

OKASOLAR P

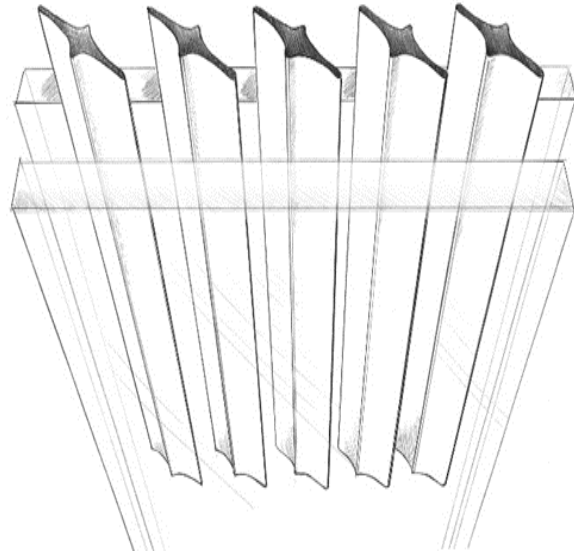
Glazing with direction-sensitive privacy screening

OKASOLAR P is an insulating glass with fixed; vertical louvres in the cavity between the glass panes

OKASOLAR P enables partial transparency in one direction at the same time as privacy screening adapted to individual requirements in the other direction, and has been optimised for use in the building façade.

Thanks to its three-dimensional geometry, OKASOLAR P offers:

- Direction-sensitive privacy screening
- Partial through-vision
- High daylight levels
- Can be easily recycled
- Visibility for birds



Physical properties

Thermal insulation

OKASOLAR P is available as a 2-pane make-up with cavity between the panes of 24 mm, and also as a 3-pane make-up with an additional cavity between the panes.

Depending on the gas filling and coating, the 2-pane make-up achieves U_g values $\geq 1.3 \text{ W}/(\text{m}^2\text{K})$. As a 3-pane make-up, U_g values $\geq 0.6 \text{ W}/(\text{m}^2\text{K})$ are possible.

Sound insulation

The integrated louvres have no significant effect on the sound insulation. The achievable values depend on the glass assembly.

Spectral properties

The specially shaped cross section of the louvres enables partial transparency in one direction as well as privacy screening in the other. The sunlight hitting the vertical louvre is mainly diffused and reflected outside on the concave shaped surfaces of the louvre.

Integrated in a vertical façade, OKASOLAR P functions as follows:

1. In the case of light entering from the direction of partial transparency
 - partial transmission of the direct sunlight
 - diffuse radiation (overcast sky)
 - up to 60% transparency, depending on type

2. In the case of light entering perpendicularly to the surface of the façade
 - partial transmission of the direct sunlight
 - diffuse radiation (overcast sky)
 - between 0% and 50% transparency, depending on type

3. In the case of light entering from the blocking side
 - no transmission of the direct sunlight
 - diffuse radiation (overcast sky)
 - no transparency



Technical values of standard types

Table 1: Geometry of the different OKASOLAR P-Typen

Typ OKASOLAR	Angle of louvre [°]	Distance of louvre [mm]	Horizontal troughvision %	Troughvision to		Fade-out angle g [°]
				Blocking side a [°]	Open side b [°]	
36-0	36	21,5	0	0	66	0
P 30-08	30	31	26	30	74	30
P 30-23	30	46	50	60	79	60

The following information applies to 2-pane make-up consisting an external pane with a thickness of 6 mm and an inner pane with a thickness of 6 mm with a functional coating at face #3.

Table 2a: Technical values for 2-pane make-up with thermal control coating

Typ OKASOLAR	T _v [%]	g-value [%]	U _g value [W/(m ² K)] U _g [Btu/[hfr ft ² F]] cavity 24 mm		
			Krypton	Argon	Air
P 36-0	1	3	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)
P 30-08	28	25	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)
P 30-23	43	37	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)

The following information applies to 2-pane make-up consisting a 6 mm external pane with a low-e coating as well as solar control coating 70/37 at face #2 and a 6 mm inner pane.

Table 2b: Technical values for the 2-pane make-up with low-e coating as well as solar control coating 70/37

Typ OKASOLAR	T _v [%]	g-value [%]	U _g value [W/(m ² K)] U _g [Btu/[hfr ft ² F]] cavity 24 mm		
			Krypton	Argon	Air
P 36-0	1	12	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)
P 30-08	24	23	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)
P 30-23	38	25	1.3 (0.23)	1.5 (0.26)	1.7 (0.30)

The following details apply for 3-pane assemblies comprised of a 6 mm outer pane, a 6 mm centre pane with a heat-reflective layer in position 3 and a 6 mm inner pane with a heat-reflective layer in position 5.

