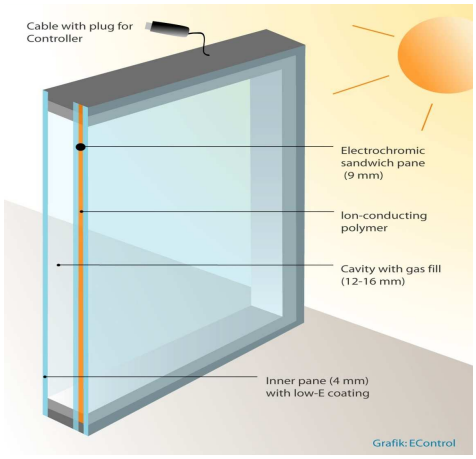
INFOTEXT

We take architectural glass a step ahead.

OKA*SWITCH*-EC - Electronically switchable glass

OKA*SWITCH*-EC is an electrochromic glass which changes its brightness at the press of a button. When a small electricalvoltage (approx. 3 V) is applied, the glass changes its colour to dark blue, or its turns transparent.



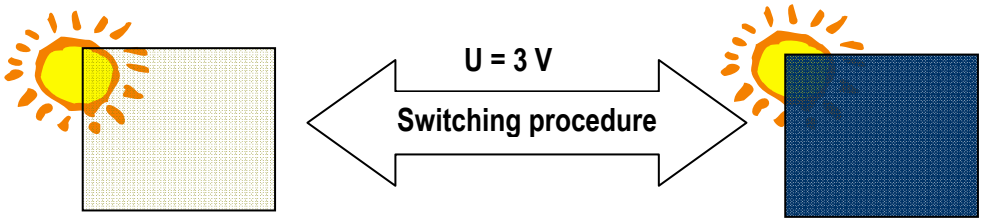
Constructional properties

Thermal insulation

When using insulated glass, combinations of thermal insulation coatings and gas-filled voids enables any U_g values to be achieved up to U_g = 1.1 W/(m²K) when configured as double insulating glass.

Spectral properties

In the darkened condition, up to 85% of the incident light and 100% of harmful UV radiation are blocked. In its light condition, the glass is almost neutral. OKA*SWITCH*-EC enables the user to control the brightness and energy input actively with five switch settings. Heating costs, as well as the costs for cooling and artificial lighting can therefore be reduced by up to 50%. OKA*SWITCH*-EC only requires 0.5 Wh/m² for a complete change of transmissivity.



Bright condition:
approx. 53 % light transmission

Dark condition:
approx. 15 % light transmission

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Technical values of standard types

Temperature range: Operation (0-70°) pane temperature for switching, although lower temperatures do not have any negative effect on the product

Electrical power supply:

Operating voltage	24 V for control units
Switching procedure	approx. 3 V
Switched condition	0 V
Power	approx. 10 watts/control unit

Switching time: approx. 12-15 minutes at room temperature and a pane size of 1000 mm x 1000 mm

Service life: more than 20.000 switching cycles, i.e. > 20 years

The following data applies to a double pane unit with a 16 mm cavity between the panes filled with air and argon gas, or 10 mm filled with krypton. The calculations assume a glass thickness of 9 mm for the EC outer pane and 4 mm for the inner pane.

Table 1. Spectral properties and U_g-value of double pane insulating glass unit

ε Emissivity of the coating	Switching condition	T_v %	T_{uv} %	R_v %	TSET %	U_g value [W/(m²K)]		
						Krypton	Argon	Air
0.03	Light Dark	53 15	3 0	11 9	39 12	1.0	1.1	1.4
0.02	Light Dark	53 15	3 0	11 9	39 12	1.0	1.1	1.3
0.01	Light Dark	53 15	3 0	11 9	39 12	1.0	1.0	1.3

The following data applies to a triple pane unit with two times 12 mm cavity between the panes. The calculations assume a glass thickness of 9 mm for the EC outer pane, 4 mm for the intermediate pane and 4 mm for the inner pane.

Table 2. Spectral properties and U_g-value of timple pane insulating glass unit

ε Emissivity of the coating	Switching condition	T_v %	T_{uv} %	R_v %	TSET %	U_g value [W/(m²K)]		
						Krypton	Argon	Air
0.03	Light Dark	48 13	2 0	13 9	33 9	0.5	0.7	0.9
0.02	Light Dark	48 13	2 0	13 9	33 9	0.5	0.7	0.9
0.01	Light Dark	48 13	2 0	13 9	33 9	0.4	0.7	0.9

Legend and related values:

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	Unit	Standard	technical term
U_g	W/(m²K)	DIN EN 673 DIN EN 674	Thermal transmittance
g	%	DIN EN 410	Total energy transmittance
T_v	%	DIN EN 410	Light transmissivity (direct/hemispherical or diffuse/hemispherical)
T_{uv}	%	DIN EN 410	UV Spectral transmission
R_v	%	DIN EN 410	Light reflection
F_C	%	DIN 4108	Degradation factor of a sun protection system, $F_C=g/g_{reference}$
SC	%	GANA manual	Shading coefficient, SC = g/0.86

The specified values are approximate. They have been found on the basis of measurements by approved test institutes and the derived calculations. Values calculated for the specific project may differ from the aforementioned values.

Direct transmission relates to directed, generally perpendicular, incident light (model situation for direct insolation). Diffuse transmission applies to homogenous, diffuse incident light from the outer hemisphere (model situation for an overcast sky).

The specified values may change in response to ongoing technical developments, therefore no liability can be accepted for the accuracy of the values.

Make-up

Standard glass thicknesses

Double insulating glass; total thickness: 29 mm

Outer pane:	EC 9 mm
Cavity:	16 mm
Inner pane:	Float 4 mm

Triple insulating glass; total thickness: 41 mm

Outer pane:	EC 9 mm
Cavity:	12 mm
Middle pane:	ESG 4 mm
Cavity:	12 mm
Inner pane:	Float 4 mm

Dimensions & installation

Minimum dimension:	400 mm x 400 mm
Maximum dimension:	1250 mm x 2400 mm
From spring 2011 onwards	1300 mm x 3000 mm

Other printed matter

If you do not have the following printer matter, please request it directly from OKALUX or download it from the Internet at www.okalux.com:

General terms and conditions of business
Product-specific information texts

As well as these, there are the following customer notes:

Customer notes on offers
Customer notes on delivery
Customer notes alarm glass
Customer notes screen printing
Customer notes Structural Glazing / Edge deletion
Customer notes on heat-soak test
Customer notes on glazing
Customer notes SIGNAPUR®
Customer notes installation of OKA*FLEX*
Customer notes installation of OKA*PANE*
Customer notes OKA*WOOD* tolerances
Customer notes OKA*CELL* product specification
Cleaning instructions for OKA*LUX* gen.
Cleaning instructions OKA*COLOR*
Guideline for visual quality