Eye Safe 25P/250 Thulium-Doped LMA Double Clad Fibers

The first true LMA fibers featuring a unique low NA (0.1) Tm-doped core design and fully optimized for high slope efficiency when pumped at 793nm. This extraordinary efficiency is due to composition enabled cross relaxation of Thulium ions in the core. Both fibers fearure a 25 µm core and a 250 µm clad daimeter design allowing for a large mode field diameter and short device lengths thereby minimizing non-linear effects such as SBS and SRS. The - HE fiber features a high Tm-concentration with high pump conversion efficiency optimized for operation in the higher 2 µm wavelength gain spectrum. The -LC fiber features a lower concentration Tm-concentration that operates in the shorter wavelength region of the gain spectrum with improved performance.

Typical Applications

- Eye Safe (~2µm) lasers & amplifiers
- Military and commercial lidar
- ~2µm output TEM_{00} fiber lasers for pumping solid state crystal lasers
- High peak power pulsed fiber amplifiers

Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- Unique low NA Tm-doped core design — Robust single-mode beam quality
- Optimized composition for 793nm pumping — Very high conversion efficiency
- High pump absorption — Short fiber length, efficient lasing in the ~2µm I window
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications	**LMA-TDF-25P/250-HE**	**LMA-TDF-25P/250-LC**
Operating Wavelength	1900 – 2100 nm	1900 – 2100 nm
Core NA	0.090	0.090
First Cladding NA (5%)	≥ 0.460	≥ 0.460
Cladding Attenuation	≤ 15 dB/km @ 860 nm	≤ 15 dB/km @ 860 nm
Cladding Absorption	1.90 ± 0.20 dB/m at 1180 nm	1.00 ± 0.20 dB/m at 1180 nm
	9.50 ± 0.15 dB/m at 793 nm	3.00 ± 0.50 dB/m at 793 nm
Geometrical & Mechanical Specifications		
Cladding Diameter (flat-to-flat)	250.0 ± 8.0 µm	250.0 ± 5.0 µm
Core Diameter	25.0 ± 2.5 µm	25.0 ± 2.0 µm
Coating Diameter	395.0 ± 15.0 µm	395.0 ± 15.0 µm
Coating Material	Low Index Polymer	Low Index Polymer
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)	≥ 100 kpsi (0.7 GN/m²)

Coating Requirements: Low index polymer
The passive version of each fiber is also available.

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