

 licrivision®

EMD  
PERFORMANCE  
MATERIALS

# AT THE HEART OF DYNAMIC WINDOWS

Liquid Crystal Mixtures for Solar Control and Privacy



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**Licrivision®** is a range of liquid crystal (LC) mixtures at the heart of dynamic windows. LC mixtures are embedded into LC cells<sup>1</sup>. Thanks to the quick response of the LC's components to an applied voltage, the intensity of the light, haze, glare and transparency may be instantly and finely modulated.

Licrivision® enables windows for solar control and privacy use in applications like architecture, interior design, transportation and more.

## Licrivision® Solar

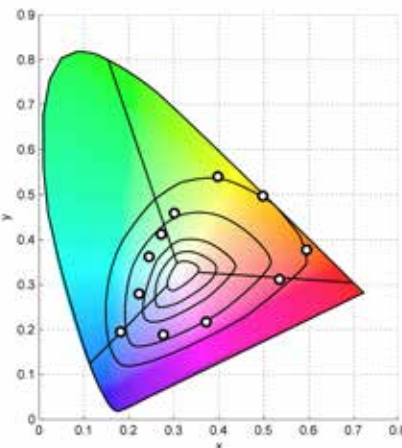
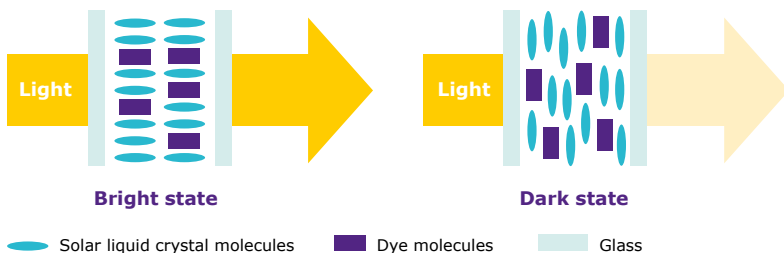
Licrivision® Solar offers a wide range of dye-doped LC mixtures, for nearly any CRI\* and saturation level. The dyes in the LC mixture are responsible for absorbing the light passing through the window. Their re-orientation happen instantaneously, is easily controlled by a low AC voltage, and allows for precisely tune the intensity of the light.

### Solar Control Performance

The table below compiles data for: Solar Bright, our mixture with the brightest state; Solar Dark, the mixture with the darkest tint (especially suitable for roofs); Solar Blue, an example of colored mixture (to show that Licrivision® may be customized to the color needs of every application).

	Clearing Point (°C)	Light Transmittance		General Color Rendering Index	
		Bright %	Dark %	Ra bright	Ra dark
<b>Solar Bright</b>	114	52	11	96	95
<b>Solar Dark</b>	114	39	2	95	74
<b>Solar Blue</b>	114	52	13	89	45

Values were calculated, according to EN-410 and EN-673 using eyrise™ IGUs (Insulated Glass Units) as test system



CIE 1931 color space chromaticity diagram. The points represent examples for dark states achievable with current Licrivision® mixtures. The round lines are the saturation levels 1,2,3,5,7

## Licrivision® Privacy

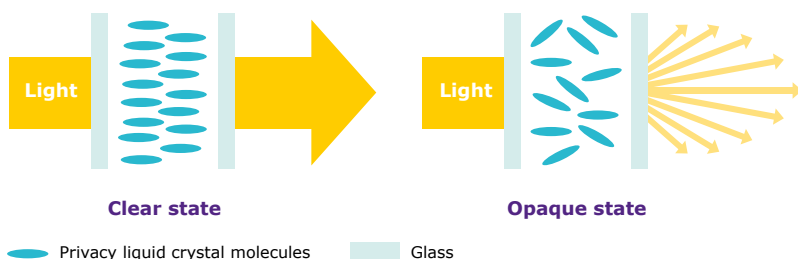
Licrivision® Privacy are cholesteric LC mixtures, capable of instantly turning a transparent window into an opaque panel. This effect is obtained by the re-orientation of the liquid crystals' components. Their resulting random position induces the scattering of the light, which provides a strong translucent state, i.e. no see-through is possible, still the transmitted light intensity remains high.

### Privacy Performance

The table below compiles data for Privacy Interior, our mixture for interior applications like partitioning walls and doors. It provides a very opaque "private" state and a unique clear state with high transparency and virtually no angular haze.

	Clearing Point (°C)	Light Transmittance		CRI*	Haze	
		Clear %	Opaque %		Clear	Opaque
<b>Privacy Interior</b>	101	85	75	97	<4%	>95%

Values were measured using eyrise™ cell as test system. \*CRI = General Color Rendering Index



### <sup>1</sup>eyrise™ LC cell

An LC cell is made of 2 TCO (Transparent Conductive Oxide) and PI (Polyimide) coated glass sheets or plastic substrates. By applying a voltage to the cell, the components of the Licrivision® mixture are switched to control the transmittance of the light passing through the window.