

## Rolic® LCMO Demonstrator:



## LCMO Linear Polarizer grey (LPg)

**Description** Rolic® LCMO Linear Polarizers grey are designed using Rolic's proprietary dichroic dyes in combination with Light Controlled Molecular Orientation (LCMO) technology. This design enables a flexible solution, wherever a thin polarizer is required and standard PVA polarizers are too thick or for other reasons not compatible.

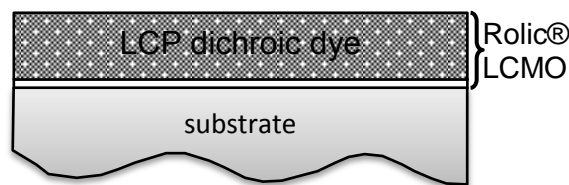
**Features** Rolic® film patterned retarder are produced using the Rolic® LCMO (Light Controlled Molecular Orientation) technology, which is photo alignment of Linear Photo Polymerization materials (LPP) and subsequent orientation of Liquid Crystal Polymers (LCP).

**This technology enables:**

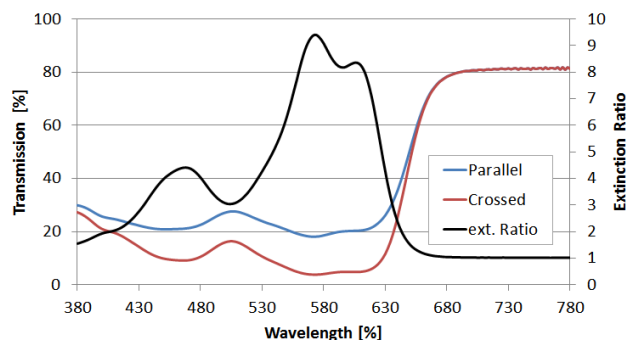
- combination with other LCMO-optical films
- wide substrate choice (also glass)
- thinner polarizers compared to standard PVA polarizers
- pattern in form of pixel lines, chess board or any other pattern
- high resolution
- high environmental stability (UV-, thermal- and humidity- stable)
- exact orientation of the optical axis and low cross talk between patterns

**Stack design:**

LPg



**Optical characterization:**



## LCMO Linear Polarizer colour options Rolic® (LPx):



<b>Properties of LPg</b>	Substrate	TAC (Cellulose Triacetate)
<b>Demonstrator:</b>	Total thickness	<60 µm
	Substrate thickness	50 µm
	Coating thickness	<10 µm
	Polarization efficiency	80 % @ $\lambda_{max}$ (575nm)
	Dichroic Ratio (DR)	5.37 @ $\lambda_{max}$ (575nm)
	Color coordinates	L = 69, a* = 1.9, b* = 0.7
<b>Life-time</b>	Optical films produced with Rolic's LCMO technology will maintain their orientation even under thermal stress, high humidity and exposure to intensive visible light. DR after 72h @80°C >97% of initial DR; DR after 24h UVB >82% of initial DR.	
<b>Customization</b>	While the demonstrators have been designed to showcase the application of Rolic LCMO technology as a grey linear polarizer, the same technology can be used for customized solutions.	
<b>Range of properties:</b>	Substrate	any substrate (any chemistry, any thickness, rigid, flexible)
	Transmission parallel	optimized @ required wavelength range
	Transmission crossed	optimized @ required wavelength range
	Patterning	in form of (pixel-) lines, chess board or any other pattern
	Resolution	> 10 µm
	Color coordinates	according to customer requirements (see picture on top)

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