Short Wave Wire-Grid IR Polarizers

BIR Series Datasheet

BIR Polarizers
(mounting optional)

Applications

- Thermal Imaging
- Forensics
- Medical
- Microscopy
- Night Vision Goggles (NVG), low light imaging
- Spectroscopy
- Security

Standard Product Options

Product Name	Description
BIR04A	High Contrast
BIR05A	High Transmission

See OPT-DATA-1011 for size and mounting options

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. Please contact Moxtek sales representatives for more information.

Features	Benefits
Nanowire® Technology	Brightness and contrast uniformity
	±20˚ AOI without depolarization
	Wavelength and AOI independent
	Broadband
Inorganic	High heat resistance

General Specifications

Wavelength Range: 700 - 2,500nm (see back page)
Substrate Type: Display Grade Glass
Substrate Thickness: 0.7 ±0.07mm
Index of Refraction: 1.5198 (435.8nm)
1.5078 (643.8nm)
Thermal Expansion: 31.7 x 10^{-7}/˚C (0 - 300˚C)
AOI (Angle of Incidence): 0˚ ±20˚
AR Coating: None
Maximum Temperature: 200˚C, >5,000 hours
Transmission Axis (TA): Referenced to long side of part
TA Tolerance: ±1˚
Dimensional Tolerance: ±0.2mm
Edge Exclusion: 2mm
RoHS: Compliant

Do not touch or clean the wire-grid polarizer surface otherwise the polarizer will be damaged.

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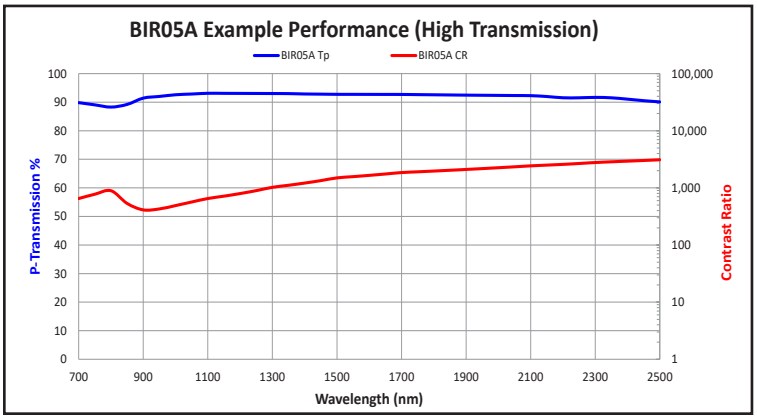
Performance Specifications at Normal Incidence

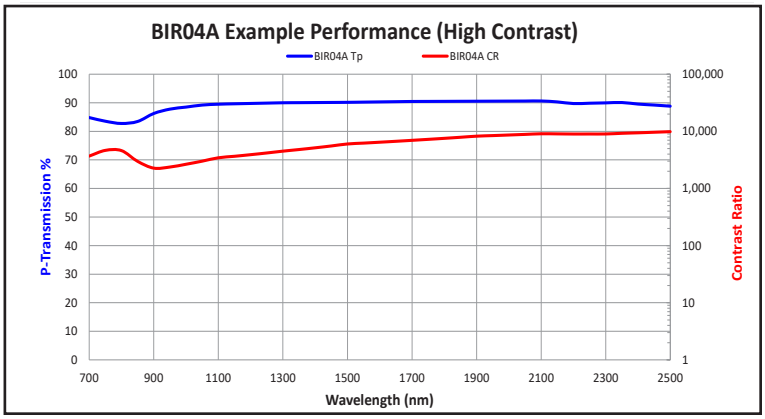
Product	900nm		1400nm		1900nm		2400nm	
	Tp% (min)	Ts% (max)	Tp% (min)	Ts% (max)	Tp% (min)	Ts% (max)	Tp% (min)	Ts% (max)
BIR04A	81.5	0.071	87.7	0.029	88.9	0.016	88.5	0.015
BIR05A	88.1	0.529	91.0	0.172	91.3	0.114	90.2	0.090

Tp- Transmitted "p" polarization, **Ts**- Transmitted "s" polarization

Note: Performance specifications are for polarizers manufactured on high grade display glass. Polarization for wavelengths greater than 2,700nm is available by using fused silica and other substrates. Please contact us to discuss your application requirements.

Example Optical Performance (Tested at 0°)





Performance data was taken from sample evaluations. Some part-to-part variation is expected.

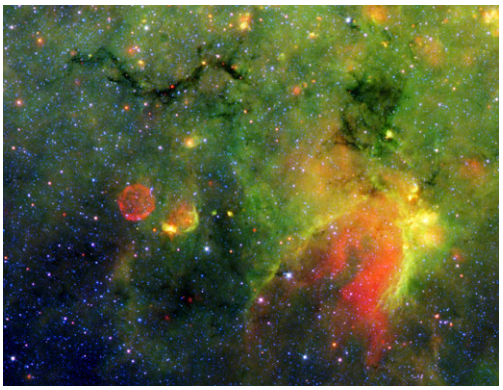


Image courtesy of NASA/JPL-Caltech. Image of Stellar Snake enabled by IR polarizer technology.

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

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