

# XLMA Ytterbium-Doped Triple Clad Fibers



Coherent's Extra Large Mode Area (XLMA) ytterbium-doped fibers are designed to support applications which require high average and peak powers as well as high pulse energies. These large core size fibers offer high cladding absorptions and high thresholds for non-linear effects. The fibers have a numerical aperture of 0.10 and core diameters of 100 or 300  $\mu\text{m}$ , providing fundamental mode areas of 60 mm and 200 mm, respectively. The highly multimode output enables low spatial coherence for speckle free, full-field imaging. With the broad gain bandwidth of ytterbium, the XLMA fibers enable broadband, low temporal coherence operation for a range of applications such as optical coherence tomography and frequency resolved LIDAR. The XLMA fibers are offered in triple clad geometry to facilitate high power handling in multi-kW continuous wave lasers and high average power pulsed amplifiers with tens of mJ pulse energies. The fibers have NuCOAT™ coating and the mechanical and optical reliability typical of Coherent's double clad fibers.

## Typical Applications

- Multi-kW, multimode lasers
- High pulse energy amplifiers
- ASE sources for spectroscopy, full-field imaging and fiber sensors
- Sources for OCT and frequency resolved LIDAR's

## Features & Benefits

- High absorption & very large mode areas — Enables short fiber lengths & low non-linear effects
- High damage threshold — For high pulse energies and peak powers
- Highly multimoded fiber — Ideal candidate for speckle free sources
- High power per mode with low coherence — For ranging applications
- NuCOAT™ fluoroacrylate coating — Excellent damp & dry heat performance for extended life

## Optical Specifications

Operating Wavelength  
Core NA  
Cladding Absorption

### XLMA-YTF-100/400/480

1015 – 1115 nm  
0.110 ± 0.010  
7.50 ± 1.00 dB/m at 915 nm

### XLMA-YTF-300/400/480

1015 – 1115 nm  
0.110 ± 0.010  
65.00 ± 10.00 dB/m at 915 nm

## Geometrical & Mechanical Specifications

First Cladding Diameter Flat-to-Flat  
Second Cladding Diameter  
Core Diameter  
Coating Diameter  
Core/Clad Offset  
Coating Material  
Proof-test Level

400 ± 18  $\mu\text{m}$   
480 ± 10  $\mu\text{m}$   
95.0 ± 10.0  $\mu\text{m}$   
630.0 ± 20.0  $\mu\text{m}$   
≤ 10.00  $\mu\text{m}$   
Low Index Acrylate  
≥ 100 kpsi (0.7 GN/m<sup>2</sup>)

400 ± 18  $\mu\text{m}$   
480 ± 10  $\mu\text{m}$   
290.0 ± 20.0  $\mu\text{m}$   
630.0 ± 20.0  $\mu\text{m}$   
≤ 10.00  $\mu\text{m}$   
Low Index Acrylate  
≥ 100 kpsi (0.7 GN/m<sup>2</sup>)



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.

NU0304- 11/12/2020