Verrillon®
VMM1000 Series

Verrillon 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

- Low OH concentration optimizes fibers for power transmission from visible through near-IR wavelengths
- Laser surgery and other medical sensing and imaging applications
- All-silica based construction creates a high damage threshold and high-performance optical properties for pumping systems

Specifications

PART NO.	MMF-100-1-P-105-125-1	MMF-100-2-P-140-2	MMF-105-1-P-125-150-3
Description	100/105/125 High OH, Silica Core, Polyimide coated, Multimode Fiber, 0.22 NA, 100 kpsi Proof Test	100/140/172 Polyimide Coated, Graded Index, Multimode Fiber, 0.29 NA, 200 kpsi	105/125/150 Low OH Silica Core, Polyimide coated, Step Index Multimode Fiber, 0.22 NA, 100 kpsi Proof Test
PARAMETER	**VALUE**		
Material			
Coating	Polyimide	Polyimide	Polyimide
Geometry			
Core Diameter (µm)	100 ± 4	100 ± 3	105 ± 5
Clad Diameter (µm)	105 ± 3	140 ± 3	125 ± 3
Core/Clad Offset (µm)	—	≤ 6.0	≤ 3.0
Coat Diameter (µm)	125 ± 3	172 ± 2	150 ± 5
Optical			
NA (nominal)	0.22 ± 0.02	0.29	0.22
Attenuation @ 308 nm (dB/m) [1] @ 808 nm (dB/m) [2] @ 850 nm (dB/m) [2]	 ≤ 200 — —	 — — ≤ 5.0	 — ≤ 15 —
Bandwidth @ 850 nm (MHz/km)	—	≤ 100	
Mechanical			
Proof Test (kpsi)	≥ 100	≥ 200	≥ 100
Operating Temperature (°C)	-65 to +300	-65 to +300	-65 to +300

[1] Nominal value taken from preform specifications [2] Measured on Zero Tension Spool

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Specifications

PART NO.	MMF-200-1-P-220-240-1	MMF-200-1-P-220-245-1
Description	200/220/240 High OH, Pure Silica Core, Polyimide coated, Step Index Multimode Fiber, 0.22 NA, 100 kpsi Proof Test	200/220/245 Low OH Silica Core, Polyimide coated, Step Index Multimode Fiber, 0.22 NA, 100 kpsi Proof Test
PARAMETER	**VALUE**	
Material		
Buffer	Polyimide	Polyimide
Geometry		
Core Diameter (µm)	200 ± 5	200 ± 8
Clad Diameter (µm)	220 ± 5	220 ± 6
Core Non-Circularity (%)	≤ 5	≤ 5
Clad Non-Circularity (%)	≤ 1	≤ 1
Coat Diameter (µm)	240 ± 5	245 ± 10
Polyimide Coating Concentricity[1] (%)	≥ 75	≥ 80
Optical		
NA (nominal)	0.22	0.22
Attenuation @ 808 nm (dB/m)	≤ 10	≤ 15
Mechanical		
Proof Test (kpsi)	≥ 100	≥ 100
Operating Temperature (°C)	-65 to +300	-65 to +300

[1] Measured as (Min Wall / Max Wal) x 100

Specifications

PART NO.	MMF-200-1-A-220-400-1
Description	200/220/400 Acrylate coated, Low OH, Silica Core, Step Index Multimode Fiber, 0.22 NA, 100 kpsi Proof Test
PARAMETER	**VALUE**
Material	
Primary Coating	UV Acrylate
Secondary Coating	UV Acrylate
Geometry	
Core Diameter (µm)	200 ± 8
Clad Diameter (µm)	220 ± 6
Core/Clad Offset (µm)	≤ 3.0
Combined Coat Diameter (%)	400 ± 25
Optical	
NA (nominal)	0.22
Attenuation[1] @ 808 nm (dB/m)	≤ 20
Mechanical	
Proof Test (kpsi)	≥ 100
Operating Temperature (°C)	-40 to +85

[1] Measured on Zero Tension Spool