3M™ POLARIZATION MAINTAINING FIBERS

Advantages

- Lower Cost Alternative to PM Series Fibers in Less Demanding Applications Such as Medium-accuracy Interferometric Sensors
- Lower Stress Birefringence Level Results in Easier, higher-yield Cleaves & Splices
- High Numerical Aperture Design Prevents Signal Loss Under Tight Bends & Preserves Optical Performance in Miniature Packaging Applications & Standard Cable Designs
- Stress-induced Birefringence Allows Low-loss Transmission of Polarized Light with Little Cross Talk Between Fiber Polarization Modes
- Dual-component Fiber Coating System Offers Stable Polarization Performance Over a Wide Temperature Range
- Smaller Fiber Coating Sizes in a Reduced Profile Allow High-density Fiber Packaging

Applications

- Interferometric Sensors
  — Fiber Optic Gyroscopes
- High-Coherence Light Transmission

3M™ LOW-STRESS PM FIBER — LS SERIES

SPECIFICATIONS	FS-LS-4616	FS-LS-7511
Operating Wavelength[1]	820nm	1550nm
Mode Field Diameter[2]	5.3 ± 0.5µm	6.0 ± 0.5µm
Second Mode Cut-Off	< 780nm	< 1520nm
Attenuation — Maximum — Typical	 5.0dB/km @ 820nm 3.0dB/km @ 820nm	 3.0dB/km @ 1550nm 2.6dB/km @ 1550nm
Fiber Diameter	80 ± 2µm	80 ± 2µm
Maximum Core/OD Offset[3]	1.0µm	1.0µm
Coating Diameter	200 ± 15µm	165 ± 10µm
Birefringence — Maximum — Typical	 2.0mm @ 633nm 1.5mm @ 633nm	 2.0mm @ 633nm 16mm @ 633nm
Typical *h* Parameter[4]	< 5 x 10^{-4}/m	< 5 x 10^{-4}/m
Coating Type	Soft Primary/Acrylate	Soft Primary/Acrylate
Operating Temperature Range	–55 to +85 °C	–55 to +105 °C
Proof Test Level[5]	100 kpsi	100 kpsi
Minimum Bend Diameter — Optical[6] — Mechanical[7]	 20mm 16mm	 12mm 16mm
Standard Length[8]	1100m	1100m

1 A fiber's operating wavelength band typically extends 200 to 300nm above the specified second mode cutoff wavelength.
2 Measured at operating wavelength per EIA/TIA-455-167A.
3 Tighter tolerance can be provided.
4 As measured on standard 6-inch shipping spool.
5 Fiber with higher tensile level can be provided
6 Bend test criteria of 20 turns with no induced macrobend attenuation.
7 Recommended geometric strain is 50% of proof test level, based on statistical analysis of fiber failures.
8 Shorter lengths also available.

FIBER