

# 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 tighter 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

|                                | 405-HP   | 460-HP   | 630-HP                |
|--------------------------------|--|--|-----------------------|
| Operating Wavelength           | 400 – 550 nm                                   | 450 – 600 nm                                   | 600 – 770 nm          |
| Core NA                        | 0.130  | 0.130  | 0.130                 |
| Mode Field Diameter (Gaussian) | 3.5 ± 0.5 μm @ 515 nm                          | 3.5 ± 0.5 μm @ 515 nm                          | 4.0 ± 0.5 μm @ 630 nm |
| Cutoff                         | 370 ± 20 nm                                    | 430 ± 20 nm                                    | 570 ± 30 nm           |
| Core Attenuation               | ≤ 30.0 dB/km @ 515 nm<br>≤ 12.0 dB/km @ 630 nm | ≤ 12.0 dB/km @ 630 nm<br>≤ 30.0 dB/km @ 515 nm | ≤ 12.0 dB/km @ 630 nm |

## Geometrical & Mechanical Specifications

|                             | 405-HP                              | 460-HP                              | 630-HP                              |
|-----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter           | 125.0 ± 1.0 μm                      | 125.0 ± 1.0 μm                      | 125.0 ± 1.0 μm                      |
| Core Diameter               | 2.1 μm                              | 2.5 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            | ≤ 0.50 μm                           | ≤ 0.50 μm                           | ≤ 0.50 μm                           |
| Coating Material            | UV Cured, Dual Acrylate             | UV Cured, Dual Acrylate             | UV Cured, Dual Acrylate             |
| Operating Temperature Range | -55 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 <sup>2</sup> ) | ≥ 200 kpsi (1.4 GN/m <sup>2</sup> ) | ≥ 200 kpsi (1.4 GN/m <sup>2</sup> ) |

405-HP and 460-HP are designed for lower power applications. For powers >5-10 mW, Nufern S405-XP and S460-XP fibers are recommended.



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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.