



Verrillon® VPM400 Series Fibers

Verrillon® VPM400 Series is a family of Polarization-Maintaining (PM) Optical Fibers based on the Elliptical-Clad stress technology. These fibers exhibit extremely high birefringence resulting in beat lengths shorter than 2 mm at 1550 nm. VPM400 fibers show significantly lower attenuation at 1550 nm than other PM fiber designs. These fibers are available in various designs and operating wavelengths, as well cladding dimensions including 50, 80 and 125 microns.

Features

- Optimized for 1550 nm Single Wavelength Operation
- Round core
- Elliptical Clad designs provide high birefringence allowing the fiber to have an extremely short beat-length, excellent for high-precision gyroscopes
- Radiation-Resistant “Rad-Hard”
- Available in 80 µm clad diameter

Applications

- Fiber optic gyroscopes
- Fiber lasers
- Current sensors

Specifications

PART NO.	PMF-9-A-80-1	PMF-12-A-80-1
Description	80 µm Elliptical Clad Polarization maintaining Single-mode Fiber, 1550 nm Operational Wavelength	80 µm Elliptical Clad Polarization maintaining Single-mode Fiber, 1550 nm Operational Wavelength
PARAMETER	VALUE	
Material		
Coating	Dual UV Acrylate	Acrylate
Stress-inducing Design	Elliptical Clad	Elliptical Clad
Geometry		
Clad Diameter (µm)	80 ± 2	80 ± 2
Core/Clad Concentricity (µm)	≤ 1.0	≤ 1.0
Coating Diameter (µm)	165 ± 10	160 ± 10
Optical		
NA (nominal)	0.20	0.20
Attenuation (dB/km) @ 1550 nm	≤ 0.5	≤ 1.5
Mode Field Diameter ¹ (µm) @ 1550 nm	7.0 ± 1.0	6.5 ± 0.5
Operational Wavelength (nm)	1550	1550
Cutoff Wavelength (nm)	≤ 1480	< 1520
Beat Length (mm) @ 1550 nm	≤ 2.00	≤ 2.2
Bend Loss ² (dB/turn) @ 1550 nm	≤ 0.05	—
H-Parameter	—	≤ 5.0 x 10 ⁻⁵
Mechanical		
Proof Test (kpsi)	≥ 100	≥ 100
Operating Temperature (°C)	-10 to +70	-60 to +80

¹ Gaussian Definition

² 12 mm diameter mandrel