

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	$7.0 \pm 1.0 \mu\text{m}$ @ 1550 nm	$7.5 \pm 0.8 \mu\text{m}$ @ 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

	S1550-HTA	S1550-80-HTA
Cladding Diameter	$125.0 \pm 1.0 \mu\text{m}$	$80 \pm 2 \mu\text{m}$
Core Diameter	$7.8 \mu\text{m}$	$7.8 \mu\text{m}$
Coating Diameter	$245.0 \pm 15.0 \mu\text{m}$	$125.0 \pm 5.0 \mu\text{m}$
Coating Concentricity	$< 5.0 \mu\text{m}$	$< 5.0 \mu\text{m}$
Core/Clad Offset	$\leq 0.50 \mu\text{m}$	$\leq 0.50 \mu\text{m}$
Coating Material	High Temperature Acrylate	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
Proof Test Level	≥ 100 kpsi (0.7 GN/m ²)	≥ 100 kpsi (0.7 GN/m ²)



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

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www.coherent.com ; www.shop.coherent.com • Coherent products are manufactured under an ISO 9001:2008 certified quality management system.



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 Coherent can assist with your requirements.