

Liquid CRYSTAL WINDOW Technology

TECHNICAL DATA SHEET –
SOLAR CONTROL WINDOWS
FOR ARCHITECTURE



LCW SOLAR CONTROL GLAZING

LCW solar control glazing gives you the power to control the amount of sunlight through your window. This is a switchable glazing technology based on liquid crystals. It gives the designers access to color neutrality together with fast switching. With the flick of a switch the transmission of the window will change from bright to dark, whilst maintaining a crystal clear view. The windows can switch to all intermediate states in-between bright and dark.

Benefits

- Color neutral, or pick your own specific color
- Fast switching, less than 2 seconds
- Design freedom, multiple shapes possible
- Intermediate dimmable, linear greyscale achievable, with the window controller it can be integrated to any building management system
- Tailor-made opportunities, possibility to fine tune color for specific project applications

Application

- LCW solar control has been designed for exterior applications, it is designed to withstand high and low temperatures, high solar loads, and it is lifetime stable
- LCW solar control is designed for glass facades, windows, and even frameless installations are an option
- LCW solar control can be used in homes, office buildings, governmental buildings as well as hospitals

PRODUCT SPECIFICATIONS

Liquid Crystal Window sizes:

min. 405 x 410 mm
max. 1600 x 3505 mm

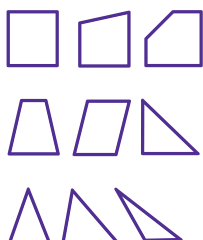
Glass thickness:

LCW solar control module: 16 mm
Cover sheet: float 4–12 mm

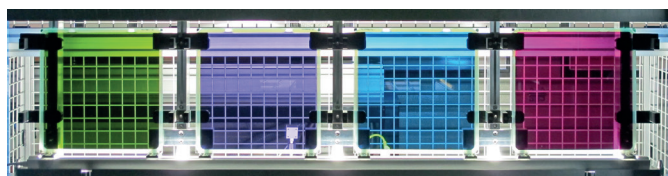
U_g-value (acc. to EN 673): 1.1 W/m²K

Switching speed: < 2 sec.

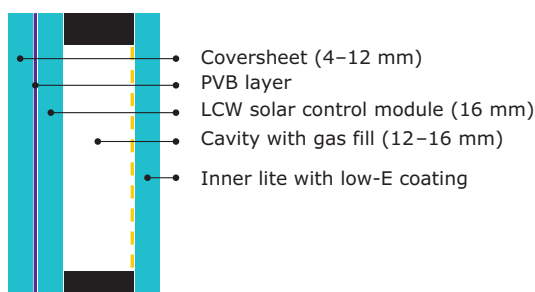
Shapes possible: Various shapes like trapezoids, parallelograms and triangles are possible.



Colors: Various colors are possible, as well as neutral for exceptional color rendering.



Engineering detail drawing:





Innovation Center at Merck KGaA, Darmstadt, Germany headquarters powered by Liquid Crystal Windows (LCW) solar control technology.



IGU PERFORMANCE SPECIFICATIONS*

LCW solar control – 16 mm argon – low-E on position 3							LCW solar control – 16 mm argon – solar control on position 3						
	Light transmittance		Solar factor/ g-value		General color rendering index			Light transmittance		Solar factor/ g-value		General color rendering index	
	bright (%)	dark (%)	bright	dark	R _a bright	R _a dark		bright (%)	dark (%)	bright	dark	R _a bright	R _a dark
Licrivision™ solar 70/30	67	31	0.45	0.31	96	97	Licrivision™ solar 60/20	58	27	0.36	0.22	94	96
Licrivision™ solar 65/25	62	20	0.44	0.26	97	95	Licrivision™ solar 55/17	54	17	0.34	0.17	95	96
Licrivision™ solar 60/20	57	11	0.42	0.22	97	92	Licrivision™ solar 50/14	50	10	0.32	0.14	95	94
Licrivision™ solar 55/20	54	8	0.41	0.20	97	90	Licrivision™ solar 47/12	47	7	0.31	0.12	96	92
Licrivision™ solar 45/17	42	2	0.36	0.17	98	79	Licrivision™ solar 40/9	37	1	0.26	0.09	96	80

- All values are calculated values, according to EN-410 and EN-673.
- * Other configurations like triple glazing are possible.

ELECTRICAL SPECIFICATIONS

Energy consumption	< 1 W/m ²
Window controller	Din rail window controller: 24/48 V DC power input; can switch up to 8 windows per controller; BMS capable linear dimmable 1/10 V input.
Glas connection	Each glass has a 30 cm pigtail plug and play IPX 67 water resistant connection.

NORMS

Tests performed according to	EN ISO 12543-4 Laminated glass and laminated safety glass EN 1279-2 Insulating glass units
Visual defects bulletin	According to “Guidelines to assess the visible quality of glass in buildings” and “Guidelines for assessing the visual quality for systems in multiple-sheet insulating glass” issued by Bundesverband Flachglas e.V.
Safety requirements	TRAV Category C Pendulum test passed (acc. to EN 12600)

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