

Rad Hard Passive | Fibers

For nuclear environment and high energy physics

For the past 10 years, iXblue has developed a large experience in the use of optical fibers in extreme conditions from undersea to space environment and in Oil & Gas, nuclear, medical, and aerospace applications

Engaged in large scale R&D projects with the CNES (French Space Agency) and the CEA (French Nuclear Agency), iXblue Photonics has built a unique knowledge in radiation resistant fibers, both for passive and active doped fibers. From design to qualification, iXblue engineers will provide you with custom fibers specifically fitting your application with minimal RIA (Radiation Induced Attenuation) level.

Domains

- Nuclear Environment
- High Energy Labs (Plasma diagnostic)
- High Temperature

Coating available:

- Acrylate, Silicone, High temperature Acrylate
- Polyimide with optional carbon layer for Hydrogen protection



Example of Fibers

Multimode Fiber for temperature sensing in nuclear environment

Graded Index Profile		Fluorine dope silica		Geometrical Specifications	
Core Composition:		Core Diameter (μm)		50	
Operational Wavelength (nm)	1064	Fiber Diameter (μm)		125	
Attenuation (dB/km)	< 5	Numerical Aperture		0.12	

Singlemode Fiber for sensing/data transmission in nuclear environment

Step Index Profile		Geometrical Specifications	
Core Composition:	pure silica	Core Diameter (μm)	7
Operational Wavelength (nm)	1310 / 1550	Fiber Diameter (μm)	125
Attenuation (dB/km)	< 1	Numerical Aperture	0.14

UV grade Multimode Fiber for High Energy Physics (Plasma Diagnostic)

Graded Index Profile		Geometrical Specifications	
Core Composition:	Fluorine dope silica	Core Diameter (μm)	250
Operational Wavelength (nm)	351	Fiber Diameter (μm)	300
Attenuation (dB/m)	< 0.15	Numerical Aperture	0.12
Dispersion (ps/m)	< 1	Other Geometry available:	105/125, 400/450 μm