Single Mode Fiber:

SM450

488 - 633 nm

Description

THORLABS

Thorlabs' specialty single mode fibers are engineered for a variety of applications including biotechnology, laser delivery, and telecommunications. These fibers offer enhanced bend-insensitivity as well as reduced splice loss while providing excellent resistance to bend induced loss similar to that of conventional type fibers.

Specifications

| Geometrical & Mechanical | | |
|-----------------------------|---------------|--|
| Cladding Diameter | 125 ± 1.0 μm | |
| Coating Diameter | 245 ± 15 μm | |
| Core-Cladding Concentricity | ≤0.75 μm | |
| Coating-Cladding Offset | ≤5 μm | |
| Coating Material | Dual Acrylate | |
| Proof Test Level | 1% (100 kpsi) | |
| Operating Temperature | -55 to 85 °C | |

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| Optical | | |
|-----------------------------------|-----------------------|--|
| Numerical Aperture (Nominal) | 0.10 - 0.14 | |
| Attenuation ^a | ≤50 dB/km @ 488 nm | |
| Operating Wavelength ^b | 488 - 633 nm | |
| Cut-Off Wavelength | 350 - 470 nm | |
| Mode Field Diameter ^c | 2.8 - 4.1 µm @ 488 nm | |

a. Attenuation is a worst-case value, quoted for the shortest design wavelength.

b. The wavelength range is the spectral region between the cutoff wavelength and the bend edge, in which the fiber transmits the TEM_{00} mode with low attenuation. For this fiber, the bend edge wavelength is typically 200 nm longer than the cut-off wavelength. At the operating wavelengths between 488 nm and 633 nm, the launched power must be considered carefully as these fibers have germanosilicate cores, and as such are susceptible to color center generation.

c. The Mode Field Diameter is a nominal, calculated value, estimated at the operating wavelength(s) using typical value of numerical aperture and cut-off wavelength.

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