpsi (0.7 GN/m²)

COHERENT

The passive version of each fiber is also available.

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www.coherent.com ; www.shop.coherent.com • Coherent products are manufactured under an ISO 9001:2008 certified quality management system.

RoHS compliant

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