

High Absorption 30/250 Precision Matched Ytterbium-Doped LMA Double Clad Fiber



Coherent precision matched high absorption 30/250 Ytterbium-doped double clad fiber offers a higher Yb dopant concentration than our original 30/250 LMA fibers and tighter geometrical specifications improving splice loss and mateability. This fiber is specifically designed for short pulse amplification where fiber length is a critical design factor because of very high peak powers. The high absorption enables very short fiber amplifier lengths without sacrificing efficiency. Short pulse fiber amplifiers can be considered low-cost replacements for Nd:YAG lasers used in materials processing, LIDAR and range finding applications. This precision matched active fiber is optimized to match Coherent's precision matched passive 30/250 fiber for superior splicing and loss performance.

Typical Applications

- Short pulse fiber amplifiers & lasers
- Materials processing
- LIDAR
- Range finding
- CW fiber amplifiers and lasers

Features & Benefits

- Precision matched fiber series – ensure splice compatibility across the 30/250 High Absorption LMA fibers
- 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
- “Few” moded core design — Easy to maintain single mode LP01 beam through fiber & components
- Higher Yb dopant concentration — Higher absorption & superior long-term performance

Optical Specifications

Operating Wavelength	1060 – 1115 nm
Core NA	0.062 ± 0.005
First Cladding NA (5%)	≥ 0.46
Core Attenuation	≤ 30.0 dB/km @ 1200 nm ≤ 45.0 dB/km @ 1300 nm
Cladding Absorption	2.10 ± 0.20 dB/m at 915 nm 6.30 dB/m near 975 nm

LMA-YDF-30/250-HI-M

Geometrical & Mechanical Specifications

Cladding Diameter (flat-to-flat)	250.0 ± 5.0 μm
Core Diameter	30.0 ± 2.0 μm
Coating Diameter	395.0 ± 15.0 μm
Core/Clad Offset	≤ 2.00 μm
Proof test Level	≥ 100 kpsi (0.7 GN/m ²)



Coating Requirements: Low index polymer coating.
The precision matched passive version of this fiber is also available - see LMA-GDF-30/250-M

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.

30/250 Passive LMA Double Clad Fibers



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 30 μm diameter core and 250 μm diameter clad size with a low NA (0.06) core and are designed to work well with the active Yb-doped 30/250 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

- Monolithic high power fiber lasers and amplifiers
- LMA fiber couplers, and pump combiners
- High power pump and signal pigtails
- Military, industrial and medical

Features & Benefits

- NuMATCH™ — Optimized compatibility with 30/250 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

	PLMA-GDF-30/250	LMA-GDF-30/250-M
Operating Wavelength	1060 – 1600 nm	1060 – 1600 nm
Core NA	0.060 \pm 0.010	0.062 \pm 0.005
First Cladding NA (5%)	\geq 0.46	\geq 0.46
Core Attenuation	N/A	\leq 45.0 dB/km @ 1300 nm \leq 30.0 dB/km @ 1200 nm
Cladding Attenuation	\leq 15.0 dB/km @ 1095 nm	\leq 15.0 dB/km @ 1095 nm
Birefringence	nominal 2×10^{-4}	N/A

Geometrical & Mechanical Specifications

	PLMA-GDF-30/250	LMA-GDF-30/250-M
Cladding Diameter	250.0 \pm 10.0 μm	247.0 \pm 3.0 μm
Core Diameter	30.0 \pm 2.5 μm	30.0 \pm 2.0 μm
Coating Diameter	400.0 \pm 20.0 μm	395.0 \pm 15.0 μm
Core/Clad Offset	N/A	\leq 2.00 μm
Clad Non-Circularity	N/A	\leq 0.5 %
Proof test Level	\geq 100 kpsi (0.7 GN/m ²)	\geq 100 kpsi (0.7 GN/m ²)



Coating Requirements: Low Index Polymer Coating.
Designed to work with 30/250 LMA Yb-doped active fibers.

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.