

Specialty Multi-Mode Radiation Resistant Fibers



Nufern's radiation resistant specialty multi-mode fibers are designed to operate for extended periods of time on low earth orbits, near and deep space, and in applications where risk of exposure to man-made radiation is great. As with the traditional Nufern MM fiber, these fibers are capable of withstanding extreme environments and large and fast temperature swings. Features include step index and graded index configurations, numerical apertures from 0.06 to 0.45 and core sizes from 10 μm to 700 μm . All fibers are available with a high temperature acrylate, silicone, or polyimide coating.

Typical Applications

- Airframe, spacecraft, missile and UAV optical interconnects
- Large bandwidth tactical cables
- Robust duty in extreme military and classified environments

Features & Benefits

- Radiation resistance — Useful in radiation environments.
- Operate over wide frequency range — One fiber serves broad applications
- Exceptional uniformity and core/clad concentricity — Minimize fiber induced signal artifacts
- Higher proof test levels — Longest life expectancy
- Tight diameter control — Lowest cost deployments

Optical Specifications

Operating Wavelength
Core NA
Bandwidth

Core Attenuation

Geometrical & Mechanical Specifications

Cladding Diameter
Core Diameter
Coating Diameter
Core/Clad Offset
Core Index Profile
Coating Material

Operating Temperature Range
Proof Test Level

GR-50/125-23HTA

800 – 1350 nm
 0.230 ± 0.015
 $\geq 1000 \text{ MHz-km @ } 850 \text{ nm}$
 $\geq 300 \text{ MHz-km @ } 1300 \text{ nm}$
 $\leq 1.20 \text{ dB/km @ } 1300 \text{ nm}$
 $\leq 3.50 \text{ dB/km @ } 850 \text{ nm}$

GR-62.5/125-27HTA

800 – 1350 nm
 0.275 ± 0.015
 $\geq 160 \text{ MHz-km @ } 850 \text{ nm}$
 $\geq 500 \text{ MHz-km @ } 1300 \text{ nm}$
 $\leq 0.90 \text{ dB/km @ } 1300 \text{ nm}$
 $\leq 3.50 \text{ dB/km @ } 850 \text{ nm}$

GR-100/140-24HTA

800 – 1350 nm
 0.240 ± 0.020
 $\geq 200 \text{ MHz-km @ } 850 \text{ nm}$
 $\geq 200 \text{ MHz-km @ } 1300 \text{ nm}$
 $\leq 5.00 \text{ dB/km @ } 1300 \text{ nm}$
 $\leq 7.00 \text{ dB/km @ } 850 \text{ nm}$

$125.0 \pm 2.0 \mu\text{m}$
 $50.0 \pm 3.0 \mu\text{m}$
 $245.0 \pm 15.0 \mu\text{m}$
 $\leq 3.00 \mu\text{m}$
Graded Index
Dual Layer, High
Temperature Acrylate
-55 to 125 °C
 $\geq 100 \text{ kpsi (0.7 GN/m}^2\text{)}$

$125.0 \pm 2.0 \mu\text{m}$
 $62.5 \pm 3.0 \mu\text{m}$
 $245.0 \pm 15.0 \mu\text{m}$
 $\leq 3.00 \mu\text{m}$
Graded Index
Dual Layer, High
Temperature Acrylate
-55 to 125 °C
 $\geq 100 \text{ kpsi (0.7 GN/m}^2\text{)}$

$140.0 \pm 3.0 \mu\text{m}$
 $100.0 \pm 4.0 \mu\text{m}$
 $245.0 \pm 15.0 \mu\text{m}$
 $\leq 5.00 \mu\text{m}$
Graded Index
Dual Layer, High
Temperature Acrylate
-55 to 125 °C
 $\geq 100 \text{ kpsi (0.7 GN/m}^2\text{)}$



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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.

