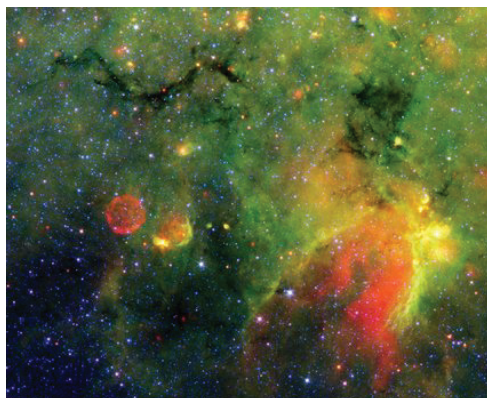




Courtesy NASA/JPL-Caltech. Stellar Snake

### Applications

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



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.



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° half angle without performance loss |
|                     | Wavelength and AOI independent           |
|                     | Broadband                                |
| Inorganic           | High reliability                         |
|                     | High heat resistant                      |

### Substrate Specifications

*Type:* Display Grade Glass

*Thickness:* 0.7mm ± 0.07

*Index of Refraction:* 435.8nm: 1.5198

643.8nm: 1.5078

*Thermal Expansion:* 31.7 x 10<sup>-7</sup>/°C (0-300°C)

### General Specifications

*Wavelength Range:* 700nm - 2,500nm

*AR Coating:* None

*Dimensional Tolerance:* ± 0.2mm

*Edge Exclusion:* 2mm

*Transmission Axis (TA):* Referenced to long side

*TA Tolerance:* ± 1°

*Angle of Incidence:* 0° ± 20°

*Maximum Temperature:* 200°C > 5,000 hours

*RoHS:* Compliant



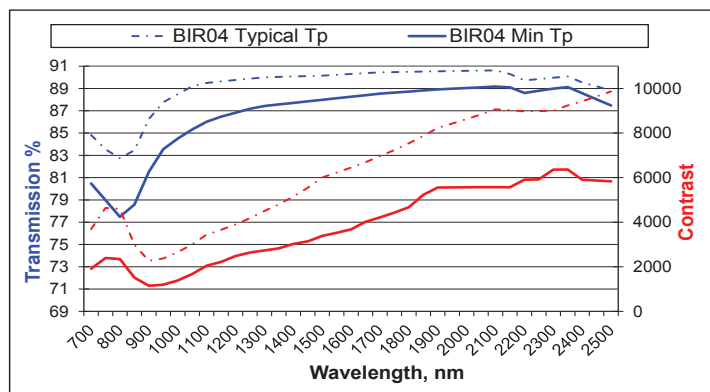
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## Performance Graphs

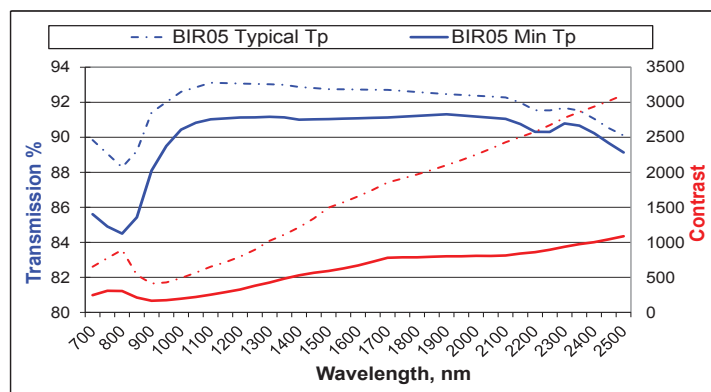
### BIR04A Performance Graph

BIR04A is designed for high contrast with typical contrast values ranging from 2,000:1 at 1,000 nm and as high as 9,000:1 at 2,400nm 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 850nm to 92% at 2,200nm 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 2,700nm is available by using fused silica and other substrates. Please contact us to discuss your application requirements.

| Optical Performance |         | 900nm |        | 1400nm |        | 1900nm |        | 2400nm |        |
|---------------------|---------|-------|--------|--------|--------|--------|--------|--------|--------|
|                     |         | 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, Tp/Ts



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