25/400 Ultra Matched+ Yb-doped LMA Double Clad Fibers

Coherent's Ultra Matched (M+) Large Mode Area (LMA) active double clad fibers are ideal for high power monolithic fiber lasers and amplifiers used in defense, industrial, and medical applications. These fibers feature a 25 micron diameter core and 400 micron diameter clad size with a low NA (0.065) core. These M+ fibers represent the next generation of matched fibers. They are matched with ultra-high precision to their passive 25/400 LMA M+ counterparts to ensure excellent splice compatibility and low loss. As with all Coherent standard LMA fibers, these fibers are proof tested to 100 kpsi, an industry requirement for long term reliability. The M+ fibers are specified to the tightest specifications including the MFD, and use NuCOAT-FA 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. These ultra matched fibers are available in non-PM (LMA) and PM (PLMA) versions.

Typical Applications

- Monolithic high power lasers & amplifiers
- Material processing
- Non-linear optics/frequency doubling
- Defense, industrial and medical

Features & Benefits

- Ultra Matched (M+) — Providing the lowest possible splice loss
- NuCOAT-FA fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- State of the art Yb-doped glass — Useful for generating high powers
- 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-25/400-M+**	**LMA-YDF-25/400-M+**
Operating Wavelength	1015 – 1115 nm	1060 – 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	19.2 ± 1.2 µm @ 1060 nm
Core Attenuation	≤ 40.0 dB/km @ 1300 nm ≤ 20.0 dB/km @ 1200 nm	≤ 15.0 dB/km @ 1200 nm ≤ 30.0 dB/km @ 1300 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Cladding Absorption	0.73 ± 0.07 dB/m at 915 nm	0.57 ± 0.07 dB/m at 915 nm
Birefringence	nominal 3.5×10^{-4}	N/A
Geometrical & Mechanical Specifications		
Cladding Diameter	405.0 ± 7.0 µm	N/A
Cladding Diameter (flat-to-flat)	N/A	400.0 ± 7.0 µm
Core Diameter	25.0 ± 1.5 µm	25.0 ± 1.5 µm
Coating Diameter	550.0 ± 15.0 µm	500.0 ± 15.0 µm
Core/Clad Offset	≤ 1.20 µm	≤ 1.20 µm
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)	≥ 100 kpsi (0.7 GN/m²)

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The ultra matched passive fiber also available.
Coating Requirements: Low Index Polymer NuCOAT-FA

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RoHS compliant

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25/400 Ultra Matched+ Passive LMA Double Clad Fiber

Coherent's Ultra Matched+ (M+) 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 25 micron diameter core and 400 micron diameter clad size with a low NA (0.065) core. These M+ fibers represent the next generation of matched fibers. They are matched with ultra-high precision to their active 25/400 LMA M+ counterparts to ensure excellent splice compatibility and low loss. As with all Coherent standard Large Mode Area (LMA) fibers, these fibers are proof-tested to 100 kpsi, an industry requirement for long term reliability. 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

- High peak power lasers & amplifiers
- LIDAR
- Material Processing
- Non-linear optics/frequency doubling

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 — 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-25/400-M+**
Operating Wavelength	1060 – 1600 nm
Core NA	0.065 ± 0.005
First Cladding NA (5%)	≥ 0.46
Mode Field Diameter	19.2 ± 1.2 µm @ 1060 nm
Core Attenuation	≤ 15.0 dB/km @ 1200 nm ≤ 30.0 dB/km @ 1300 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm
Geometrical & Mechanical Specifications	
Cladding Diameter	395.0 ± 3.0 µm
Core Diameter	25.0 ± 1.5 µm
Coating Diameter	550.0 ± 15.0 µm
Core/Clad Offset	≤ 1.20 µm
Clad Non-Circularity	≤ 0.5 %
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)

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The ultra matched active fiber is also available - see LMA-YDF-25/400-M+

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