

10/125 Erbium/Ytterbium-Doped Multimode Double Clad Fiber



Coherent's proprietary rare earth doping technology is used to deliver Er/Yb co-doped fibers with industry leading performance and reliability. These fibers feature 10 micron diameter core and a 125 micron diameter cladding with a 0.21 NA. The fiber design has been finely optimized to deliver the best performances for two distinct configurations. MM-EYDF-10/125-XP is designed to deliver ultra-high efficiencies while ensuring low threshold and high gain factors, ideal for CATV and telecom amplifiers. On the other hand, MM-EYDF-10/125-XPH is optimized to achieve tens of Watts of output power with high efficiency and suppressed 1 μm parasitic ASE, offering unmatched stability. The large core of the fiber allows for shorter fiber lengths in amplifier and laser systems to reduce the impact of non-linear effects. Utilizing Coherent's proprietary NuCOAT-FA coating technology, these fibers offer the best damp and dry heat performance available and ensure extended operating lifetime.

Typical Applications

- Laser and amplifiers at 1.5 μm (CATV and Telecom)
- Military and commercial LIDAR
- High peak power, pulsed fiber amplifiers

Features & Benefits

- Optimized XP design — High efficiency and low parasitic 1 μm ASE
- Large core — Enables shorter fiber length for high-power pulsed amplifiers
- Double clad design — High power performance and high power conversion efficiency
- NuCOAT-FA fluoroacrylate coating — Greater fiber durability in extreme operating and storage conditions
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability when coiling

Optical Specifications

	MM-EYDF-10/125-XP	MM-EYDF-10/125-XPH
Operating Wavelength	1530 – 1625 nm	1530 – 1625 nm
Core NA	0.210	0.210
First Cladding NA (5%)	≥ 0.46	≥ 0.46
Cladding Attenuation	$\leq 30.0 \text{ dB/km @ } 1095 \text{ nm}$	$\leq 30.0 \text{ dB/km @ } 1095 \text{ nm}$
Cladding Absorption	$2.90 \pm 0.60 \text{ dB/m at } 915 \text{ nm}$	$2.90 \pm 0.60 \text{ dB/m at } 915 \text{ nm}$
Core Absorption	$50.0 \pm 20.0 \text{ dB/m near } 1530 \text{ nm}$	$100.0 \pm 20.0 \text{ dB/m near } 1530 \text{ nm}$

Geometrical & Mechanical Specifications

	MM-EYDF-10/125-XP	MM-EYDF-10/125-XPH
Cladding Diameter (flat-to-flat)	$125.0 \pm 2.0 \mu\text{m}$	$125.0 \pm 2.0 \mu\text{m}$
Core Diameter	$10.0 \pm 1.0 \mu\text{m}$	$10.0 \pm 1.0 \mu\text{m}$
Coating Diameter	$215.0 \pm 5.0 \mu\text{m}$	$215.0 \pm 5.0 \mu\text{m}$
Coating Concentricity	$< 5.0 \mu\text{m}$	$< 5.0 \mu\text{m}$
Core/Clad Offset	$\leq 1.00 \mu\text{m}$	$\leq 1.00 \mu\text{m}$
Coating Material	Low Index Acrylate	Low Index Acrylate
Operating Temperature Range	N/A	-40 to 85 °C
Proof test Level	$\geq 100 \text{ kpsi (} 0.7 \text{ GN/m}^2\text{)}$	$\geq 100 \text{ kpsi (} 0.7 \text{ GN/m}^2\text{)}$



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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 Coherent can assist with your requirements.

1550-nm Single-Mode Double Clad Fibers



High power 1550 nm amplifiers based on double clad Er/Yb fibers are widely used in CATV and Telecom applications. The 1550 nm passive double clad fiber is ideal for use both as a pump and signal output fiber in combiners and as a laser delivery fiber. The high cut-off, bend insensitive design of this fiber ensures excellent signal confinement, while allowing for low splice loss to Er/Yb doped double clad fibers and industry standard SMF-28™ fiber. They are available in both non-PM design for traditional high power amplifiers and in PANDA-style PM design for high power coherent communications and frequency conversion applications.

Typical Applications

- CATV and Telecom amplifiers
- Laser delivery/fluorescence

Features & Benefits

- NuCOAT™ fluorocrylate coating – Greater fiber durability in extreme environmental operating & storage conditions
- Exceptional uniformity and core/clad concentricity — Low connectorization losses
- Bend insensitive — Survives application in tight confines
- All fiber proof tested to > 100 kpsi — Critical for ensuring long term reliability

Optical Specifications

	PM-GDF-1550	SM-GDF-1550
Operating Wavelength	1450 – 1600 nm	1450 – 1600 nm
Core NA	0.120	0.120
First Cladding NA (5%)	≥ 0.46	≥ 0.460
Mode Field Diameter	10.5 ± 0.7 μm @ 1550 nm	10.5 ± 0.7 μm @ 1550 nm
Cutoff	1440 ± 80 nm	1440 ± 80 nm
Core Attenuation	≤ 2.0 dB/km @ 1550 nm	≤ 1.00 dB/km @ 1550 nm
Cladding Attenuation	≤ 15.0 dB/km @ 1095 nm	≤ 15.0 dB/km @ 1095 nm
Birefringence	2.5 × 10 ⁻⁴	N/A

Geometrical & Mechanical Specifications

	PM-GDF-1550	SM-GDF-1550
Cladding Diameter	130.0 ± 1.0 μm	125.0 ± 1.0 μm
Core Diameter	9 μm	9 μm
Coating Diameter	245.0 ± 10.0 μm	245.0 ± 10.0 μm
Coating Concentricity	< 5.0 μm	< 5.0 μm
Core/Clad Offset	≤ 0.50 μm	≤ 0.50 μm
Proof Test Level	≥ 100 kpsi (0.7 GN/m ²)	≥ 100 kpsi (0.7 GN/m ²)



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