

Visible Wavelength Select Cutoff Single-Mode Fibers

Nufern visible wavelength fibers are optimized for use from 400 up to 900 nm. The high-performance fibers were developed for applications such as RGB components requiring generation of couplers, diode pigtailed and unique delivery needs. These fibers feature greater proof test levels and a higher second mode cutoff tolerance than standard fibers, resulting in higher strength, increased component reliability, better production yields and reduced costs for component manufacturers.

Typical Applications

- Diode Pigtailed
- Compact UV sources
- RGB components
- Couplers

Features & Benefits

- Superior fiber geometrical tolerances — Improved connectorization and coupling performance
- Extremely tight second mode cutoff tolerance — Enhanced component reproducibility
- Higher proof test level — Greater reliability for tight bend applications

Optical Specifications

Operating Wavelength (nominal)
 Mode Field Diameter (1/e² fit - near field)
 Second Mode Cutoff
 Attenuation
 Numerical Aperture (nominal)
 Bend Loss for 100 turns @ LTBR (nominal)
 Bend Radius for 0.05 dB per 100 turns (nominal)

405-HP

400– 550 nm
 3.5 ± 0.5 μm @ 515 nm
 370 ± 20 nm
 30 dB/km @ 515 nm (nominal)
 0.13
 <0.001 dB @ 405 nm
 Much less than LTBR @ 405 nm

460-HP

450 – 600 nm
 3.5 ± 0.5 μm @ 515 nm
 430 ± 20 nm
 30 dB/km @ 515 nm (nominal)
 0.13
 <0.001 dB @ 460 nm
 Much less than LTBR @ 460 nm

630-HP

600 - 770 nm
 4.0 ± 0.5 μm @ 630 nm
 570 ± 30 nm
 ≤12 dB/km @ 630 nm
 0.13
 <0.001 dB @ 630 nm
 Much less than LTBR @ 630 nm

Geometrical & Mechanical Specifications

Clad Diameter
 Coating Diameter
 Core-Clad Concentricity
 Coating/Clad Offset
 Coating Material
 Operating Temperature
 Short-Term Bend Radius
 Long-Term Bend Radius
 Proof Test Level

125 ± 1 μm
 245 ± 15 μm
 < 0.5 μm
 ≤ 5 μm
 UV Cured, Dual Acrylate
 - 55 to + 85°C
 ≥ 6 mm
 ≥ 13 mm
 ≥ 200 kpsi (1.4 GN/m²)

125.0 ± 1.5 μm
 245 ± 15 μm
 < 0.5 μm
 ≤ 5 μm
 UV Cured, Dual Acrylate
 - 55 to + 85°C
 ≥ 6 mm
 ≥ 13 mm
 ≥ 200 kpsi (1.4 GN/m²)

125.0 ± 1.5 μm
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 < 0.5 μm
 ≤ 5 μm
 UV Cured, Dual Acrylate
 - 55 to + 85°C
 ≥ 6 mm
 ≥ 13 mm
 ≥ 200 kpsi (1.4 GN/m²)



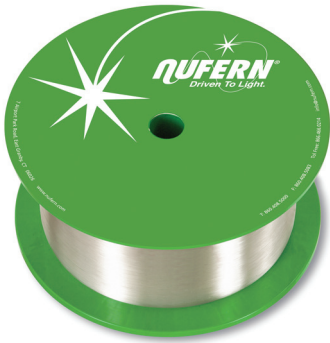
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Nufern 780 nm Select Cut-Off Single-Mode Fiber



Nufern's 780-HP high-performance select cut-off single-mode fiber is optimized at near IR wavelengths. This application-specific fiber was developed for applications requiring coupler generation, diode pigtailed and unique delivery needs for the near IR continuum. Compared to the best fibers available today, 780-HP fiber features higher proof test levels and tighter second mode cut-off tolerance. These features result in higher strength, increased component reliability, improved production yields and reduced costs for component manufacturers.

