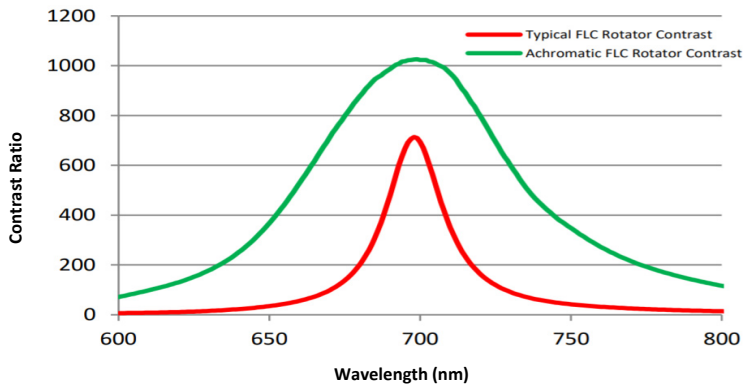
Achromatic High Speed Polarization Rotators & Shutters

Meadowlark Optics' Achromatic Ferroelectric Polarization Rotator features high speed and exceptional polarization purity over broad wavelength ranges. FLC devices offer a significant performance advantage in optical shutter and rotator applications demanding the fastest optical response times available.

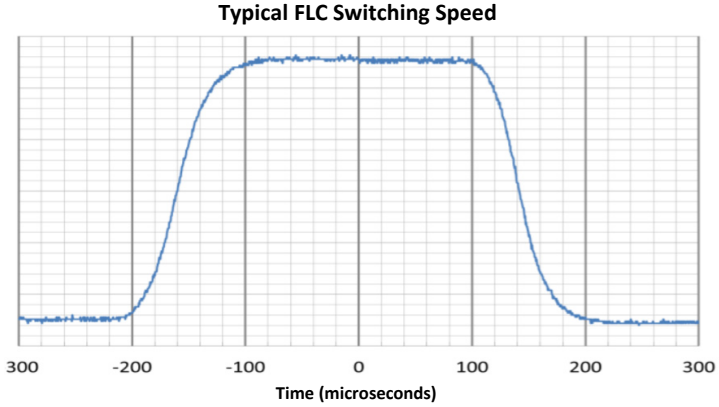
Since these devices are solid state – undesirable mechanical motion, associated noise, and vibration problems are eliminated. Key features of our FLC devices include 100 microsecond switching speed, high contrast linearly polarized output, and operation over the widest wavelength range available.

Typical applications of the FLC Achromatic Rotator include single camera 3D video capture, broadband phase modulators, beam steering, and polarimetry. Achromatic rotators are not limited to visible spectrum; we can design and build them in the near infrared as well.

High Polarization Purity over a Broad Wavelength Range



Typical FLC Switching Speed





Key Features

- Broadband performance
- Extremely fast switching speeds
- Silent, vibration-free
- Low-voltage operation
- OEM sizes and shapes
- No mechanical motion

Liquid Crystal Suite

Variable Retarders
Liquid Crystal Variable Retarder
UV Variable Retarder
MWIR Variable Retarder
OEM LCVR

Rotators
Achromatic High Speed Rotator
Binary Rotator
Polarization Rotator

Shutters / Attenuators
Achromatic High Speed Shutter
High Contrast Shutter
Variable Attenuator

Controllers
Analog Controller
FLC Controller
LC Digital Interface Controller
Temperature Controller
Two Channel High Voltage Controller

ROTATOR SPECIFICATIONS

Retarder Material	Ferroelectric liquid crystal
Substrate Material	Fused silica
Wavelength Range	405 – 850 nm *custom ranges up to 2 microns*
Transmitted Wavefront Distortion	λ/2 (P-V @ 633) λ/8 (RMS @ 633)
Surface Quality	60 – 40 scratch-dig
Beam Deviation	≤ 5 arc min
Outside Diameter (mounted)	2.00 ± 0.005 in. *please inquire about custom sizes*
Clear Aperture	0.70 in. (17.8 mm)
Response Time (10-90% & 90-10%)	≤ 100 µs at room temp *wavelength dependent*
Operating Temperature	20˚C to 30˚C
Storage Temperature	0˚C to 60˚C
Driver Requirements	± 5 to 30 Volts, 50% duty cycle

SHUTTER SPECIFICATIONS

(rotator with polarizers – includes specifications from above table)

Polarizer Material	Dichroic Polymer
Transmission *please inquire about higher transmission options*	≥ 30% (typical - unpolarized light) ≥ 65% (typical - polarized light)
Wavelength Range	450-720 nm *custom ranges up to 2 microns*
Transmitted Wavefront Distortion	λ/2 (P-V @ 633) λ/8 (RMS @ 633)
Contrast Ratio	≥ 200:1

CONTROLLER SPECIFICATIONS

Dimensions	5.3 in. W x 5.3 in. L x 2.0 in. H 13.5 cm W x 13.5 cm L x 5.1 cm H
Number of LC Channels	Two, running identical programs 180 degrees out of phase
Output Waveform	Bipolar ± 15V peak voltage, ± 10V holding voltage
Amplitude Resolution	16-bit; 1 mV voltage resolution
Internal Drive	1 to 10,000 Hz, 50% duty cycle, frequency controlled by front-panel 10-turn knob

ORDERING INFORMATION

Product Description	*Diameter in. (mm)*	*Clear Aperture in. (mm)*	*Thickness in. (mm)*	*Part Number*
Rotator	2.00 (50.8 mm)	0.70 (17.78 mm)	1.38 (19.05 mm)	FPA – 200 – λ
Shutter	1.00 (25.4 mm)	0.37 (9.4 mm)	1.42 (36.07 mm)	FCS – 100 – λ
	2.00 (50.8 mm)	0.70 (17.78 mm)	1.13 (28.7 mm)	FCS – 200 – λ
Controller	N/A	N/A	N/A	FC – 010

Please specify a wavelength when placing your order.

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