Why Choose Meadowlark Liquid Crystal Devices?

Industry-Leading Metrology – Meadowlark is the most experienced manufacturer of precision liquid crystal devices. Our proprietary measurement techniques provide you with extremely accurate calibration for every liquid crystal device we ship.

High Quality and Precision – When selecting a liquid crystal device, key performance features must be considered. These include wavelength dependence, temperature sensitivity, laser damage threshold, response time and aperture size. Our liquid crystal selection chart provides an at-a-glance review of our standard LC devices; as always, Meadowlark Solutions Engineers are happy to assist you in the process of selecting an LC component or controller that works for your application.

Did You Know?

Meadowlark Optics was the first to develop a commercially available Liquid Crystal Variable Retarder? Our LCVRs are now the fundamental component used in the following devices and systems:

- Rotators
- Variable Beamsplitters
- Spatial Light Modulators
- Non-Mechanical Shutters
- Beam Steerers
- Optical Compensators
- Polarimeters
- Tunable Filters

About Meadowlark Optics

Innovating since 1979 – Meadowlark Optics has provided world-class polarization optics and liquid crystal solutions for a variety of applications for 46 years. To ensure precision and top quality, our 30,000 SF headquarters and manufacturing facility boasts the latest in clean rooms, optical fabrication, and metrology equipment. Need help selecting the right product for your application? Contact one of our Solutions Engineers to discuss your requirements.

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LIQUID CRYSTAL DEVICES

SELECTION GUIDE

POLARIZERS • SPATIAL LIGHT MODULATORS • WAVEPLATES • LIQUID CRYSTAL DEVICES • OTHER CAPABILITIES

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Celebrating 46 Years of Photonics Innovation

	LIQUID CRYSTAL COMPONENT		FEATURES	WAVELENGTHS	*TWD (P-V)	SWITCHING SPEED	CONTRAST RATIO	BEAM DEVIATION
Variable Retarders		LC Variable Retarder	• Custom retardances • Temperature control options • Available compensated • Precision non-mechanical retardation control	VIS –NIR 450 – 1800 nm	≤ λ/5	10 – 30 ms	N/A	≤ 2 arc min
		OEM LC Variable Retarder	• Precision control at lower cost • Scalable quantities (Quantities of 20 – 100s) • Thin housing • Large clear aperture	VIS –NIR 450 – 1800 nm	≤ λ/2	10 – 30 ms	N/A	≤ 3 arc min
		High Speed LC Variable Retarder	• Sub-millisecond switching • ***Does not require 50/50 duty cycle drive scheme*** • Ships complete with controller & software • No mechanical motion	VIS 450 – 700 nm	≤ λ/4	~1 ms	N/A	≤ 2 arc min
		UV LC Variable Retarder	• Phase or amplitude modulation of UV spectrum • Analog modulation • Non-mechanical polarization control	UV 350 – 450 nm	≤ λ/4	~ 4 ms	N/A	≤ 2 arc min
Rotators		LC Polarization Rotator	• High polarization purity • 180-degree polarization rotation • Continuous rotation of linearly polarized light	VIS –NIR 450 – 1800 nm	≤ λ/4	10 – 30 ms	150:1 average	≤ 2 arc min
		High Speed Ferroelectric LC Polarization Rotator	• Sub-millisecond switching speeds • Broadband performance • Silent, vibration-free • Binary switching	VIS 405 – 850 nm	≤ λ/2	< 100 µs	N/A	≤ 5 arc min
		Binary LC Rotator (twisted nematic)	• High polarization purity • Silent, vibration-free, low voltage operation • Broad thermal range • Faster switching speeds than LCVRs	VIS –NIR 400 – 1800 nm	≤ λ/5	5 – 15 ms	500:1	≤ 2 arc min
Shutters / Attenuators		High Speed Ferroelectric LC Optical Shutter	• Sub-millisecond switching speeds • Stand alone controller available • Silent, vibration-free • OEM sizes and shapes	VIS 400 – 750 nm	≤ λ/2	< 100 µs	N/A	≤ 5 arc min
		High Contrast Optical Shutter (twisted nematic)	• High contrast • No mechanical motion • No vibration	VIS –NIR 450 – 1800 nm	≤ λ/2	5 – 15 ms	1,000:1	≤ 5 arc min
		LC Variable Attenuator (twisted nematic)	• High contrast • Computer control capabilities • Continuous control of light intensity	VIS –NIR 450 – 1800 nm	≤ λ/4	5 – 15 ms	500:1	≤ 2 arc min

*Switching speeds vary by wavelength and temperature. Speeds shown are approximate.

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polarization solutions