

NuSENSOR 1310/1550 nm Pure Silica Core Single-Mode Fibers



Coherent's NuSENSOR pure silica core single-mode fiber are immune to the damaging effects of hydrogen ingress, enabling Brillouin, Rayleigh and FBG based distributed temperature and strain sensing in harsh environments. These 0.12 NA fibers are optimized for operation at both 1310 nm and 1550 nm. NuSENSOR single-mode fibers provide tight tolerance optical and geometrical specifications measured at the application critical wavelengths. The fibers come with either a polyimide or mid-temperature acrylate coating and are also available with a hermetic carbon layer. For high H₂ partial pressure and elevated temperature up to 300°C, you will find no measurable induced loss for typical sensing applications.

Typical Applications

- Enhanced oil recovery processes
- Hydrothermal well temperature measurements
- Oil reservoir optimization
- Brillouin distributed temperature & strain sensing

Features & Benefits

- Resistant to H₂ ingress — Low cost, long life deployment
- Exceptional uniformity — Consistent and repeatable performance
- Long unattended deployments or short cycle in-out applications
- Low loss over the wavelengths range critical to DTSS
- Available with hermetic carbon coating

Optical Specifications

| | S1310-P | S1310-CP | S1310-MTA | S1310-CMTA |
|----------------------|---|---|---|---|
| Operating Wavelength | 1310 – 1600 nm |
| Core NA | 0.120 | 0.120 | 0.120 | 0.120 |
| Mode Field Diameter | 9.2 ± 0.6 μm @ 1310 nm 10.4 ± 0.8 μm @ 1550 nm | 9.2 ± 0.6 μm @ 1310 nm 10.4 ± 0.8 μm @ 1550 nm | 9.2 ± 0.6 μm @ 1310 nm 10.4 ± 0.8 μm @ 1550 nm | 9.2 ± 0.6 μm @ 1310 nm 10.4 ± 0.8 μm @ 1550 nm |
| Cutoff | 1250 ± 50 nm |
| Core Attenuation | ≤ 0.80 dB/km @ 1310 nm ≤ 0.80 dB/km @ 1550 nm | ≤ 0.80 dB/km @ 1310 nm ≤ 0.80 dB/km @ 1550 nm | ≤ 0.80 dB/km @ 1310 nm ≤ 0.80 dB/km @ 1550 nm | ≤ 0.80 dB/km @ 1310 nm ≤ 0.80 dB/km @ 1550 nm |

Geometrical & Mechanical Specifications

| | S1310-P | S1310-CP | S1310-MTA | S1310-CMTA |
|-----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Cladding Diameter | 125.0 ± 1.0 μm |
| Core Diameter | 8.0 μm | 8.0 μm | 8.0 μm | 8.0 μm |
| Coating Diameter | 150.0 ± 5.0 μm | 150.0 ± 5.0 μm | 245.0 ± 5.0 μm | 245.0 ± 5.0 μm |
| Coating Concentricity | < 1.5 μm | < 1.5 μm | < 5.0 μm | < 5.0 μm |
| Core/Clad Offset | ≤ 0.50 μm | ≤ 0.50 μm | ≤ 0.50 μm | ≤ 0.50 μm |
| Coating Material | Polyimide | Polyimide | Mid Temperature Acrylate | Mid Temperature Acrylate |
| Operating Temperature Range | -65 to 300 °C | -65 to 300 °C | -40 to 150 °C | -40 to 150 °C |
| Proof Test Level | ≥ 100 kpsi (0.7 GN/m ²) |



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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.