1310/1550 nm Single-Mode Radiation Hardened Fibers

This family of two different single-mode fibers is specifically designed for non-traditional data and telecom applications that use standard telecom wavelengths. Tactical fiber survives and transmits light even under extreme mechanical duress. The R1310-HTA operates identically to SMF-28™ with improved radiation performance. It is also EMP immune and can withstand very high electrical field strengths. All fibers in this series come with high proof strength, large Weibull modulus, and superior dynamic fatigue parameter to maintain high mechanical reliability (long lifetimes). To meet the challenges of the harsh tactical, avionics/aerospace, missile and UAV working environments, the fibers have high temperature acrylate as the standard coating. * SMF-28 is a registered trademark of Corning, Inc.

Typical Applications

- Airframe, Spacecraft, Missile and UAV optical interconnects
- Large bandwidth tactical cables
- Miniature fiber optic packages

Features & Benefits

- Exceptional uniformity and core/clad concentricity—Low connectorization losses
- High proof test level, high Weibull modulus and high dynamic fatigue parameter—Long lifetimes in deployment conditions
- High temperature coating—Survival in hostile environment
- Bend insensitive versions—Survives application in tight confines
- Rad resistant & rad hard versions—Useful in radiation environments

Optical Specifications	**R1310-HTA**	**1310M-HTA**
Operating Wavelength	1310 – 1620 nm	1310 – 1620 nm
Core NA	0.120	0.160
Mode Field Diameter	10.5 ± 1.0 µm @ 1550 nm 9.1 ± 1.0 µm @ 1310 nm	6.7 ± 1.0 µm @ 1310 nm
Cutoff	1250 ± 50 nm	1250 ± 50 nm
Core Attenuation	≤ 0.75 dB/km @ 1310 nm ≤ 0.50 dB/km @ 1550 nm	≤ 0.75 dB/km @ 1310 nm ≤ 0.50 dB/km @ 1550 nm
Geometrical & Mechanical Specifications		
Cladding Diameter	125.0 ± 1.0 µm	125.0 ± 1.0 µm
Core Diameter	9.0 µm	6.0 µm
Coating Diameter	245.0 ± 15.0 µm	245.0 ± 15.0 µm
Coating Concentricity	< 5.0 µm	< 5.0 µm
Core/Clad Offset	≤ 0.50 µm	≤ 0.50 µm
Coating Material	Dual Layer, High Temperature Acrylate	Dual Layer, High Temperature Acrylate
Operating Temperature Range	-55 to 125 °C	-55 to 125 °C
Short Term Bend Radius	≥ 6 mm	≥ 6 mm
Long Term Bend Radius	≥ 13 mm	≥ 13 mm
Prooftest Level	≥ 200 kpsi (1.4 GN/m²)	≥ 200 kpsi (1.4 GN/m²)

Coating Requirements: Dual Layer, High Temperature Acrylate
Radiation Requirements: Step Index, Radiation Resistant Core

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Nufern products are manufactured under an ISO 9001:2008 certified quality management system.

RoHS

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.

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