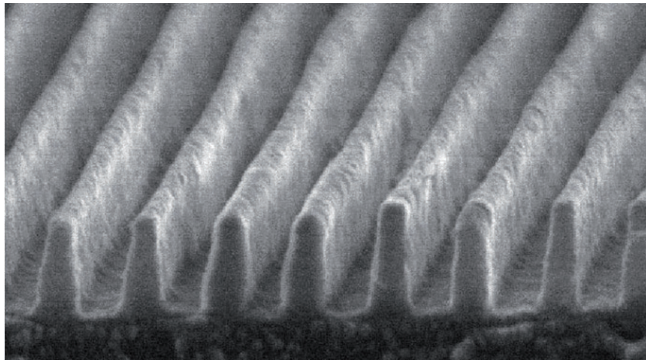


Ultra Broadband Polarizers

UBB series, 300 nm – 3250 nm



120 nanometer wire grids

Applications

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

UBB01A polarizer

- Broadband polarizer covering UV starting at 300 nm to near IR beyond 3 μm .

UBB02A polarizer

- Broadband polarizer covering visible starting at 400 nm to near IR up to 1.1 μm
- Transmission is relatively constant throughout the spectral range.

Features	Benefits
Nanowire Technology	Brightness and contrast uniformity
	$\pm 20^\circ$ AOI without depolarization
	Wavelength and AOI independent
	Broadband
Inorganic	High heat resistance

Standard product options	
Product name	Description
UBB01A	Broadband (300 – 3250 nm)
UBB02A	High transmission (400 – 1100 nm)

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 300 nm 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 beyond 3 μm 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.

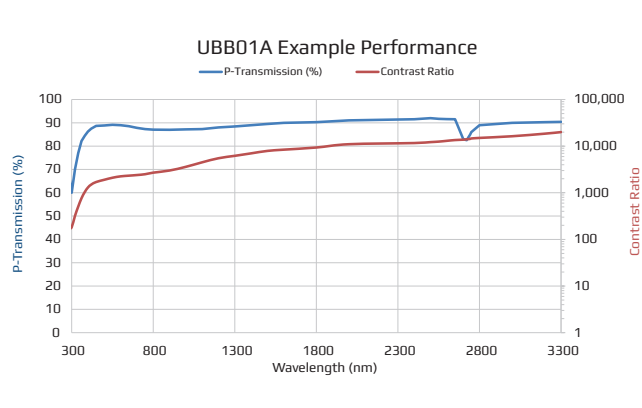
Substrate specifications		
	UBB01A	UBB02A
Type	Fused silica	Display grade glass
Thickness	1.0 mm \pm 0.1	0.7 mm \pm 0.07
Index of refraction	1.4672 @ 430 nm	1.5198 @ 435.8 nm
	1.4504 @ 1000 nm	1.5078 @ 643.8 nm
Thermal expansion	$0.55 \times 10^{-7}/^\circ\text{C}$	$31.7 \times 10^{-7}/^\circ\text{C}$ (0 – 300 $^\circ\text{C}$)

General specifications		
	UBB01A	UBB02A
Wavelength range	300 nm – >3250 nm	400 nm – 1100 nm
AR coating	Not standard	
Dimensional tolerance	\pm 0.4 mm	\pm 0.2 mm
Edge exclusion	2 mm	
Transmission axis (TA)	Referenced to long side of part	
TA tolerance	\pm 1 $^\circ$	
Angle of incidence	0 $^\circ$ \pm 20 $^\circ$	
Maximum temperature	200 $^\circ\text{C}$, >5000 hours	
RoHS	Compliant	

Ultra Broadband Polarizers

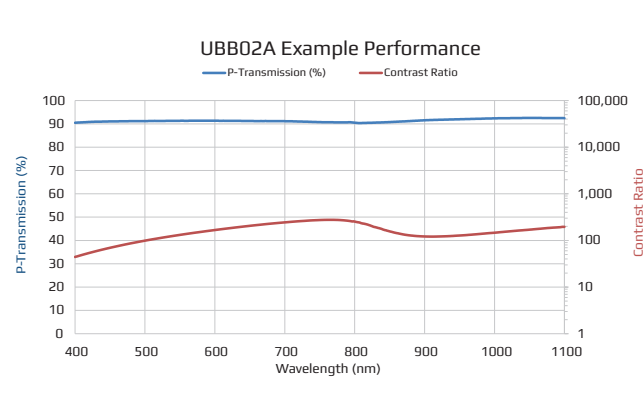
UBB series, 300 nm – 3250 nm

UBB01A typical optical performance



This graph shows typical optical performance of the UBB01A for 300-3250 nm. Excellent transmission is maintained throughout the visible and well into the IR spectrum. Contrast continuously increases throughout this range.

UBB02A typical optical performance



The graph shows typical optical performance for the UBB02A for 400-1100nm. Extremely high transmission is maintained throughout the visible and well into the IR spectrum.

The specifications shown in the table below are the guaranteed performance minimum on these products.

Performance specifications (minimum)																				
Performance	Range (nm)	300 nm		400 nm		450 nm		550 nm		650 nm		800 nm		1100 nm		2500 nm		3200 nm		
		Tp%	Cr%	Tp%	Cr%	Tp%	Cr%	Tp%	Cr	Tp	Cr	Tp	Cr	Tp	Cr	Tp	Cr	Tp	Cr	
UBB01A	300 – 3200	50	30	Not measured		82	600	83	650	81	650	79	700	82	800	82	800	86	5000	
UBB02A	400 – 1100	-	-	90	40	90	40	90	100	90	100	90	100	90	100	-	-	-	-	

The visual criteria (VC) specification is shown in the table below.

There are four different visual grades for small polarizers.

VC1 and VC0 are not available on standard large area polarizers (>2500 mm²).

Visual criteria specification								
Max. part size	VC4		VC2		VC1		VC0	
	100 x 100 mm		50 x 50 mm		25.4 x 25.4 mm		25.4 x 25.4 mm	
Criteria	Size	Max. quantity	Size	Max. quantity	Size	Max. quantity	Size	Max. quantity
Pinholes	>1.5 mm	0	>0.5 mm	0	>0.3 mm	0	>0.15 mm	0
	0.6 - 1.5 mm	5	0.3 - 0.5 mm	4	0.15 - 0.3 mm	4	<0.15 mm	No limit
	<0.6 mm	No limit	<0.3 mm	No limit	<0.15 mm	No limit		
Spots	>1.5 mm	0	>0.5 mm	0	>0.3 mm	0	>0.3 mm	0
	0.6 - 1.5 mm	5	0.3 - 0.5 mm	4	0.15 - 0.3 mm	6	0.15 - 0.3 mm	6
	<0.6 mm	No limit	<0.3 mm	No limit	<0.15 mm	No limit	<0.15 mm	No limit