

# Absorptive Polarizer

ABS Series Datasheet



ABS Polarizers  
(mounting optional)

## Applications

- Projection displays
- Polarizing modulators
- Polarizing cameras
- Analytical systems
- Automotive

## Standard Product Options

Product Name	Description
ACB5XSEC	Balanced Transmission/ Contrast <b>(Blue)</b>
ABBS5C	High Transmission <b>(Blue)</b>
ABG08C	High Contrast <b>(Green)</b>
GCG8LGER	Balanced + Overcoat <b>(Green)</b>
ABGS5C	High Transmission <b>(Green)</b>
GCH8XCEC	High Contrast Broadband <b>(RGB)</b>
SCG8XSEC	High Contrast <b>(Green)</b> (Double-sided ABS)

See OPT-DATA-1011 for size and mounting options

ProFlux® ABS series absorptive polarizers are optimized to absorb unwanted RGB light bands, reducing stray light and thermal loading caused by back reflections common in LCD projection displays. These inorganic polarizers are precision manufactured in high volumes using Moxtek's advanced NanoStack® technology and are ideal for many applications, including: high temperature projection displays, analytical systems, automotive, medical, research, and other applications. Our wire-grid polarizers are available in various sizes and shapes in both bare glass or in mounted forms.

Features	Benefits
Nanowire® Technology	Brightness and contrast uniformity
	±20° AOI without depolarization
Inorganic	High heat resistance
	Long life compared to organic polarizer
Absorptive	Extremely low reflection
	Reduced thermal load to LCD panel

## General Specifications

*Wavelength Ranges:* 420 - 500nm, 500 - 590nm, 610 - 680nm

*Substrate Type:* Display Grade Glass

*Thickness:* 0.7 ±0.07mm

*Index of Refraction:* 435.8: 1.5198nm  
643.8: 1.5078nm

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

*AOI (Angle of Incidence):* 0° ± 20°

*AR Coating:* 420 - 700nm visible AR coating

*Maximum Temperature:* 250°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.

## Performance Specifications at Normal Incidence

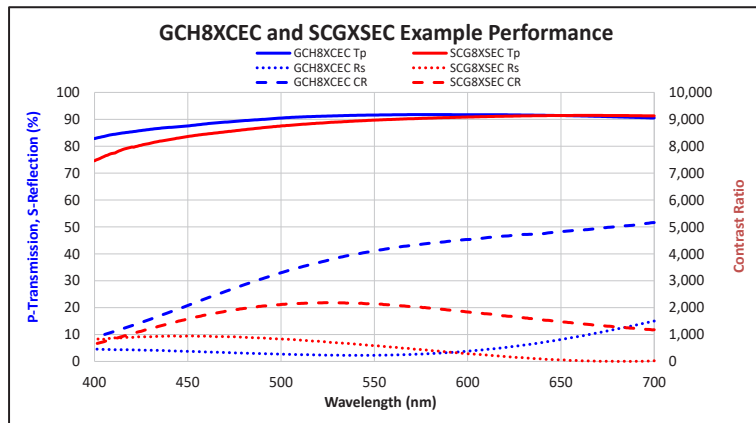
Product	Description	Blue (420-500nm)				Green (500-590nm)				Red (610-680nm)			
		Tp% (min)	Ts% (max)	Rp% (max)	Rs% (max)	Tp% (min)	Ts% (max)	Rp% (min)	Rs% (max)	Tp% (min)	Ts% (max)	Rp% (min)	Rs% (max)
ACB5XSEC	Balanced Trans/Con (Blue)	90	0.2	6	13	-	-	-	-	-	-	-	-
ABBS5C	High Transmission (Blue)	91	0.3	6	10	-	-	-	-	-	-	-	-
ABG08C	High Contrast (Green)	-	-	-	-	89	0.05	6	10	-	-	-	-
*GCG8LGER	Balanced + Overcoat™ (Green)	-	-	-	-	89	0.15	6	10	-	-	-	-
ABGS5C	High Transmission (Green)	-	-	-	-	92	0.3	6	13	-	-	-	-
GCH8XCEC	High Contrast Broadband (RGB)	-	-	-	-	89.5	0.1	4	7	90	0.1	6	10
SCG8XSEC	High Contrast (Green) (Double-sided Abs)	-	-	-	-	86	.05	6	10	-	-	-	-
		WGP side down			15	WGP side down			10	WGP side down			

Tp- Transmitted “p” polarization, Ts- Transmitted “s” polarization, Rp- Reflected “p” polarizer, Rs- Reflected “s” polarizer

\*GCG8LGER has a protective Overcoat™ hard coating to protect the polarizer ribs. See Tech note OPT-TECH-1013 for details.

### Example Optical Performance (Tested at 0°)

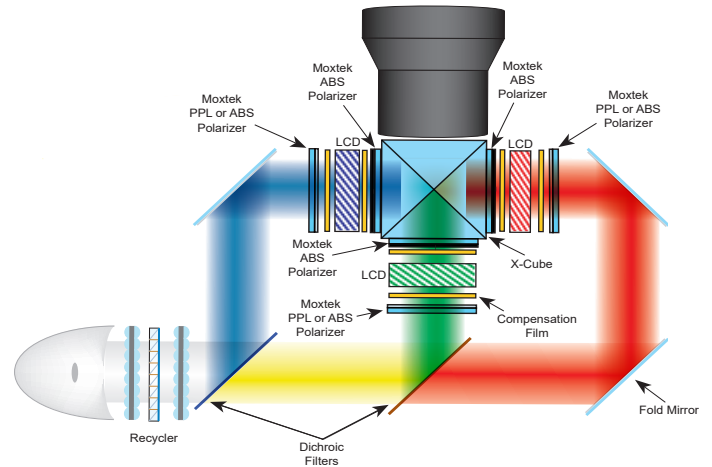
GCH8XCEC and SCG8XSEC are broadband absorptive polarizers designed for uniform performance across the visible spectrum at angles up to  $\pm 20^\circ$ . SCG8XSEC has an absorptive layer on both sides of the wire-grid structure enabling absorption of s-reflection from both directions.



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

### Projection Display Application Design Example

Absorptive polarizers are channel specific (RGB) and designed for demanding applications that require high transmission, high contrast, and low Rs. See the example below of a 3LCD projection application:



### 3LCD Projector Design



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Performance data was taken from sample evaluations. Some part-to-part variation is expected.  
For warranty and ordering information, please visit [moxtek.com](http://moxtek.com).