Single-Mode Bend Insensitive Radiation Hardened Fibers

These pure silica core S1550-HTA fibers are single-mode fibers designed to be bend insensitive and withstand extreme pulsed and continuous ionizing radiation. They have high proof strength, large Weibull modulus, and superior dynamic fatigue parameter to maintain high mechanical reliability (long lifetimes). Available in both 125 and 80 µm clad diameters, they are ideally suited for special sensor applications or applications requiring coils. These fibers feature high temperature acrylate as standard coating to meet the challenges of the harsh tactical, avionics/aerospace, missile and UAV working environments.

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
- Bend insensitive — Survives application in tight confines
- Rad resistant & rad hard — Useful in radiation environments

Optical Specifications	**S1550-HTA**	**S1550-80-HTA**
Operating Wavelength	1520 – 1630 nm	1520 – 1630 nm
Core NA	0.160	0.160
Mode Field Diameter	7.0 ± 1.0 µm @ 1550 nm	7.5 ± 0.8 µm @ 1550 nm
Cutoff	1450 ± 70 nm	1450 ± 70 nm
Core Attenuation	≤ 1.0 dB/km @ 1550 nm	≤ 1.0 dB/km @ 1550 nm
Geometrical & Mechanical Specifications		
Cladding Diameter	125.0 ± 1.0 µm	80 ± 2 µm
Core Diameter	7.8 µm	7.8 µm
Coating Diameter	245.0 ± 15.0 µm	125.0 ± 5.0 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	≥ 12 mm	≥ 8 mm
Long Term Bend Radius	≥ 25 mm	≥ 16 mm
Prooftest Level	≥ 100 kpsi (0.7 GN/m²)	≥ 100 kpsi (0.7 GN/m²)

Note: These fibers are U.S. Department of Commerce Export Controlled.

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