Typical Applications

- Couplers
- Diode pigtailed

Features & Benefits

- Superior fiber geometrical tolerances — Improved connectorization and coupling performance
- Extremely tight second mode cutoff tolerance — Enhanced component reproducibility
- Higher proof test level — Greater reliability for tight bend applications

Optical Specifications

Operating Wavelength (nominal)
Mode Field Diameter (1/e² fit - near field)
Second Mode Cut-Off
Attenuation (nominal)
Attenuation
Numerical Aperture (nominal)
Bend Loss for 100 turns @ 13 mm radius
Bend Radius for 0.05 dB per 100 turns

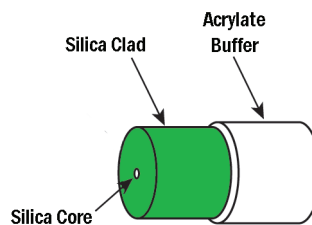
780-HP

780 - 970 nm
5.0 ± 0.5 μm @ 850 nm
730 ± 30 nm
4 dB/km @ 780 nm
< 3.5 dB/km @850 nm
0.13
< 0.001 dB @ 780 nm
Less than LTBR @ 780 nm

Geometrical & Mechanical Specifications

Clad Diameter
Coating Diameter
Core-Clad Concentricity
Coating/Clad Offset
Coating Material
Operating Temperature
Short-Term Bend Radius
Long-Term Bend Radius
Proof Test Level

125.0 ± 1.5 μm
245 ± 15 μm
< 0.5 μm
≤ 5 μm
UV Curable, Dual Acrylate
-55 to +85° C
≥ 6 mm
≥ 13 mm
≥ 200 kpsi (1.4 GN/m²)



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Pure Silica Core Visible Wavelength Fibers



Nuferm's pure silica core fibers are optimized for use at visible wavelengths from 400 up to 700 nm. These high-performance fibers were developed for applications such as RGB components requiring couplers, diode pigtailed and unique delivery needs. The pure silica core fibers were designed for more demanding applications that require lower attenuation and higher resistance to radiation and color center formation compared to germanium-doped fibers. An extended range (XP) version of S405 replaces the HP version offering a broader operational wavelength range.

Typical Applications

- Diode Pigtailed
- Compact UV sources
- RGB components

Features & Benefits

- Tight specifications — Highly deterministic results, highest product yield
- High proof test — Low risk of mechanical damage and failure
- High fatigue failure resistance — Longest service life
- Pure silica core — Resistance to radiation-induced damage and color center formation

Optical Specifications

	S405-XP	S460-HP	S630-HP
Operating Wavelength	400 – 680 nm	460 – 600 nm	630 – 860 nm
Core NA	0.120	0.120	0.120
Mode Field Diameter (Gaussian)	3.3 ± 0.5 μm @ 405 nm 4.6 ± 0.5 μm @ 630 nm	3.4 μm @ 460 nm (nominal)	4.2 ± 0.5 μm @ 630 nm
Cutoff	380 ± 20 nm	425 ± 25 nm	590 ± 30 nm
Core Attenuation	≤ 30.0 dB/km @ 630 nm ≤ 30.0 dB/km @ 488 nm	≤ 30.0 dB/km @ 460 nm	≤ 10.0 dB/km @ 630 nm

Geometrical & Mechanical Specifications

	S405-XP	S460-HP	S630-HP
Cladding Diameter	125.0 ± 1.0 μm	125.0 ± 1.0 μm	125.0 ± 1.0 μm
Core Diameter	3.0 μm	3.0 μm	3.5 μm
Coating Diameter	245.0 ± 15.0 μm	245.0 ± 15.0 μm	245.0 ± 15.0 μm
Coating Concentricity	< 5.0 μm	< 5.0 μm	< 5.0 μm
Core/Clad Offset	≤ 0.60 μm	≤ 0.50 μm	≤ 0.50 μm
Coating Material	UV Cured, Dual Acrylate	UV Cured, Dual Acrylate	UV Cured, Dual Acrylate
Operating Temperature Range	-60 to 85 °C	-55 to 85 °C	-55 to 85 °C
Short Term Bend Radius	≥ 6 mm	≥ 6 mm	≥ 6 mm
Long Term Bend Radius	≥ 13 mm	≥ 13 mm	≥ 13 mm
Proof test Level	≥ 200 kpsi (1.4 GN/m ²)	≥ 200 kpsi (1.4 GN/m ²)	≥ 200 kpsi (1.4 GN/m ²)



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 Nuferm can assist with your requirements.

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