



Specialty Fiber

DrakaElite™ 500 µm-coated Enhanced Single-Mode Optical Fiber

SMF with 500 µm coating for improved protection



Issue date: 08/10
Supersedes: 12/09

Fiber

Draka Communications offers Enhanced Single-Mode Optical Fiber also in 500 µm coating diameter for improved protection. Draka's Enhanced Single-Mode Optical Fiber provides improved performance in both the 1310 nm to 1550 nm wavelength spectrum.

These fibers are optimized for special use applications, like industry, aerospace, transport or military. The DrakaElite™ 500µm-coated Enhanced Single-Mode Optical Fibers comply with the IEC 60793-2-50 type B1.3 Optical Fiber Specification.

In addition, the fibers meet the optical and mechanical requirements of Telcordia Generic Requirements documents GR-20-CORE and GR-409-CORE.

Coating

The coating offers an excellent stable coating strip force over a wide range of environmental conditions and coating stripping leaves no residues on the bare glass fiber. In tight buffer applications, the entire coating construction (tight buffer and primary coating) can, in general, very easily be stripped off.

Process

The DrakaElite™ 500 µm-coated Enhanced Single-Mode Optical Fiber is manufactured using the Draka-proprietary Plasma-activated Chemical Vapor Deposition (PCVD and APVD™) processes.

Features	Advantages
Produced by the PCVD and APVD™ process	Superior geometry, uniformity and purity of glass
Coated with the dual layer UV Acrylate	<ul style="list-style-type: none"> • Optimized performance in tight-buffer cable applications • High resistance to micro-bending • Stable performance over a wide range of environmental conditions • Improved and easier stripability of tight buffer coatings
Excellent high temperature resistant Acrylate coating manufacturing process	Superior geometry, uniformity and homogeneity of coating

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Product Type: 9 / 125 µm, G.652.D

Coating Type: 500 µm Dual Layer Primary Coating (DLPC2)

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Optical Specifications

Attenuation	
Attenuation at 1310 nm	≤ 0.4 dB/km
Attenuation at 1383 nm	≤ 0.4 dB/km
Attenuation at 1550 nm	≤ 0.25 dB/km

Mode Field Diameter

Wavelength (nm)	MFD (µm)
1310	9.0 ± 0.5
1550	10.1 ± 0.6

Cutoff Wavelength

Cable Cutoff wavelength (Accf)	≤ 1260 nm
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Geometrical Specifications

Glass Geometry	
Cladding Diameter	125.0 ± 1.0 µm
Core/Cladding Concentricity Error	≤ 0.7 µm
Cladding Non-Circularity	≤ 1.0 %

Coating Geometry

Coating Diameter	500 ± 15 µm
Coating/Cladding Concentricity Error	≤ 20.0 µm
Coating Non-Circularity	≤ 5.0 %
Length	Standard lengths up to 4.4 km

Mechanical Specifications

Proof Test		
Proof Test ¹	Off line	0.7 GPa (100 kpsi)

Tensile Strength

Dynamic Tensile Strength (median value)	0.5 meter gauge length unaged and aged ²	> 3.8 GPa (550 kpsi)
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Dynamic Stress Corrosion

Susceptibility Parameter	≥ 18
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Coating Strip Force

Average Strip Force (Typical)	Unaged and aged ³	2 N
Peak Strip Force (Typical)	Unaged and aged ³	1.3 to 8.9 N

Environmental Specifications

Operating Temperature	≥ - 60°C to ≤ + 85°C
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Temperature Dependence (1310 nm, 1550 nm)

Cycling Induced Attenuation (- 60°C to + 85°C)	≤ 0.1 dB/km
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Temperature and Humidity (1310 nm, 1550 nm)

Induced Attenuation (85°C, 85% RH, 30 days)	≤ 0.1 dB/km
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Heat Dependence (1310 nm, 1550 nm)

Induced Attenuation (85°C, 3000 h)	≤ 0.1 dB/km
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Typical Values

Miscellaneous	
Nominal Zero Dispersion Slope	0.085 ps/(nm ² .km)
Effective group index @ 1310 nm	1.467
Effective group index @ 1550 nm	1.468
Effective group index @ 1625 nm	1.468
Rayleigh Backscatter Coefficient for 1 ns pulse width:	
@ 1310 nm	-79.4 dB
@ 1550 nm	-81.7 dB
@ 1625 nm	-82.5 dB

¹ Higher proof test level upon request

² Aging at 85°C, 85% RH, 30 days

³ Aging:

- 23°C, 0°C and 45°C
- 30 days at 85°C and 85% RH
- 14 days water immersion at 23°C

