

# 10/130 Ytterbium-Doped LMA Double Clad Fiber



Featuring the latest Gen VIII glass composition, Nufern's large mode area (LMA) and PM-LMA Ytterbium-doped double clad fibers are ideally suited for applications spanning military, industrial and medical including linearly polarized fiber lasers and amplifiers. LMA Yb-doped fibers enable efficient, compact, diode pumped fiber sources that are an attractive alternative to traditional solid-state lasers. This fiber features a single mode large core/cladding ratio with a low NA and is ideally suited for both CW and pulsed laser applications.

## Typical Applications

- Pulsed fiber lasers and amplifiers
- Material processing
- LIDAR
- Non-linear optics / frequency doubling

## Features & Benefits

- NuCOAT fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- LMA 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 kpsi — Critical for ensuring long term reliability when coiling

## Optical Specifications

	PLMA-YDF-10/125-VIII	LMA-YDF-10/130-VIII
Operating Wavelength	1060 – 1115 nm	1060 – 1115 nm
Core NA	0.075	0.075
First Cladding NA (5%)	≥ 0.460	≥ 0.46
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Cladding Absorption	1.60 ± 0.20 dB/m at 915 nm 4.80 dB/m near 976 nm	1.30 ± 0.20 dB/m at 915 nm 3.90 dB/m near 975 nm
Birefringence	nominal $3 \times 10^{-4}$	N/A

## Geometrical & Mechanical Specifications

	PLMA-YDF-10/125-VIII	LMA-YDF-10/130-VIII
Cladding Diameter	125.0 ± 2.0 μm	N/A
Cladding Diameter (flat-to-flat)	N/A	130.0 ± 3.0 μm
Core Diameter	11.0 ± 1.0 μm	11.0 ± 1.0 μm
Coating Diameter	245.0 ± 15.0 μm	245.0 ± 15.0 μm
Core/Clad Offset	≤ 1.00 μm	≤ 1.00 μm
Coating Material	Low Index Polymer	Low Index Polymer
Proof test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

The precision matched fiber sets are also available - see PLMA-YDF-10/125-M; LMA YDF-10/130-M; PLMA-GDF-10/125-M and LMA-GDF-10/130-M



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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.



# 10/125 & 10/130 Precision Matched Passive LMA Double Clad Fibers

Nufern's large mode area (LMA) and Polarization Maintaining LMA (PLMA) passive double clad fibers are ideally suited for applications spanning military, industrial and medical including linearly polarized fiber lasers and amplifiers. These fibers feature a 10 micron diameter core and 125 (PLMA) or 130 (LMA) micron diameter clad size with a low NA (0.075) core. They are precision matched to their active Yb-doped 10/130 LMA and PLMA matched counterparts to ensure excellent splice compatibility and low loss. As with all Nufern standard Large Mode Area (LMA) fibers, these fibers are proof-tested to 100 kpsi, an industry requirement for long term reliability. They utilize the latest fiber design and NuCOAT™ coating technology to ensure excellent preservation of beam quality and extended operating life demanded by today's industrial fiber laser applications. These precision matched fibers are available in both non-PM and PANDA-style PM fibers.

## Typical Applications

- Pulsed fiber lasers and amplifiers
- Material processing
- LIDAR
- Non-linear optics / frequency doubling

## Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- LMA core design — Useful for transmitting 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-GDF-10/125-M	LMA-GDF-10/130-M
Operating Wavelength	1060 – 1600 nm	1060 – 1600 nm
Core NA	0.075 ± 0.005	0.075 ± 0.005
First Cladding NA (5%)	≥ 0.460	≥ 0.46
Core Attenuation	≤ 40.00 dB/km @ 1300 nm ≤ 20.00 dB/km @ 1200 nm	≤ 40.0 dB/km @ 1300 nm ≤ 20.0 dB/km @ 1200 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Birefringence	nominal $3 \times 10^{-4}$	N/A

## Geometrical & Mechanical Specifications

	PLMA-GDF-10/125-M	LMA-GDF-10/130-M
Cladding Diameter	125.0 ± 1.0 μm	130.0 ± 1.0 μm
Core Diameter	11.0 ± 1.0 μm	11.0 ± 1.0 μm
Coating Diameter	245.0 ± 10.0 μm	245.0 ± 10.0 μm
Coating Concentricity	< 5.0 μm	< 5.0 μm
Core/Clad Offset	≤ 0.70 μm	≤ 0.70 μm
Clad Non-Circularity	N/A	≤ 0.5 %
Proof-test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

These precision matched fibers are included in our precision matched sets - see PLMA-YDF-10/125-M and LMA YDF-10/130-M



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