



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

Nufern Thulium-doped double clad fiber utilizes a glass composition specifically optimized for highly efficient operation around the important 2 μm wavelength when pumped at $\sim 793\text{ nm}$. These small core low NA fibers facilitate highly efficient single-mode operation while the telecom-like 130 μm cladding diameter makes handling, including cleaving and splicing, as simple as possible.

Typical Applications

- Low to mid power CW and pulsed Eye Safe 2 μm lasers & amplifiers
- Eye Safe industrial & medical lasers
- Military and commercial LIDAR
- 2 μm output TEM₀₀ fiber lasers for pumping solid state crystal lasers

Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- LMA single mode core design and short amplifier length — Useful for generating high peak powers
- Easy to maintain single-mode LP01 beam through fiber & components
- PANDA-style stress structure for increased birefringence — Superior optical performance and uniformity
- All fiber proof tested to $> 100\text{ kpsi}$ — Critical for ensuring long term reliability when coiling

Optical Specifications

Operating Wavelength (nominal)
Core NA
First Cladding NA (5%)
Cladding Attenuation
Cladding Absorption

Birefringence

SM-TDF-10P/130-HE

2000 nm
0.150
 ≥ 0.46
 $\leq 15.0\text{ dB/km @ }860\text{ nm}$
 $1.00 \pm 0.30\text{ dB/m at }1180\text{ nm}$
 $3.00\text{ dB/m at }793\text{ nm}$
N/A

PM-TDF-10P/130-HE

2000 nm
0.150
 ≥ 0.46
 $\leq 15\text{ dB/km @ }860\text{ nm}$
 $1.60 \pm 0.30\text{ dB/m at }1180\text{ nm}$
 $4.70\text{ dB/m at }793\text{ nm}$
nominal 1.5×10^{-4}

Geometrical & Mechanical Specifications

Cladding Diameter
Cladding Diameter (flat-to-flat)
Core Diameter
Coating Diameter
Coating Material
Proof test Level

N/A
 $130.0 \pm 2.0\text{ }\mu\text{m}$
 $10.0 \pm 1.0\text{ }\mu\text{m}$
 $215.0 \pm 10.0\text{ }\mu\text{m}$
Low Index Polymer
 $\geq 100\text{ kpsi (}0.7\text{ GN/m}^2\text{)}$

$130.0 \pm 1.0\text{ }\mu\text{m}$
N/A
 $10.0 \pm 1.0\text{ }\mu\text{m}$
 $215.0 \pm 10.0\text{ }\mu\text{m}$
Low Index Polymer
 $\geq 100\text{ kpsi (}0.7\text{ GN/m}^2\text{)}$

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.

Standard specifications and design parameters are listed above. Specifications are subject to change without notice. Other configurations such as alternative form factors, optimized cut-off and UV cured color coating may be available. Let us know how Nufern can assist with your requirements.

