



# 20/400 Precision Matched Active LMA Double Clad Fiber

Coherent | Nufern's matched series of Large Mode Area (LMA) double clad fibers are ideal for high power monolithic fiber lasers and amplifiers. This matched fiber series is based on a 20 micron diameter core and 400 micron diameter clad size with a low NA (0.065) core and consists of Yb-doped fiber and passive beam delivery fibers all made to the highest tolerances in the industry. This fiber utilizes Gen 8 glass composition to ensure excellent preservation of beam quality. The new NuCOAT-FA-HP high performance coating technology extends the operating life at the higher power levels demanded by today's industrial fiber laser applications.

## Typical Applications

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

## Features & Benefits

- Matched fiber series – Ensures splice compatibility across the 20/400 matched series of fibers
- NuCOAT-FA-HP high performance coating — Greater fiber durability at higher powers and in extreme environmental operating & storage conditions
- State of the art Yb-doped glass — Useful for generating high CW powers
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

## Optical Specifications

Operating Wavelength	1015 – 1115 nm
Core NA	0.065 ± 0.005
First Cladding NA (5%)	≥ 0.46
Core Attenuation	≤ 30.0 dB/km @ 1300 nm ≤ 15.0 dB/km @ 1200 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm
Cladding Absorption	0.40 ± 0.05 dB/m at 915 nm
Slope Efficiency	> 70.0% @ 915 nm

## LMA-YDF-20/400-HP-M 1364048

## Geometrical & Mechanical Specifications

Cladding Diameter (flat-to-flat)	400.0 ± 10.0 μm
Core Diameter	20.0 ± 1.5 μm
Coating Diameter	550.0 ± 15.0 μm
Core/Clad Offset	≤ 2.00 μm
Coating Material	Low Index Acrylate
Proof test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

Precision matched with LMA-GDF-20/400-HP-M  
It is recommended that fibers with NuCOAT-FA-HP and NuCOAT-FA coatings are not used together.



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.

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# 20/400 Precision Matched Passive LMA Double Clad Fibers



Coherent | Nufern's Large Mode Area (LMA) passive double clad fibers are ideal for high power fiber lasers and amplifiers used in military, industrial, and medical applications. These fibers feature a 20 micron diameter core and 400 micron diameter clad size with a low NA (0.065) core. They are precision matched to their active counterpart, LMA-YDF-20/400-HP-M, to ensure excellent splice compatibility and low loss. As with all Coherent | 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 to ensure excellent preservation of beam quality. The new NuCOAT-FA-HP high performance coating technology extends the operating life at higher power levels demanded by today's industrial fiber laser applications.

## Typical Applications

- High power fiber lasers
- CW and pulsed amplifiers
- Military, industrial and medical
- Fiber Bragg Gratings

## Features & Benefits

- NuCOAT-FA-HP high performance fluoroacrylate coating — Greater fiber durability at the highest powers and 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
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

## Optical Specifications

	LMA-GDF-20/400-HP-M 1364050	LMA-GDF-20/400-HP-M+ 1364049
Operating Wavelength	1015 – 1115 nm	1015 – 1115 nm
Core NA	0.065 ± 0.005	0.065 ± 0.005
First Cladding NA (5%)	≥ 0.46	≥ 0.46
Mode Field Diameter	N/A	16.7 ± 1.0 μm @ 1060 nm
Core Attenuation	≤ 12.0 dB/km @ 1300 nm ≤ 8.0 dB/km @ 1200 nm	≤ 12.0 dB/km @ 1300 nm ≤ 8.0 dB/km @ 1200 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm

## Geometrical & Mechanical Specifications

Cladding Diameter	395.0 ± 5.0 μm	395.0 ± 3.0 μm
Core Diameter	20.0 ± 1.5 μm	20.0 ± 1.5 μm
Coating Diameter	550.0 ± 15.0 μm	550.0 ± 15.0 μm
Core/Clad Offset	≤ 2.00 μm	≤ 1.20 μm
Clad Non-Circularity	≤ 0.50 %	≤ 0.50 %
Coating Material	Low Index Acrylate	Low Index Acrylate
Proof test Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )

Precision matched with LMA-YDF-20/400-HP-M  
It is recommended that fibers with NuCOAT-FA-HP and NuCOAT-FA coatings are not used together.



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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.