

20/400 Ytterbium-Doped LMA Double Clad Fiber



Nufern's Large Mode Area (LMA) Ytterbium-doped double clad fiber is ideal for high power fiber lasers and amplifiers used in military, industrial, and medical applications. These fibers enable efficient, compact, diode pumped lasers that directly compete with traditional solid-state lasers. The fiber features a 20 micron diameter core and 400 micron diameter clad size with a low NA (0.06) core. With > 75% slope efficiency and compatibility with operating at > 1kW of CW output power, this fiber is ideal for use in high power single-mode industrial fiber lasers.

Typical Applications

- High power fiber lasers
- CW and pulsed amplifiers
- Military, industrial and medical

Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- LMA core design — Useful for generating high CW powers
- “Few” moded core design — 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 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications

| | PLMA-YDF-20/400-VIII | LMA-YDF-20/400-VIII |
|------------------------|---|---|
| Operating Wavelength | 1060 – 1115 nm | 1060 – 1115 nm |
| Core NA | 0.060 ± 0.010 | 0.060 ± 0.010 |
| First Cladding NA (5%) | ≥ 0.46 | ≥ 0.46 |
| Cladding Absorption | 0.50 ± 0.05 dB/m at 915 nm 1.50 dB/m near 975 nm | 0.40 ± 0.05 dB/m at 915 nm 1.20 dB/m near 975 nm |
| Birefringence | nominal 3.5×10^{-4} | N/A |

Geometrical & Mechanical Specifications

| | | |
|----------------------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter | 400.0 ± 15.0 μm | N/A |
| Cladding Diameter (flat-to-flat) | N/A | 400.0 ± 15.0 μm |
| Core Diameter | 20.0 ± 2.0 μm | 20.0 ± 1.5 μm |
| Coating Diameter | 550.0 ± 20.0 μm | 550.0 ± 20.0 μm |
| Coating Material | Low Index Polymer | Low Index Polymer |
| Proof test Level | ≥ 100 kpsi (0.7 GN/m ²) | ≥ 100 kpsi (0.7 GN/m ²) |

The passive version of each fiber is also available.
Precision matched fiber sets are also available - see PLMA-YDF-20/400-M; LMA-YDF-20/400-M; PLMA-GDF-20/400-M and LMA-GDF-20/400-M



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.



Custom developed fiber (FUD) 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.