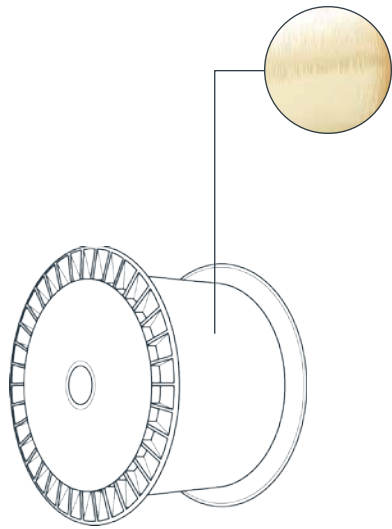




## Wide-Temperature Graded-Index Optical Fiber

PYROCOAT® K Coating: Part Number F79696



### Features

**PYROCOAT K Coating**  
Industry-Leading Thermal Stability

### Benefits

Thin, hard coating provides excellent thermal stability, plus chemical resistance in a small cross-section of 155  $\mu\text{m}$ .

**Wide Operating Temperature Range**

Suitable for long-term use over a wide range of temperatures.

**Graded-Index 50/125 Fiber Structure**

Compatible with most commercially available Distributed Temperature Sensing (DTS) interrogators; can also be fusion spliced to traditional lead-in optical fibers.

### Product Description

This optical fiber is designed for Distributed Temperature Sensing (DTS) and communications in applications where continuous exposure to temperatures up to 293 °C for long durations is possible (~ up to 20 years, performance and reliability will vary depending on installation environment. Consult OFS for guidance). The table below provides more information on life expectancy in various high temperature use cases.

## Wide-Temperature Graded-Index Optical Fiber with PYROCOAT® K Coating

### Specifications

Item Number	<b>F79696</b>	
Type	Multimode Graded-Index	
Optical Properties		
Numerical Aperture	0.20	
Attenuation		
	@ 850 nm	≤ 4 dB/km
	@ 1300 nm	≤ 2 dB/km

### Physical Characteristics

Overfilled Bandwidth		
	@ 850 nm	≥ 500 MHz·km
	@ 1300 nm	≥ 500 MHz·km

Core Diameter	50 ± 3 μm
Clad Diameter	125 ± 2 μm
Coating Diameter	155 ± 5 μm
Cladding Non-Circularity	≤ 2.0%
Core Non-Circularity	≤ 5%
Core/Cladding Offset	≤ 3 μm

### Coating Descriptions

Operating Temperature	-65 to +300 °C
Short-Term Temperature Excursions	Up to 400 °C
Coating Material	PYROCOAT K

### Mechanical Data

Short-Term Bend Radius	≥ 5 mm
Long-Term Bend Radius	≥ 9 mm
Proof Test Level	200 kpsi (1.38 GPa)

	Commercially Available Polyimide-Coated Fibers	PYROCOAT K
Lifetime at 275 °C	4 years	80 years
Lifetime at 300 °C	0.8 years	13 years
Lifetime at 325 °C	70 days	2.2 years
Lifetime at 350 °C	18 days	160 days
20-year Continuous Upper Use Temperature	250 °C	293 °C
Fiber/Metal Interaction at 300 °C	Fiber sticks to metal	Fiber does not stick to metal
Aging in distilled water, 200 °C, 2000 psi, 7 days	Coating material degrades	No coating degradation
Aging in sea water, 100 °C, 2000 psi, 14 days	No coating degradation	No coating degradation
Aging in mineral oil, 250 °C, 2000 psi, 10 days	No coating degradation	No coating degradation
Aging in isopropanol, 250 °C, 1500 psi, 7 days	No coating degradation	No coating degradation

NOTE: The lifetimes are based on 25% loss of the initial coating mass criterion. For details, see A. A. Stolov, D. A Simoff, J. Li, Thermal Stability of Specialty Optical Fibers. *J. Lightwave Technol.*, 2008, V 26, N 20, P. 3443-3451.

**For additional information please contact your sales representative.**

You can also visit our website at [www.ofsoptics.com](http://www.ofsoptics.com) or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.

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