

15/130 Ytterbium-Doped LMA Double Clad Fibers



Coherent's polarization maintaining, Large Mode Area (LMA), Ytterbium-doped double clad fiber is ideal for linearly polarized high power fiber lasers and amplifiers used in military, industrial, and medical applications. 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 large core/cladding ratio with a low NA (0.08) and is ideally suited for pulsed laser applications.

Typical Applications

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

Features & Benefits

- LMA core design and short amplifier length — Useful for generating high peak 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-15/130-VIII	LMA-YDF-15/130-VIII
Operating Wavelength	1060 – 1115 nm	1060 – 1115 nm
Core NA	0.080 ± 0.005	0.080 ± 0.005
First Cladding NA (5%)	≥ 0.46	≥ 0.46
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Cladding Absorption	1.90 ± 0.20 dB/m at 915 nm 5.70 dB/m near 976 nm	1.80 ± 0.20 dB/m at 915 nm 5.40 dB/m near 976 nm
Birefringence	nominal 2×10^{-4}	N/A

Geometrical & Mechanical Specifications

	PLMA-YDF-15/130-VIII	LMA-YDF-15/130-VIII
Cladding Diameter	130.0 ± 1.0 μm	N/A
Cladding Diameter (flat-to-flat)	N/A	130.0 ± 2.0 μm
Core Diameter	15.0 ± 1.5 μm	15.0 ± 1.5 μm
Coating Diameter	245.0 ± 10.0 μm	245.0 ± 10.0 μm
Coating Concentricity	< 5.0 μm	< 5.0 μm
Core/Clad Offset	≤ 1.00 μm	≤ 1.00 μm
Coating Material	Low Index Acrylate	Low Index Acrylate
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 - see PLMA-GDF-15/130 and LMA-GDF-15/130

Nufern • 7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 • Email: tech.sales@coherent.com
www.coherent.com ; www.shop.coherent.com • Coherent 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 Coherent can assist with your requirements.

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15/130 Passive LMA Double Clad Fiber



Coherent's passive series of Large Mode Area (LMA) double clad fibers are ideal for high power monolithic fiber lasers and amplifiers. These passive fibers are based on a 15 μm diameter core and 130 μm diameter clad size with a low NA (0.08) core and are designed to work well with the active Yb-doped 15/130 LMA fibers. These fibers utilize the latest fiber design and NuCOAT™ coating technology to ensure excellent preservation of beam quality and extended operating life at the high power levels demanded by today's industrial fiber laser applications. These 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

- NuMATCH™ — Designed optimized compatibility with 15/130 active fibers
- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- Optimized LMA core design — Easy to maintain single mode LP01 beam through fiber & components at high power
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications

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

Cladding Attenuation
Birefringence

PLMA-GDF-15/130

1060 – 1600 nm
0.080 \pm 0.005
 \geq 0.460
N/A

 \leq 15.0 dB/km @ 1095 nm
nominal 1.5×10^{-4}

LMA-GDF-15/130-M

1060 – 1600 nm
0.080 \pm 0.005
 \geq 0.460
 \leq 40.0 dB/km @ 1300 nm
 \leq 20.0 dB/km @ 1200 nm
 \leq 15.0 dB/km @ 1095 nm
N/A

Geometrical & Mechanical Specifications

Cladding Diameter
Core Diameter
Coating Diameter
Coating Concentricity
Core/Clad Offset
Clad Non-Circularity
Proof test Level

130.0 \pm 1.0 μm
15.0 \pm 1.5 μm
245.0 \pm 10.0 μm
< 5.0 μm
N/A
N/A
 \geq 100 kpsi (0.7 GN/m²)

130.0 \pm 1.0 μm
15.0 \pm 1.5 μm
245.0 \pm 10.0 μm
< 5.0 μm
 \leq 1.00 μm
 \leq 0.5 %
 \geq 100 kpsi (0.7 GN/m²)



Coating Requirements: Low Index Polymer Coating.
Designed to work with 15/130 LMA Yb-doped active fibers.

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