

# High Absorption 30/250 Ultra Matched+ Yb-doped LMA Double Clad Fiber



Nufern's Ultra Matched+ (M+) passive series of Large Mode Area (LMA) double clad fibers are ideal for high power monolithic fiber lasers and amplifiers. These active fibers are based on a 30 micron diameter core and 250 micron diameter clad size with a low NA (0.06) core. These M+ fibers represent the next generation of matched fibers. They are matched with ultra-high precision to their passive 30/250 LMA M+ counterparts to ensure excellent splice compatibility and low loss. The M+ fibers are specified to the tightest specifications including the MFD, and use NuCOAT™ coating technology ensuring excellent preservation of beam quality and extending operating life at the high power levels demanded by today's industrial fiber laser applications.

## Typical Applications

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

## Features & Benefits

- Ultra Matched (M+) — Providing the lowest possible splice loss
- 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
Mode Field Diameter	21.5 ± 1.5 μm @ 1060 nm
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 ± 3.0 μm
Core Diameter	30.0 ± 2.0 μm
Coating Diameter	395.0 ± 15.0 μm
Core/Clad Offset	≤ 1.20 μm
Proof-test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

The ultra matched passive version of this fiber is also available - see LMA-GDF-30/250-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](mailto:info@nufern.com) • [www.nufern.com](http://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.

# 30/250 Ultra Matched+ Passive LMA Double Clad Fiber



Nufern's Ultra Matched+ (M+) 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 micron diameter core and 250 micron diameter clad size with a low NA (0.06) core. These M+ fibers represent the next generation of matched fibers. They are matched with ultra-high precision to their active Yb-doped 30/250 LMA M+ counterparts to ensure excellent splice compatibility and low loss. The M+ fibers are specified to the tightest specifications including the MFD, and use NuCOAT™ coating technology ensuring excellent preservation of beam quality and extending operating life at the high power levels demanded by today's industrial fiber laser applications.

## Typical Applications

- Monolithic high power lasers & amplifiers
- LMA fiber couplers & pump combiners
- High power beam delivery
- Military, industrial and medical

## Features & Benefits

- Ultra Matched (M+) — providing the lowest possible splice loss
- 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	1060 – 1600 nm
Core NA	0.062 ± 0.005
First Cladding NA (5%)	≥ 0.46
Mode Field Diameter	21.5 ± 1.5 μm @ 1060 nm
Core Attenuation	≤ 45.0 dB/km @ 1300 nm ≤ 30.0 dB/km @ 1200 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm

## LMA-GDF-30/250-M+

## Geometrical & Mechanical Specifications

Cladding Diameter	247.0 ± 3.0 μm
Core Diameter	30.0 ± 2.0 μm
Coating Diameter	395.0 ± 15.0 μm
Core/Clad Offset	≤ 1.20 μm
Clad Non-Circularity	≤ 0.5 %
Proof test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

Designed to work with 30/250 LMA Yb-doped active fibers, especially LMA-YDF-30/250-HI-M+



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