

# GenX Precision Matched Active LMA Double Clad Fiber



GenX fibers are the newest series of Large Mode Area (LMA) double-clad fibers, specifically tailored to enable power scaling of multi-kW -class fiber lasers and amplifiers. Offering superior photo-darkening (PD) performances with maintained and/or higher absorption, these fibers are optimized to benefit both CW and pulsed multi-kW systems. The 14/250 GenX design is ideal for efficient and reliable kW-class systems. The 20/400 GenX offers the same absorption with significantly lower PD than comparable products providing an optimized platform for high efficiency and high-reliability multi-kW CW lasers. The 25/250 GenX product combines higher absorption and superior PD, ideal for enabling multi-kW peak power scaling with reduced cavity length and nonlinearities.

## Typical Applications

- kW Class Fiber Lasers & Amplifiers
- Materials Processing
- Military, Industrial and Medical

## Features & Benefits

- Superior photo-darkening performance in both CW and pulsed applications
- Enhanced reliability for power scaling beyond kW level
- Higher absorption mitigates non-linearities and enables higher peak powers
- NuCOAT-FA-HP – for enhanced coating reliability in industrial environments
- Designed to work with existing matched passive fibers

## Optical Specifications

	<b>LMA-YDF-14/250-HP-XM 1365438</b>	<b>LMA-YDF-20/400-HP-XM 1398875</b>	<b>LMA-YDF-25/250-HP-XM</b>
Operating Wavelength	1015 – 1115 nm	1015 – 1115 nm	1015 – 1115 nm
Core NA	0.070 ± 0.005	0.065 ± 0.005	0.070 ± 0.005
First Cladding NA (5%)	≥ 0.46	≥ 0.46	≥ 0.46
Core Attenuation	≤ 20.0 dB/km @ 1200 nm	≤ 15.0 dB/km @ 1200 nm	≤ 25.0 dB/km @ 1200 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Cladding Absorption	0.80 ± 0.10 dB/m at 915 nm 3.40 dB/m near 976 nm	0.40 ± 0.05 dB/m at 915 nm	2.30 ± 0.30 dB/m at 915 nm 9.90 dB/m near 976 nm
Slope Efficiency	N/A	> 70.0% @ 915 nm	N/A

## Geometrical & Mechanical Specifications

Cladding Diameter (flat-to-flat)	250.0 ± 5.0 μm	400.0 ± 10.0 μm	250.0 ± 5.0 μm
Core Diameter	14.0 ± 1.0 μm	20.0 ± 1.5 μm	25.0 ± 1.5 μm
Coating Diameter	395.0 ± 15.0 μm	550.0 ± 15.0 μm	395.0 ± 15.0 μm
Core/Clad Offset	≤ 1.00 μm	≤ 2.00 μm	≤ 1.5 μm
Coating Material	Low Index Acrylate	Low Index Acrylate	Low Index Acrylate
Proofstress Level	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )	≥ 100 kpsi (0.7 GN/m <sup>2</sup> )



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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.