

# 30/400 Ytterbium-Doped LMA Double Clad Fibers



Coherent's 30/400 Ytterbium-doped double clad fiber is designed to combine the features of large 30  $\mu\text{m}$  core diameter for generating high pulse energy together with a large 400  $\mu\text{m}$  cladding optimized for high average powers, while still delivering good beam quality through the adoption of LMA fiber design. Available with latest generation of glass technology, the Gen. VIII 30/400-YDF fiber is available in two versions —standard and PANDA-style PM.

## Typical Applications

- Marking
- Welding
- Cutting

## Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- LMA core design — Operates at highest CW powers possible and delivers good beam quality
- “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-30/400-VIII                                    | LMA-YDF-30/400-VIII                                     |
|------------------------|---|---|
| Operating Wavelength   | 1060 – 1115 nm  | 1060 – 1115 nm  |
| Core NA                | 0.060 $\pm$ 0.010                                       | 0.060 $\pm$ 0.010                                       |
| First Cladding NA (5%) | $\geq$ 0.46   | $\geq$ 0.46   |
| Cladding Attenuation   | $\leq$ 15.0 dB/km @ 1095 nm                             | $\leq$ 15.0 dB/km @ 1095 nm                             |
| Cladding Absorption    | 0.90 $\pm$ 0.10 dB/m at 915 nm<br>2.70 dB/m near 975 nm | 0.65 $\pm$ 0.10 dB/m at 915 nm<br>2.00 dB/m near 975 nm |
| Birefringence          | nominal $3 \times 10^{-4}$                              | N/A   |

## Geometrical & Mechanical Specifications

|                                  | PLMA-YDF-30/400-VIII                     | LMA-YDF-30/400-VIII                      |
|----------------------------------|--|--|
| Cladding Diameter                | 400.0 $\pm$ 15.0 $\mu\text{m}$           | N/A                                      |
| Cladding Diameter (flat-to-flat) | N/A                                      | 400.0 $\pm$ 15.0 $\mu\text{m}$           |
| Core Diameter                    | 30.0 $\pm$ 3.0 $\mu\text{m}$             | 30.0 $\pm$ 3.0 $\mu\text{m}$             |
| Coating Diameter                 | 550.0 $\pm$ 20.0 $\mu\text{m}$           | 500.0 $\pm$ 20.0 $\mu\text{m}$           |
| Coating Material                 | Low Index Acrylate                       | Low Index Acrylate                       |
| Proof test Level                 | $\geq$ 100 kpsi (0.7 GN/m <sup>2</sup> ) | $\geq$ 100 kpsi (0.7 GN/m <sup>2</sup> ) |



The passive version of each fiber is also available - see PLMA-GDF-30/400 and LMA-GDF-30/400

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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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# 30/400 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 micron diameter core and 400 micron diameter clad size with a low NA (0.06) core and are designed to work well with the active Yb-doped 30/400 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 lasers & amplifiers
- LMA fiber couplers & pump combiners
- High power pump & signal pigtails
- Military, industrial and medical

## Features & Benefits

- Designed for compatibility with 30/400 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-30/400            | LMA-GDF-30/400         |
|------------------------|----------------------------|------------------------|
| Operating Wavelength   | 1060 – 1600 nm             | 1060 – 1600 nm         |
| Core NA                | 0.060 ± 0.010              | 0.060 ± 0.010          |
| First Cladding NA (5%) | ≥ 0.46                     | ≥ 0.46                 |
| 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-30/400                     | LMA-GDF-30/400                      |
|-------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter | 400.0 ± 10.0 μm                     | 400.0 ± 10.0 μm                     |
| Core Diameter     | 30.0 ± 2.5 μm                       | 30.0 ± 2.5 μm                       |
| Coating Diameter  | 550.0 ± 20.0 μm                     | 550.0 ± 20.0 μm                     |
| Proof test Level  | ≥ 100 kpsi (0.7 GN/m <sup>2</sup> ) | ≥ 100 kpsi (0.7 GN/m <sup>2</sup> ) |



Designed to work with 30/400 LMA Yb-doped active fibers.

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