



# 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

- 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  $\geq 100$  kpsi — Critical for ensuring long term reliability when coiling

## Optical Specifications

Operating Wavelength (nominal)	1060 - 1115 nm
Cladding Absorption @ 915 nm	$0.55 \pm 0.05$ dB/m
Cladding Absorption @ 975 nm (nominal)	1.65 dB/m
Core Numerical Aperture	$0.06 \pm 0.01$
Cladding Numerical Aperture (5%)	$\geq 0.46$
Birefringence (nominal)	$3.5 \times 10^{-4}$

## Geometrical & Mechanical Specifications

Core Diameter	$20 \pm 2$ $\mu$ m
Clad Diameter	$400 \pm 15$ $\mu$ m
Coating Diameter	$550 \pm 20$ $\mu$ m
Outer Cladding Material	Low Index Polymer
Proof Test Level (radius bend method)	$\geq 100$ kpsi (0.7 GN/m <sup>2</sup> )

## PLMA-YDF-20/400-VIII

Operating Wavelength (nominal)	1060 - 1115 nm
Cladding Absorption @ 915 nm	$0.55 \pm 0.05$ dB/m
Cladding Absorption @ 975 nm (nominal)	1.65 dB/m
Core Numerical Aperture	$0.06 \pm 0.01$
Cladding Numerical Aperture (5%)	$\geq 0.46$
Birefringence (nominal)	$3.5 \times 10^{-4}$

Core Diameter	$20 \pm 2$ $\mu$ m
Clad Diameter	$400 \pm 15$ $\mu$ m
Coating Diameter	$550 \pm 20$ $\mu$ m
Outer Cladding Material	Low Index Polymer
Proof Test Level (radius bend method)	$\geq 100$ kpsi (0.7 GN/m <sup>2</sup> )

## LMA-YDF-20/400

Operating Wavelength (nominal)	1060 - 1115 nm
Cladding Absorption @ 915 nm	$0.55 \pm 0.10$ dB/m
Cladding Absorption @ 975 nm (nominal)	1.70 dB/m
Core Numerical Aperture	$0.06 \pm 0.01$
Cladding Numerical Aperture (5%)	$\geq 0.46$
Birefringence (nominal)	NA

Core Diameter	$20 \pm 2$ $\mu$ m
Clad Diameter	$400 \pm 15$ $\mu$ m
Coating Diameter	$550 \pm 20$ $\mu$ m
Outer Cladding Material	Low Index Polymer
Proof Test Level (radius bend method)	$\geq 100$ kpsi (0.7 GN/m <sup>2</sup> )

## LMA-YDF-20/400-VIII

Operating Wavelength (nominal)	1060 - 1115 nm
Cladding Absorption @ 915 nm	$0.42 \pm 0.05$ dB/m
Cladding Absorption @ 975 nm (nominal)	1.26 dB/m
Core Numerical Aperture	$0.06 \pm 0.01$
Cladding Numerical Aperture (5%)	$\geq 0.46$
Birefringence (nominal)	NA

Core Diameter	$20 \pm 1.5$ $\mu$ m
Clad Diameter	$400 \pm 15$ $\mu$ m
Coating Diameter	$550 \pm 20$ $\mu$ m
Outer Cladding Material	Low Index Polymer
Proof Test Level (radius bend method)	$\geq 100$ kpsi (0.7 GN/m <sup>2</sup> )

**Note:** The passive version of this fiber is also available.



RoHS

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Nufern products are manufactured under an ISO 9001:2000 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.