

Ultra-High NA Single-Mode Fibers



Nufern Ultra-High NA fibers are part of the NuBRIDGE™ fiber family and are excellent bridge fibers between high NA waveguides and low NA transmission fiber. Ultra-High NA fibers provide excellent coupling efficiencies to high NA waveguides. In addition, the composition of Ultra-High NA fibers are tailored to thermally expand the core during splicing thus achieving lower splice loss to transmission fiber.

Typical Applications

- Fluoride and other non-silica fibers
- Planar Waveguides
- Silicon photonics devices
- Fiber tails for high NA sources
- Bridge fiber

Features & Benefits

- High numerical aperture — Bend insensitive fiber for miniature packages
- Thermally expandable core — Low splice loss to transmission fiber
- Small Mode Field Diameter — High coupling efficiency with Planar Waveguides

Optical Specifications

Operating Wavelength
Core NA
Mode Field Diameter

UHNA1

1100 – 1600 nm
0.280
4.0 ± 0.3 μm @ 1310 nm
4.8 ± 0.3 μm @ 1550 nm
3.3 ± 0.3 μm @ 1100 nm
1000 ± 50 nm

UHNA3

960 – 1600 nm
0.350
3.3 ± 0.3 μm @ 1310 nm
4.1 ± 0.3 μm @ 1550 nm
2.6 ± 0.3 μm @ 1100 nm
900 ± 50 nm

UHNA4

1100 – 1600 nm
0.350
3.3 ± 0.3 μm @ 1310 nm
4.0 ± 0.3 μm @ 1550 nm
2.6 ± 0.3 μm @ 1100 nm
1050 ± 50 nm

UHNA7

1500 – 2000 nm
0.410
3.2 ± 0.3 μm @ 1550 nm
1450 ± 50 nm

Geometrical & Mechanical Specifications

Cladding Diameter
Core Diameter
Coating Diameter
Coating Concentricity
Core/Clad Offset
Coating Material
Operating Temperature Range
Short Term Bend Radius
Long Term Bend Radius
Proof test Level

125.0 ± 1.0 μm
2.5 μm
250.0 ± 20.0 μm
< 5.0 μm
≤ 0.50 μm
UV Cured, Dual Acrylate
-55 to 85 °C
≥ 12 mm
≥ 25 mm
≥ 100 kpsi (0.7 GN/m²)

125.0 ± 1.0 μm
1.8 μm
250.0 ± 20.0 μm
< 5.0 μm
≤ 0.50 μm
UV Cured, Dual Acrylate
-55 to 85 °C
≥ 12 mm
≥ 25 mm
≥ 100 kpsi (0.7 GN/m²)

125.0 ± 1.0 μm
2.2 μm
250.0 ± 20.0 μm
< 5.0 μm
≤ 0.50 μm
UV Cured, Dual Acrylate
-55 to 85 °C
≥ 12 mm
≥ 25 mm
≥ 100 kpsi (0.7 GN/m²)

125.0 ± 1.0 μm
2.4 μm
250.0 ± 20.0 μm
< 5.0 μm
≤ 0.50 μm
UV Cured, Dual Acrylate
-55 to 85 °C
≥ 12 mm
≥ 25 mm
≥ 100 kpsi (0.7 GN/m²)



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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.

