

Rad Hard | Fibers

Coatings for harsh environment

For more than a decade iXblue has developed a unique know-how in the design of optical fibers in radiative environments such as nuclear power plants, high energy physics labs, nuclear waste repository sites and even all the way into space. iXblue develops and maintains a comprehensive product line of fibers designed to fit many of such applications. Our fibers can be used for data transmission, sensing or experiment monitoring.

More fibers are available on stock and we have furthermore the ability to custom design your fiber based on your specific application. Do not hesitate to contact us with your specific technical requirements..

Key Features

- Low radiation induced attenuation
- Low bending losses
- Chemical core compositions adapted to each radiative environment
- Large choice of coatings for harsh environments
- Outstanding mechanical protection

Applications

- Nuclear Environment
- High energy physics
- Space



Main Specifications

Low Radiation Level

Product Name	Core NA	Attenuation @ 1550 nm (dB/km)	Cutoff wavelength (nm)	MFD @ 1550 nm (μm)	Cladding diameter (μm)	Coating diameter (μm)	Operating temperature range (°C)	Coating material
IXF-SM-1550-80-019-PI	0.19	< 2	< 1450	6.6 ± 1	80 ± 1	110 ± 5	-60 / +300	Polyimide
IXF-SM-1550-80-024-PI	0.24	< 1.5	< 1450	5.3 ± 0.5	80 ± 1	110 ± 5	-60 / +300	Polyimide
IXF-SM-1550-125-012-PI	0.12	< 0.5	< 1350	10.4 ± 0.5	125 ± 1	155 ± 5	-60 / +300	Polyimide
IXF-SM-1550-125-014-PI	0.14	< 0.4	< 1275	8.5 ± 0.5	125 ± 1	155 ± 5	-60 / +300	Polyimide
IXF-SM-1550-125-028-PI	0.28	< 5.0	< 1350	4.5 ± 0.5	125 ± 1	155 ± 5	-60 / +300	Polyimide
IXF-SM-1550-125-014-HT	0.14	< 0.4	< 1275	8.5 ± 0.5	125 ± 1	245 ± 15	-60 / +150	Acrylate

Other product specifications

- Radiation Induced Attenuation @ 1550 nm for 20 kGy (γ-rays) (dB/km): ~ 25
- Proof test level (kpsi): 100

High Radiation Level

Product Name	Core NA	Attenuation @ 1550 nm (dB/km)	Cutoff wavelength (nm)	Outside cladding diameter (μm)	Coating diameter (μm)	Operating temperature range	Coating material
IXF-RAD-SM-1550-014-HT	0.14	< 0.6	< 1450	125 ± 2	245 ± 15	-60 / +150	Acrylate
IXF-RAD-SM-1550-014-PI	0.14	< 0.6	< 1450	125 ± 2	155 ± 5	-60 / +300	Polyimide
IXF-RAD-SM-1550-0.14-AL	0.14	< 20	< 1450	125 ± 2	165 ± 15	Up to 400*	Aluminum
IXF-MMF-105-125-0.22-RAD	0.22				245 ± 15		

* High Temperature Aluminum Coating

Other product specifications

- Mode Field Diameter @ 1550 nm (μm): 9 +/- 1
- Core/clad offset (μm): < 1
- Core material: Pure silica
- Radiation Induced Attenuation @ 1550 nm for 1 MGy (γ-rays) (dB/km): ~ 25
- Proof test level (kpsi): 100

