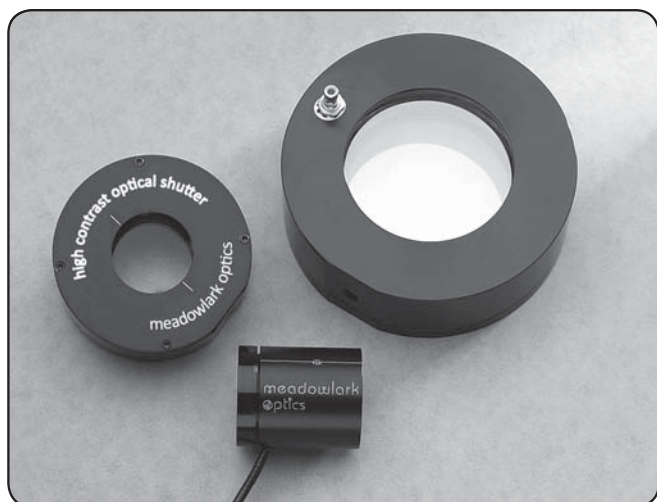


NEW

High Contrast Optical Shutter



SPECIFICATIONS	
Liquid crystal configuration	Twisted nematic
Substrate Material	Optical quality synthetic fused silica
Polarizer Material	Dichroic Polymer
Wavelength Range	450-700 nm
Contrast Ratio (average)	1,000:1
Angular Field of View	25° incidence angle with some reduction above 10°
Switching Time (10% to 90%) at room temperature	
Closed to open:	5 milliseconds
Open to closed	0.4 milliseconds
Transmitted Wavefront Distortion (at 632.8 nm)	$\leq \lambda/2$
Surface Quality	60-40 scratch and dig
Reflectance (per surface)	$\leq 0.5\%$ at normal incidence
Beam Deviation	≤ 5 arc min
Recommended Safe Operating Limit	1 W/cm ² , CW
Glass Thickness	0.48 — 0.52 inches
Polarization Direction	Vertical on input face, horizontal on output face
Storage temperature	-20° C to +80° C
Operating temperature	0° C to +50° C

Key Benefits

- High Contrast
- No mechanical motion
- Computer control capability
- No vibration

This liquid crystal shutter is a vibration-free alternative to mechanical shutter that is especially convenient for use in polarized light beams. The liquid crystal switches between a state that rotates the input polarization by 90° with no voltage applied and a state that makes no change in the input polarization with 8 to 10 volts applied. The applied voltage is 2 kHz AC as supplied by our 4010, 3040 or 3050 liquid crystal drivers. The liquid crystal configuration is twisted nematic. The shutter is supplied with integral dichroic visible polarizers that function over the wavelength range of 450 nm to 700 nm to provide an average contrast ratio of better than 1,000:1 over this wavelength range. Shutters with larger aperture sizes and with wavelength coverage to 2.1 microns are available on a custom basis. Please call with your special requirements.

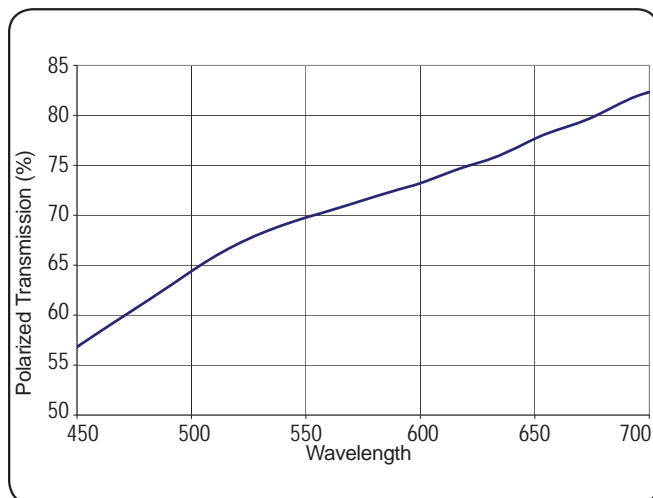


Fig. 4-16 Transmission for Polarized Light

ORDERING INFORMATION			
Diameter, D (in.)	Clear Aperture, CA (in.)	Thickness t (in.)	Part Number
1.00	0.37	1.23	LCS - 100
2.00	0.70	0.75	LCS - 200
3.00	1.60	1.00	LCS - 300

Polarizers

Retarders

Mounting Hardware

Liquid Crystal Devices

Liquid Crystal Controllers