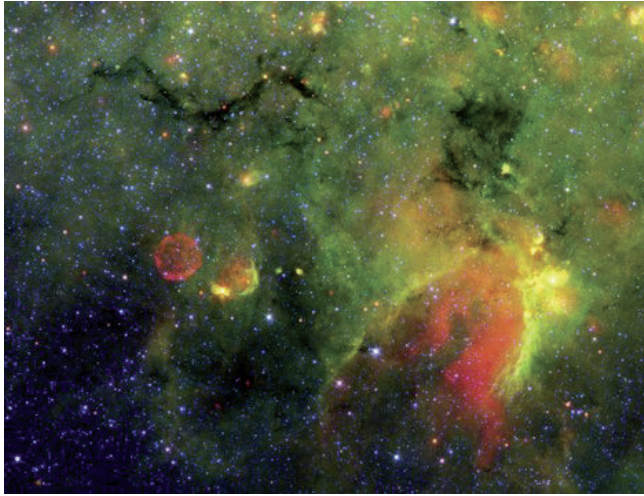


# Infrared Polarizers

## BIR series, 700 nm - 2500 nm



Courtesy NASA/JPL-Caltech. Stellar Snake

### Applications

- Thermal imaging
- Forensics
- Medical
- Microscopy
- Night vision goggles (NVG), low light imaging
- Spectroscopy
- Security

Features	Benefits
Nanowire technology	Brightness and contrast uniformity
	>20° half angle without performance loss
	Wavelength and AOI independent
	Broadband
Inorganic	High reliability
	High heat resistance

Standard product options	
Product name	Description
BIR04A	High contrast
BIR05A	High transmission

The ProFlux® BIR series infrared polarizer, designed using Moxtek® Nanowire® technology, provides unparalleled broadband infrared performance. Moxtek's high volume production capacity ensures availability and supports high volume applications.

BIR polarizers are designed and manufactured to support broadband applications to easily match your applications design goals.

BIR04A high contrast infrared polarizer is optimized for ultimate contrast while BIR05A high transmission infrared polarizer is designed for optical efficiency. BIR04A and BIR05A infrared polarizers can also be customized to deliver contrast and performance levels to meet your specific application and design parameter needs.

Substrate specifications	
Type	Display grade glass
Thickness	0.7 mm ± 0.07
Index of refraction	1.5198 @ 435.8 nm
	1.5078 @ 643.8 nm
Thermal expansion	31.7 × 10 <sup>-7</sup> /°C (0-300 °C)

General specifications	
Wavelength range	700 nm - 2500 nm
AR coating	None
Dimensional tolerance	±0.2 mm
Edge exclusion	2 mm
Transmission axis (TA)	Referenced to long side of part
TA tolerance	±1°
Angle of incidence	0° ± 20°
Maximum temperature	200 °C, >5000 hours
RoHS	Compliant



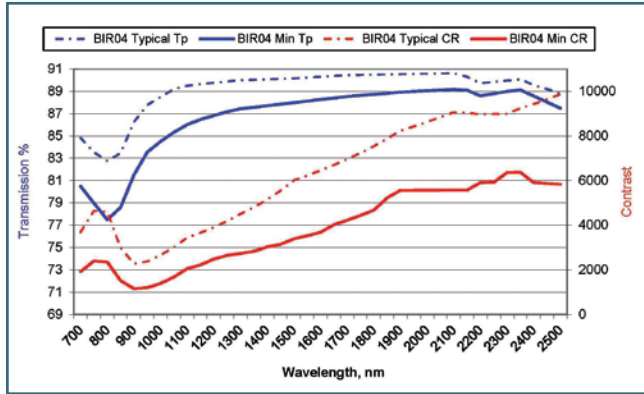
Broadband IR polarization, such as provided by Moxtek BIR04A and BIR05A, are essential in enhancing night vision and deep space imaging applications that generate these stunning images

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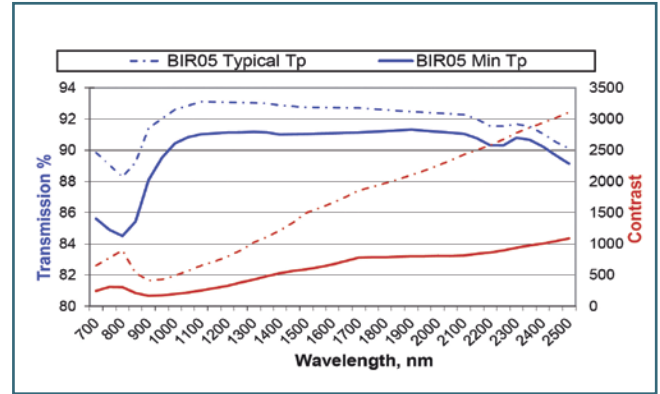
### Performance graphs

BIR04A performance graph



BIR04A is designed for high contrast with typical contrast values ranging from 2000:1 at 1000 nm and as high as 9000:1 at 2400 nm with typical "p" polarization transmission of 83% or greater

BIR05A performance graph



BIR05A is designed for the highest transmission efficiency possible. Typical "p" polarization transmission ranges from 88% at 850 nm to 92% at 2200 nm with typical contrast of 500:1 and higher.

### Performance specifications at normal incidence

Note: performance specifications are for polarizer manufactured on high grade display glass. Polarization for wavelengths greater than 2700 nm is available by using fused silica and other substrates. Please contact us to discuss your application requirements.

Optical performance		900 nm		1400 nm		1900 nm		2400 nm	
		Tp	Ts	Tp	Ts	Tp	Ts	Tp	Ts
BIR04A	Min./max.	81.5 %	0.071 %	87.7 %	0.029 %	88.9 %	0.016 %	88.5 %	0.015 %
BIR05A	Min./max.	88.1 %	0.529 %	91.0 %	0.172 %	91.3 %	0.114 %	90.2 %	0.090 %

Tp = Transmitted "p" polarization, Ts = Transmitted "s" polarization, Cr = Contrast ratio, Tp/Ts