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Specification Sheet

Liquid Crystal Variable Waveplate

The liquid crystal variable waveplate is a versatile solid-state device capable of multiple retardation states. This unique component requires no compensation film and tunes the retardance values through a 0-25 volt AC signal. Discrete voltage changes can either increase or decrease retardance values throughout a 400-700nm range. In addition to this standard off the shelf component, custom-built variable waveplates can be developed for many wavelength ranges to meet OEM specifications. Bolder Vision's expertise is bringing custom prototypes to volume production.

Specification	Standard Device Description
Birefringent Material	Nematic liquid crystal with no compensation film
Substrates	Industry standard soda lime
Size	23.1mm x 25.1mm, with 17mm clear aperture
Unit Thickness	2mm
Wavelength	Over visible region from 400–700nm
Reflectance	≤ 0.5% per surface typical with AR coated endcaps (normal incidence) ≤ 4.25% per surface typical without AR coated endcaps (normal incidence)
Surface Quality	60-40 scratch/dig
Field of View	≤ 5° to maintain contrast ratio
Operating Range	0° Celsius to +60° Celsius, non-cycled
Electrical Drive	0 Volts _{pp} to 15 Volts _{pp} , 2 KHz AC square wave AC voltage, zero DC Bias
Response Times	Send time – 5 msec typical, Relaxation time – 40 msec typical
Capacitance	≤ 3nF
Damage Threshold	500 Watt/cm ² CW 300 mJ/cm ² 10 nsec pulses @ 532nm 500 mJ/cm ² 10 nsec pulses @ 1064nm typical

Bolder Vision Optik
P.O. Box 18702
Boulder, Colorado
80308-1702



Phone: 303.440.3327
FAX: 303.823.6433
E-Mail: info@boldervision.com