EyeSafe 25 Micron Core Thulium-Doped LMA Double Clad Fibers

True LMA fiber featuring a unique low NA (< 0.1) high concentration Tm-doped core design. It is fully optimized for high slope efficiency (composition has demonstrated > 130% quantum efficiency) when pumped at 793 nm. This extraordinary efficiency is due to composition enabled cross relaxation of Thulium ions in the core. The high Tm concentration allows short device lengths and high pump conversion efficiency while the low NA (few moded) core design is ideal for applications where robust single-mode beam quality is critical. The high NA (0.46) large pump cladding waveguide allows for efficient coupling of high pump powers. The large core diameter (25 µm) maintains a large mode field diameter and short device length, thereby minimizing non-linear effects such as SBS and SRS.

Typical Applications

- High power 2 µm CW and pulsed EyeSafe lasers & amps
- EyeSafe industrial & medical lasers
- Military and commercial LIDAR
- 2 µm TEM_{oo} fiber lasers for pumping crystal lasers

Features & Benefits

- Unique low NA Tm-doped core design — Robust single-mode beam quality
- Optimized composition for 793 nm pumping — Very high conversion efficiency
- High pump absorption — Short fiber length, efficient lasing in the ~2 µm window

Optical Specifications	**PLMA-TDF-25P/400-HE**	**LMA-TDF-25P/400-HE**
Operating Wavelength	1900 – 2100 nm	1900 – 2100 nm
Core NA	0.090	0.090
First Cladding NA (5%)	≥ 0.460	≥ 0.460
Cladding Attenuation	≤ 15.0 dB/km @ 860 nm	≤ 15.0 dB/km @ 860 nm
Cladding Absorption	0.80 ± 0.10 dB/m at 1180 nm	0.60 ± 0.10 dB/m at 1180 nm
	4.8 dB/m at 793 nm	3.6 dB/m at 793 nm N/A
Birefringence	nominal 2.5×10^{-4}	
Geometrical & Mechanical Specifications		
		N/A
Cladding Diameter	400.0 ± 15.0 µm	400.0 ± 15.0 µm
Cladding Diameter (flat-to-flat)	N/A	25.0 ± 2.5 µm
Core Diameter	25.0 ± 2.5 µm	550.0 ± 20.0 µm
Coating Diameter	550.0 ± 20.0 µm	Low Index Polymer
Coating Material	Low Index Polymer	≥ 100 kpsi (0.7 GN/m²)
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)	

The passive version of each fiber is also available.

7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 E-mail info @ nufern.com • www.nufern.com •
Nufern products are manufactured under an ISO 9001:2008 certified quality management system.

RoHS