

# Right-handed CLC One Component Narrowband Circular Polarizers

## KEY BENEFITS

- 1 component polarizer with high transmission
- Transmissive outside of operating band
- Better temperature and power handling
- Larger format available
- Customizable center wavelength and bandwidth

## PERFORMANCE SPECIFICATIONS

Property	Specification
Polarizing Material	Cholesteric Liquid Crystal Polymer Film
Retarder Material	None
Substrate Material*	Float glass
Substrate Reflectance (optional, per surface)	0.5%
Surface flatness S-D	80-50
Left Handed Circular Polarization Transmission	>90% in Band (>85% in Band for UV Products)
Right Handed Circular Polarization Transmission	<0.5% in Band
Contrast Ratio	>180 in Band (>170 for UV Products)
Temperature Range*	-20°C to 75°C

\* Choice of substrates available upon request; operating temperature range can be large than specified depending on use.

## WAVELENGTH SPECIFICATIONS

	Center Wavelength*	Operating Range**
UV	350	340-360
	380	370-390
Visible	530	510-550
	630	610-650
	670	645-695
Infra-red	780	755-805
	850	820-880
	900	970-930
	1100	1065-1135
	1300	1255-1345
	1550	1500-1600

\*Center wavelengths listed above are available upon requests.

\*\*Full Width Half Maximum Bandwidth for each product is larger than the operating range listed above.

## SIZE SPECIFICATIONS

Property	Specification
Standard Size (diameter)	1"
Clear Aperture	>90%
Thickness	2 mm

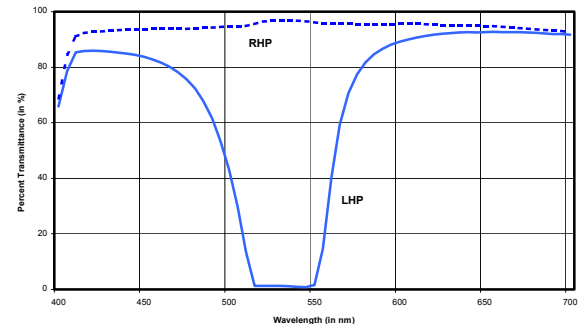
*Custom formats of our CLC Circular Polarizers are available. Call for a quote.*

## Narrowband Polarizer Performance

CHELIX can design circular polarizers with narrow band (~50nm) format. This ability enables fine-tuning polarization performance to your specific requirements.

Figure 1 illustrates CLC narrowband reflective polarizer in the visible. The figure shows the transmittance of two orthogonal circular polarizations through the same sample. Light, which is not transmitted, is reflected.

Figure 1: Narrowband 530nm CLC Polarizer Transmittance



## How narrow is a narrowband CLC?

CLC Narrowband Circular polarizers have operational bandwidth (flat part of curve in Fig. 1) proportional to the center wavelength that can be estimated by:

$$\text{Operational Bandwidth} \approx \text{Center } \lambda / 15$$

For example, a narrowband polarize with center wavelength at 530 nm would have an operational bandwidth of approximately 35 nm. If this bandwidth is not wide enough for your application, CHELIX can customize a broadband polarizer that will meet your specific needs.