Verrillon®
VHS300 Series Fibers

Verrillon Harsh Environment Fibers from AFL are available in a number of designs. Starting with fiber design, we offer both single-mode and multimode optical fibers having coatings and coating combinations, including Polyimide, Silicone-PFA and Carbon, which can be applied in conjunction with any of these outer coatings. Typically, these fibers are used in down-hole data logging, distributed sensing and imaging applications.

Verrillon carbon-coated optical fibers provide exceptionally high levels of hermeticity compared to commercial fibers. We provide extensive data that demonstrates the performance of our fiber. In addition, we provide one-stop shopping for customers requiring multi-count cabled hermetic fibers, if required, in metal jacketing tubes.

Consistent with our founding principles, we specialize in application optimized fibers, providing our customers unmatched flexibility in the their system design and performance.

Features

- Pure Silica Core chemistry for improved performance in hydrogen-rich environments
- Optimized for 1310/1550 nm Dual Wavelength Operation
- MFD compatible with standard SMF for ease of splicing and minimal splice loss
- Carbon coating provides exceptional resistance to H_2 and moisture ingression
- Wide range of protective coatings available

Specifications

PART NO.	SMF-40-CP-125-1	SMF-40-P-125-1
Description	125/155 µm Carbon/Polyimide Pure Silica Core, Single-mode fiber, 0.12NA, 100 kpsi	125/155 µm Polyimide Pure Silica Core, Single-mode fiber, 0.12NA, 100 kpsi
PARAMETER	**VALUE**	
Material		
Hermetic Coating	Carbon	—
Coating	Polyimide	Polyimide
Geometry		
Clad Diameter (µm)	125 ± 2	125 ± 2
Core/Clad Offset (µm)	≤ 0.5	≤ 0.5
Coating Diameter (µm)	155 ± 5	155 ± 5
Polyimide Coating Concentricity[1] (%)	≥ 80	≥ 80
Optical		
NA (nominal)	0.12	0.12
Attenuation[2] @ 1310 nm (dB/km) @ 1550 nm (dB/km)	 ≤ 0.8 ≤ 0.8	 ≤ 0.8 ≤ 0.8
Cutoff Wavelength (nm)	1250 ± 50	1250 ± 50
Mode Field Diameter[3] @ 1310 nm (µm) @ 1550 nm (µm)	 9.2 ± 0.6 10.4 ± 0.8	 9.2 ± 0.6 10.4 ± 0.8
Mechanical		
Proof Test (kpsi)	≥ 100	≥ 100
Operating Temperature (°C)	-65 to +300	-65 to +300

[1] Measured as (Min. Wall/Max. Wall) x 100 [2] Measured on Zero Tension spool [3] Petermann II Definition

Verrillon®
VHS300 Series Fibers

Specifications

PART NO.	SMF-40-CSPFA-125-5
Description	125/400 µm Carbon/Silicone/PFA coated, Single-mode fiber, 0.12NA, 100 kpsi, 1310/1550 nm Operating Wavelength
PARAMETER	**VALUE**
Material	
Hermetic Coating	Carbon
Primary Coating	Silicone
Secondary Coating	PFA
Geometry	
Clad Diameter (µm)	125 ± 2
Core/Clad Offset (µm)	≤ 0.5
Coating Diameter (µm)	400 ± 50
Optical	
NA (nominal)	0.12
Attenuation[1] @ 1310 nm (dB/km) @ 1550 nm (dB/km)	 ≤ 0.8 ≤ 0.8
Cutoff Wavelength (nm)	1250 ±50
Mode Field Diameter[2] @ 1310 nm (µm) @ 1550 nm (µm)	 9.2 ± 0.6 10.4 ± 0.8
Mechanical	
Proof Test (kpsi)	≥ 100
Operating Temperature (°C)	-40 to +200

[1] Measured on loose [2] Petermann II Definition