

### Specialty Fiber



Issue date: 12/09  
Supersedes: 09/09

**Product Type:** 50 / 125  $\mu\text{m}$  and 62.5 / 125  $\mu\text{m}$

**Coating Type:** High Temperature Resistant Acrylate

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 Acrylate coated Graded-Index Multimode Fiber provides optimum transmission performance in both the 850 nm and 1300 nm wavelength operating ranges.

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 Acrylate coating used by Draka protects the optical fiber during installation and operation in applications exposed to high temperatures, up to 150°C.

The Acrylate coated optical fiber can be used in all cable constructions designed for high temperature environments, including loose tube, metal tube and central tube designs.

Features	Benefits
High temperature resistant Acrylate coating	Supports application in environments with both constant high temperature (up to 150°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 resistant Acrylate coating manufacturing process	Superior geometry, uniformity and homogeneity

Optimized for operations in extreme temperature environments (up to 150°C)

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

Issue date: 12/09

Coating Type: High Temperature Resistant Acrylate

Supersedes: 09/09

### 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 Bandwidth<sup>1</sup>

	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

	50 µm	62.5 µm
Numerical Aperture	0.200 ± 0.015	0.275 ± 0.015
Chromatic Dispersion	FDDI Spec.	FDDI spec.
Backscatter Characteristics <sup>2</sup> (1300 nm)		
Step <sup>3</sup>	≤ 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)

	50 µm	62.5 µm
Group Index of Refraction at 850 nm	1.482	1.482
Group Index of Refraction at 1300 nm	1.477	1.477

### Geometrical Specifications

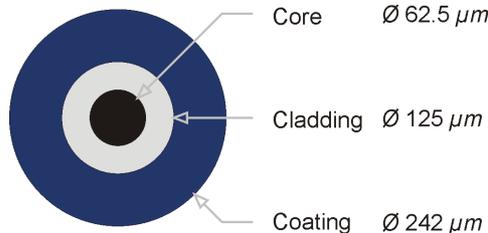
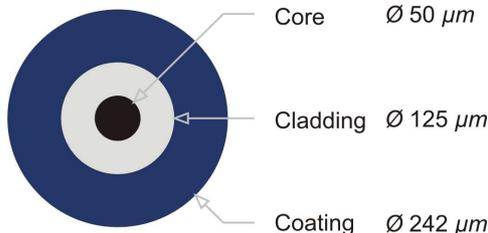
	50 µm	62.5 µm
Core/Cladding Concentricity Error	≤ 1.5 µm	≤ 1.5 µm
Cladding Diameter	125.0 ± 1.0 µm	125.0 ± 1.0 µm
Cladding Non-Circularity	≤ 1.0 %	≤ 1.0 %
Coating Material	High Temperature Resistant Acrylate	
Coating Diameter (Typical)	242 ± 7 µm	242 ± 7 µm
Length (Standard lengths)	up to 8.8 km	up to 8.8 km

### Environmental Specifications

	50 µm	62.5 µm
Operating Temperature	≥ - 60°C to ≤ + 150°C	≥ - 60°C to ≤ + 150°C
Temperature Dependence (850nm, 1300nm)		
Cycling Induced Attenuation (- 60°C to + 150°C)	≤ 0.3 dB/km	≤ 0.3 dB/km
Temperature and Humidity (850nm, 1300nm)		
(85°C, 85% RH, 30 days)	≤ 0.3 dB/km	≤ 0.3 dB/km
Heat Dependence (850nm, 1300nm)		
Induced Attenuation (150°C, 3000h)	≤ 0.3 dB/km	≤ 0.3 dB/km

### Mechanical Specifications

	50 µm	62.5 µm
Proof Test <sup>4</sup> (Off line)	≥ 1.0 % ≥ 8.8 N	≥ 100 kpsi ≥ 0.7 GPa
Bending Dependence (850nm, 1300nm)		
Induced Attenuation (100 turns, 75mm diameter)	≤ 0.5 dB	≤ 0.5 dB
Dynamic Stress Corrosion		
Susceptibility Parameter (Typical)	≥ 20	≥ 20
Coating Strip Force (Typical average force)	2.7 N	2.7 N



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

<sup>2</sup> OTDR measurement with 0.5µs pulse width

<sup>3</sup> Mean of bi-directional measurement

<sup>4</sup> 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

fibersales@draka.com  
www.drakafiber.com | www.draka.com

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