



Specialty Fiber



Issue date: 12/09
Supersedes: 09/09

Product Type: 50 / 125 µm and 62.5 / 125 µm

Coating Type: High Temperature Resistant Silicone

For data transmission and communication in harsh environments

- Fiber Optic Sensors
- Aeronautics and Transport
- Military/Defense/Aerospace
- Marine, Oil and Gas



Value Innovation is a way of looking at the world. How we can help our customers do more, make more, save more, achieve more.



Draka's High Temperature Resistant Silicone coated Graded-Index Multimode Fiber provides optimum transmission performance in both the 850 nm and 1300 nm wavelength operating ranges. It can be used in all cable constructions designed for high temperature environments, including loose tube, metal tube and central tube designs.

In spite of their high intrinsic strength, optical fibers need coatings to ensure the protection and the maintenance of such strength throughout their lifetime, when exposed to all kinds of stresses which can cause optical fiber fatigue.

High temperature is one such cause, which can often be encountered in harsh environments.

The Silicone coating used by Draka protects the optical fiber during installation and operation in applications exposed to high temperatures, up to 200°C.

Features	Benefits
High temperature resistant Silicone coating	Supports application in environments with both constant high temperature (up to 200°C) and fluctuating temperature
Low sensitivity to ionizing radiation, especially when combined with a PCVD made fiber core section	Useful for application of fibers in harsh environments with presence of both elevated temperature and ionizing radiation
Fully compatible with other fibers in terms of transmission, connection and installation tools	Open standards for multi-sourcing worldwide
Excellent high temperature Silicone coating manufacturing process	Superior geometry, uniformity and homogeneity

Optimized for operations in extreme temperature environments (up to 200°C)

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Optical Specifications

Attenuation

	50 µm	62.5 µm
Attenuation Coefficient at 850 nm	≤ 2.5 dB/km	≤ 3.0 dB/km
Attenuation Coefficient at 1300 nm	≤ 0.7 dB/km	≤ 0.8 dB/km

Minimum Modal Bandwidth¹

	50 µm	62.5 µm
Minimum Modal Bandwidth at 850 nm	> 400 to > 1000 MHz.km	> 160 to > 300 MHz.km
Minimum Modal Bandwidth at 1300 nm	> 400 to > 1500 MHz.km	> 500 to > 1000 MHz.km

Numerical Aperture	0.200 ± 0.015	0.275 ± 0.015
Chromatic Dispersion	FDDI Spec.	FDDI spec.
Backscatter Characteristics ² (at 1300 nm)		
Step ³	≤ 0.1 dB	≤ 0.1 dB
Irregularities over fiber length	≤ 0.1 dB	≤ 0.1 dB
Reflections	Not allowed	Not allowed

Group Index of Refraction (Typical)

Group Index of Refraction at 850 nm	1.482	1.482
Group Index of Refraction at 1300 nm	1.477	1.477

Geometrical Specifications

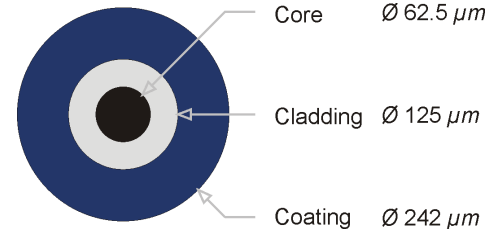
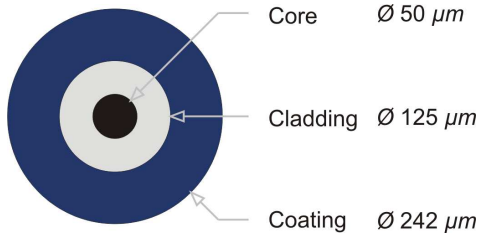
Cladding Diameter	125.0 ± 1.0 µm	125.0 ± 1.0 µm
Cladding Non-Circularity	≤ 1.0 %	≤ 1.0 %
Coating Material (Silicone)	High Temp Resistant	High Temp Resistant
Coating Diameter (Typical)	242 ± 15 µm	242 ± 15 µm
Length	up to 2.2 km	up to 2.2 km

Environmental Specifications

Operating Temperature	≥ - 60°C to ≤ + 200°C	≥ - 60°C to ≤ + 200°C
Temperature Dependence (850 nm, 1300 nm)		
Cycling Induced Attenuation (- 60 °C to + 200°C)	≤ 0.3 dB/km	≤ 0.3 dB/km
Temperature and Humidity (850 nm, 1300 nm)		
Induced Attenuation (85°C, 85 RH, 30 days)	≤ 0.3 dB/km	≤ 0.3 dB/km
Heat Dependence (850 nm, 1300 nm)		
Induced Attenuation (200°C, 3000 h)	≤ 0.3 dB/km	≤ 0.3 dB/km

Mechanical Specifications

Proof Test ⁴	Off line	≥ 1.0 % ≥ 100 kpsi ≥ 8.8 N ≥ 0.7 GPa	≥ 1.0 % ≥ 100 kpsi ≥ 8.8 N ≥ 0.7 GPa
Bending Dependence (850 nm, 1300 nm)			
Induced Attenuation (100 turns, 75 mm diameter)		≤ 0.5 dB	≤ 0.5 dB
Dynamic Stress Corrosion			
Susceptibility Parameter (Typical)		≥ 20	≥ 20
Coating Strip Force (Typical Average Force)		0.6 N	0.6 N



¹ The modal bandwidth is linearly normalized to 1 km, according to IEC 60793-2-10

² OTDR measurement with 0.5 µs pulse width.

³ Mean of bi-directional measurement.

⁴ Higher proof test level upon request

How can we be of service to you?

Value Innovation is a way of looking at the world. How can we help our customers do more, make more, save more, achieve more?

Take DrakaElite™. Based on our proprietary manufacturing process and our control of all technological building blocks, we offer an extensive portfolio of specialized optical fibers that have been designed, developed, manufactured

and tested for every environment. Whether you want to guide, amplify, transmit, process, control or sense light, Draka has the fiber you need, whatever your environment. And if for some reason we don't have exactly what you need, well, we'll just make it.

That's Value Innovation in action.

Draka Communications

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The Draka Communications policy of continuous improvement may cause in changed specifications without prior notice