POLARIZE
Wavelength **0.78 µm to 1.55 µm**

Polarizing Fibers & Polarizers

iXblue Polarizing (PZ) fiber is designed so that only one state of polarization is guided along the fiber; any other state of polarization will be lost rapidly thus yielding a high built-in polarization extinction ratio. This particular mechanism is obtained through a specific waveguide design and a careful optimization of the glass composition resulting in both high birefringence and leakage behavior. PZ fibers are available at different wavelengths with a broad polarizing window (typically larger than 100 nm), low attenuation and high extinction ratio (≥ 30 dB), that can be tuned by coiling the proper fiber length at the appropriate coil diameter.If needed iXblue also offers ready to use polarizing solutions based on PZ fibers.

Contrary to In-line Polarizers, the PZ fiber based polarizer is an All-Fiber solution offering superior polarization extinction ratio, low loss and excellent stability over temperature. An all-fiber polarizer IXS-POL is a polarizing fiber with the optimal length coiled at the appropriate diameter to operate at the operational wavelength.
iXblue also offers customized solutions including connectors, various packages, patch-cords and cables

Key Features
- Polarizing wavelengths available: 780, 840, 980, 1060, 1310 or 1550 nm
- Fiber diameter: 80 or 125 µm
- Tiger design
- > 100 nm polarizing window
- > 30 dB extinction ratio

Applications
- Quantum optics, cold atoms
- All-Fiber polarizer
- Fiber optic current sensors and gyros

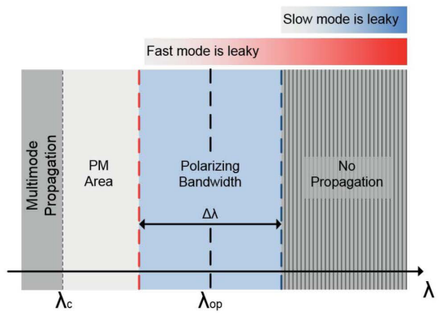
Related Products
- Polarization Maintaining Fibers
- Spun Fibers

How it works

A Polarizing Fiber selectively attenuates the light propagating along one polarization axis (Fast Axis) and preserves only the polarized light along the other principal axis (Slow Axis).

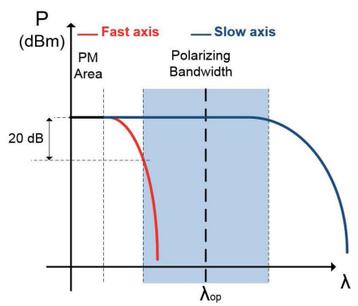
Design wavelength (λ_{op})
Wavelength at wich the fiber is typically used

Polarizing Bandwidth (Δλ)
> 20 dB short wavelength edge
< 3 dB long wavelength edge



Transmission spectra showing two separate cut-offs for the polarization modes in the fast and slow axes.

The concept of W-type fiber
+
Very High-Birefringence Fiber
=
Introduce separate HE_{11} mode cut-offs ine the fast and slow axes at different spectral positions λ_c^{fast}, λ_c^{slow} ($\lambda_c^{fast} < \lambda_c^{slow}$).



Main Specifications

Polarizing Fibers

Product Name	Operating Wavelength (nm)	Design	20 dB Fast Edge (nm)	3dB Slow Edge (nm)	Cladding Diameter (µm)	Coating Diameter (µm)	Core NA (+/-0.01)	MFD* (µm)	Attenuation* (dB/km)	Extinction Ratio* (dB)
IXF-PZG-780-125	780	Tiger	< 730	> 830	125 +/- 2	245 +/- 15	0.11	6 +/- 2	< 20	< -30
IXF-PZG-840-80	840	Tiger	< 790	> 890	80 +/- 2	170 +/- 5	0.11	6 +/- 2	< 20	< -30
IXF-PZG-1053-125	1053	Tiger	< 1015	> 1105	125 +/- 2	255 +/- 10	0.11	8 +/- 2	< 20	< -30
IXF-PZG-1064-125	1064	Tiger	< 1015	> 1105	125 +/- 2	255 +/- 10	0.11	8 +/- 2	< 20	< -30
IXF-PZG-1310-80	1310	Tiger	< 1270	> 1370	80 +/- 2	170 +/- 5	0.13	9 +/- 2.5	< 20	< -30
IXF-PZG-1550-80	1550	Tiger	< 1500	> 1600	80 +/- 2	170 +/- 5	0.13	11 +/- 2.5	< 20	< -30

* Measured at Operating Wavelength

Polarizing Fibers can be dispatched:
- IXF-PZG family: as rolled on a bobbin as standard fiber
- IXS-POL family: coiled and deployed in the optimum conditions

Polarizers

Product Name	Operating Wavelength (nm)	Design	20 dB Fast Edge (nm)	3dB Slow Edge (nm)	Cladding Diameter (µm)	Coating Diameter (µm)	Core NA (+/-0.01)	MFD* (µm)	Attenuation* (dB/km)	Extinction Ratio* (dB)
IXS-POL-780-125	780	Tiger	< 730	> 830	125 +/- 2	245 +/- 15	0.11	6 +/- 2	< 20	< -30
IXS-POL-840-80	840	Tiger	< 790	> 890	80 +/- 2	170 +/- 5	0.11	6 +/- 2	< 20	< -30
IXS-POL-1053-125	1053	Tiger	< 1015	> 1105	125 +/- 2	245 +/- 10	0.11	7 +/- 2	< 20	< -30
IXS-POL-1310-80	1310	Tiger	< 1270	> 1370	80 +/- 2	170 +/- 5	0.13	9 +/- 2.5	< 20	< -30
IXS-POL-1550-80	1550	Tiger	< 1500	> 1600	80 +/- 2	170 +/- 5	0.13	11 +/- 2.5	< 20	< -30

* Measured at Operating Wavelength