

Ultra Broadband Polarizers

UBB Series Datasheet



UBB Polarizers
(mounting optional)

Applications

- FTIR Spectroscopy
- UV Curing, Exposure
- IR Imaging
- Forensics
- Communications
- Semiconductor
- Machine Vision
- Microscopy

Standard Product Options

| Product Name | Description |
|--------------|---|
| UBB01A | Broadband, High Contrast, (300 - 3,200nm) |
| UBB02A | High Transmission (400 - 1,100nm) |

See OPT-DATA-1011 for size and mounting options

Ultra Broadband polarizers are designed to offer an excellent solution for almost any multi-wavelength application. The wide-band characteristics of this polarizer, enables a wide range of products and technologies. Performance begins at 300nm and works well throughout the visible and infrared range enabling its use in a wide variety of applications (see sidebar). With anhydrous Fused Silica substrate material, the performance will work well up to the 4 μ m wavelength.

As with all ProFlux[®] polarizers, the UBB series are capable of large acceptance angle which eases alignment concerns. Durability is similarly equivalent to all our ProFlux products recognized for their high durability in hot and environmentally difficult applications.

Moxtek's advanced manufacturing technology is able to manufacture precision polarizers in high volume quantities for spectroscopy, astronomy, communications, semiconductor, machine vision, and other applications.

| Features | Benefits |
|----------------------------------|---|
| Nanowire [®] Technology | Brightness and contrast uniformity |
| | $\pm 20^\circ$ AOI without depolarization |
| | Wavelength and AOI independent |
| | Broadband |
| Inorganic | High heat resistant |

General Specifications

| | UBB01A | UBB02A |
|----------------------------------|------------------------------------|---|
| <i>Wavelength Range:</i> | 300 - \geq 3,200nm | 400 - 1,100nm |
| <i>Substrate Type:</i> | Fused Silica | Display Grade Glass |
| <i>Thickness:</i> | 1.0 \pm 0.1mm | 0.7 \pm 0.07mm |
| <i>Index of Refraction:</i> | 1.4672 (430nm) 1.4504 (1000nm) | 1.5198 (435.8nm) 1.5078 (643.8nm) |
| <i>Thermal Expansion:</i> | 5.5 x 10 ⁻⁷ /°C | 31.7 x 10 ⁻⁷ /°C (0 - 300°C) |
| <i>AOI (Angle of Incidence):</i> | 0° \pm 20° | 0° \pm 20° |
| <i>AR Coating:</i> | Not standard | Not standard |
| <i>Maximum Temperature:</i> | 200°C, >5,000 hours | 200°C, >5,000 hours |
| <i>Transmission Axis (TA):</i> | Referenced to long side of part | |
| <i>TA Tolerance:</i> | $\pm 1^\circ$ | $\pm 1^\circ$ |
| <i>Dimensional Tolerance:</i> | ± 0.4 mm | ± 0.2 mm |
| <i>Edge Exclusion:</i> | 2mm | 2mm |
| <i>RoHS:</i> | Compliant | Compliant |

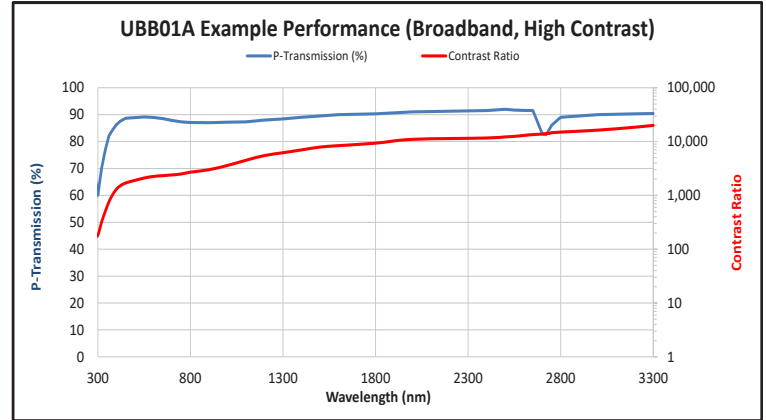
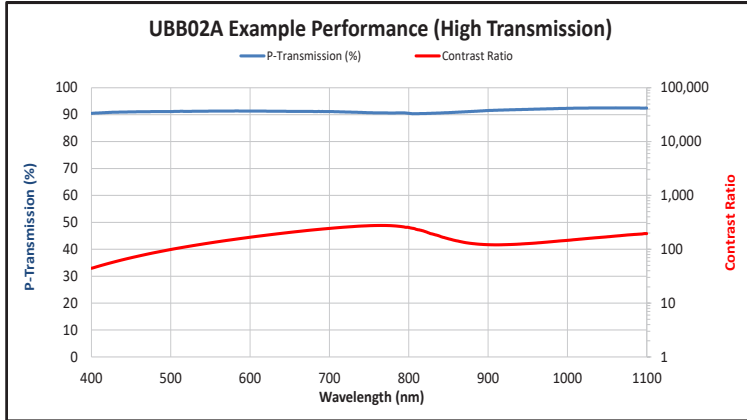
Do not touch or clean the wire-grid polarizer surface otherwise the polarizer will be damaged.

Performance Specifications at Normal Incidence

| Product | Range (nm) | 300nm | | 400nm | | 450nm | | 550 nm | | 650nm | | 800nm | | 1100nm | | 2500nm | | 3200nm | |
|---------|------------|-----------|----------|--------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| | | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) | Tp% (min) | CR (min) |
| UBB01A | 300-3200 | 50 | 30 | Not Measured | | 82 | 600 | 83 | 650 | 81 | 650 | 79 | 700 | 82 | 800 | 82 | 800 | *86 | *5000 |
| UBB02A | 400-1100 | - | - | 89 | 40 | 90 | 40 | 90 | 100 | 90 | 100 | 90 | 100 | 90 | 100 | - | - | - | - |

*Not measured on all parts. Measurement data available on request.

Example Optical Performance (Tested at 0°)



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

For more detail, please use our Polarizer Comparison Tool at www.moxtek.com

For warranty and ordering information, please visit www.moxtek.com.



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