

5/130 Ytterbium-Doped Double-Clad Fiber



Nufern's general purpose Ytterbium-Doped Double-Clad Fiber is available in two-versions — PANDA-style, polarization-maintaining (PM) and non-PM. Designed specifically for CW applications around 1-15 W, these fibers are ideal for applications requiring low-cost fiber laser and amplifier source, such as laser marking, fiber amplifier pumps and IR sources for frequency doubling. These fibers' telecom-type geometrics are compatible with readily available low-cost pump diodes and fiber-based components.

Typical Applications

- Laser marking
- Fiber amplifier pumps
- IR sources for frequency doubling

Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- Low cost double-clad technology — Enables use of high power multimode pump diodes
- Single-mode output — Compatible with standard telecom 980/1060 nm fiber-based components
- PANDA-style stress structure — Linearly polarized output for frequency conversion

Optical Specifications

| | PM-YDF-5/130-VIII | SM-YDF-5/130-VIII |
|------------------------|---|---|
| Operating Wavelength | 1060 – 1115 nm | 1060 – 1115 nm |
| Core NA | 0.120 | 0.120 |
| First Cladding NA (5%) | ≥ 0.46 | ≥ 0.46 |
| Mode Field Diameter | 6.5 ± 0.5 μm @ 1060 nm | 6.5 ± 0.5 μm @ 1060 nm |
| Cutoff | 950 ± 50 nm | 950 ± 50 nm |
| Core Attenuation | ≤ 15.0 dB/km @ 1200 nm | ≤ 10.0 dB/km @ 1200 nm |
| Cladding Attenuation | ≤ 15.0 dB/km @ 1095 nm | ≤ 15.0 dB/km @ 1095 nm |
| Cladding Absorption | 0.60 ± 0.10 dB/m at 915 nm 1.80 dB/m near 975 nm | 0.55 ± 0.10 dB/m at 915 nm 1.65 dB/m near 975 nm |
| Birefringence | 2.5 × 10 ⁻⁴ | N/A |

Geometrical & Mechanical Specifications

| | | |
|----------------------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter | 130.0 ± 1.0 μm | N/A |
| Cladding Diameter (flat-to-flat) | N/A | 130.0 ± 1.5 μm |
| Core Diameter | 5.0 μm | 5.0 μm |
| Coating Diameter | 245.0 ± 10.0 μm | 245.0 ± 10.0 μm |
| Coating Concentricity | < 5.0 μm | < 5.0 μm |
| Core/Clad Offset | ≤ 1.00 μm | ≤ 1.00 μm |
| Proof-test Level | ≥ 100 kpsi (0.7 GN/m ²) | ≥ 100 kpsi (0.7 GN/m ²) |

The passive version of each fiber is also available - see PM-GDF-5/130 and SM-GDF-5/130



7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 E-mail info@nufern.com • www.nufern.com • Nufern products are manufactured under an ISO 9001:2008 certified quality management system.



Standard specifications and design parameters are listed above. 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.

5/130 Passive Double Clad Fibers



Nufer's general purpose passive double-clad fiber is available in two-versions — PANDA-style, polarization-maintaining (PM) and non-PM. Designed specifically to work with 5/130 Yb-doped active fibers for CW applications at lower powers, ensuring low loss and improved splice compatability. These fibers' telecom-type geometrics are compatible with readily available low-cost pump diodes and fiber-based components. They utilize the latest fiber design and NuCOAT™ coating technology to ensure excellent preservation of beam quality and extended operating life demanded by today's industrial fiber laser applications.

Typical Applications

- Laser marking
- Fiber amplifier pumps
- IR sources for frequency doubling

Features & Benefits

- NuCOAT™ fluoroacrylate coating — Greater fiber durability in extreme environmental operating & storage conditions
- Low cost double-clad technology — Enables use of high power multimode pump diodes
- Single-mode output — Compatible with standard telecom 980/1060 nm fiber-based components
- PANDA-style stress structure — Linearly polarized output for frequency conversion"

Optical Specifications

| | PM-GDF-5/130 | SM-GDF-5/130 |
|------------------------|------------------------|------------------------|
| Operating Wavelength | 1060 – 1600 nm | 1060 – 1600 nm |
| Core NA | 0.120 | 0.120 |
| First Cladding NA (5%) | ≥ 0.46 | ≥ 0.46 |
| Mode Field Diameter | 6.5 ± 0.5 μm @ 1060 nm | 6.5 ± 0.5 μm @ 1060 nm |
| Cutoff | 950 ± 50 nm | 950 ± 50 nm |
| Core Attenuation | ≤ 10.0 dB/km @ 1200 nm | ≤ 10.0 dB/km @ 1200 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-5/130 | SM-GDF-5/130 |
|-----------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter | 130.0 ± 1.0 μm | 130.0 ± 1.0 μm |
| Core Diameter | 5.0 μm | 5.0 μm |
| Coating Diameter | 245.0 ± 10.0 μm | 245.0 ± 10.0 μm |
| Coating Concentricity | < 5.0 μm | < 5.0 μm |
| Core/Clad Offset | ≤ 1.00 μm | ≤ 1.00 μm |
| Proofstress Level | ≥ 100 kpsi (0.7 GN/m ²) | ≥ 100 kpsi (0.7 GN/m ²) |

The active version of each fiber is also available - see PM-YDF-5/130-VIII and SM-YDF-5/130-VIII



7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 E-mail info @ nufern.com • www.nufern.com • Nufern products are manufactured under an ISO 9001:2008 certified quality management system.



Standard specifications and design parameters are listed above. 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.