Table 3a: Technical values for the 3-pane make-up with low-e coating

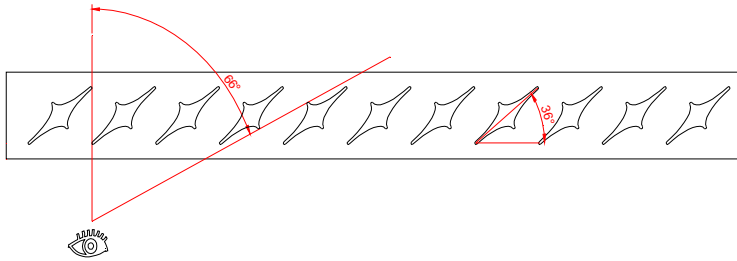
Typ OKASOLAR	T _v %	g-value %	U _g value [W/(m ² K)] U _g [Btu/[hfr ft ² F]] cavity 24 mm/10 mm		
			Krypton	Argon	Air
P 36-0	1	1	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)
P 30-08	25	21	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)
P 30-23	39	30	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)

The following details apply for 3-pane assemblies comprised of a 6 mm outer pane with a combined 70/37 sunlight/heat reflective layer in position 2, a 6 mm centre pane and a 6 mm inner pane with a heat-reflective layer in position 5.

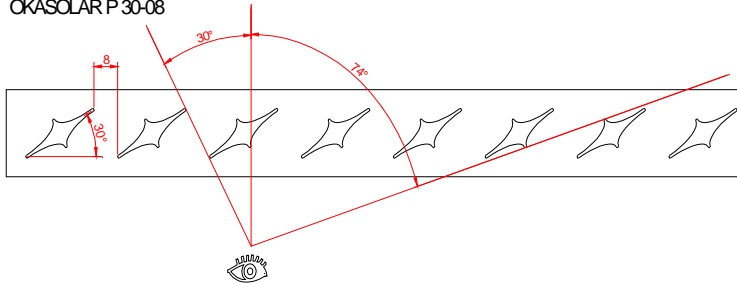
Table 3b: Technical figures for the 3-pane make-up with combined 70/37sunlight/heat-reflective layer

Typ OKASOLAR	T _v %	g-value %	U _g value [W/(m ² K)] U _g [Btu/[hfr ft ² F]] cavity 24 mm/10 mm		
			Krypton	Argon	Air
P 36-0	1	6	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)
P 30-08	22	18	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)
P 30-23	34	21	0.6 (0.11)	0.8 (0.14)	1.0 (0.18)

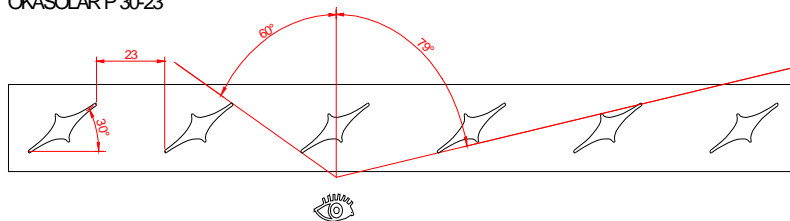
OKASOLAR P 36-0



OKASOLAR P 30-08



OKASOLAR P 30-23



Legend and related values:

	unit	standard	technical term
U_g	W/(m ² K)	DIN EN 673 DIN EN 674	Thermal transmittance
TSET	%	DIN EN 410	Total solar energy transmittance or solar heat gain coefficient
T_v	%	DIN EN 410	Light transmission (direct/hemispheric resp. diffuse/hemispheric)
R_w	dB	DIN EN 20140	Sound reduction coefficient
F_c	%	DIN 4108	Reduction factor of a solar control system, F _c =TSET/TSET _{reference}
SC	%	GANA Manual	Shading coefficient, SC=TSET/0.86

The above data are approximate data. They are based on measurements of approved test institutes and calculations derived from these measurements. Values determined on a project-specific basis may vary from the above values. The values continue to vary if other coatings are used.

Direct transmission relates to direct incidence of light, generally vertical (model situation for direct sunlight). Diffuse transmission applies to homogeneous, diffuse incidence of light from the outer hemisphere (model situation for an overcast sky). All values were measured hemispherically.

The specified values may change as a result of technical developments. No guarantee is therefore given for their correctness.

Make-up

The special feature of OKASOLAR P is that the louvres for privacy screening are integrated in the cavity between the glass and therefore pose no special requirements concerning the installation, maintenance and cleaning. In fact, the OKASOLAR element can be treated like conventional insulating glass. The glass thickness and type are based on the structural needs and constructional requirements.

Standard make-up:

2-pane make-up

Outer pane made of thermally treated glass

Cavity: 24 mm with integrated louvres and gas filling

Inner pane made of thermally treated glass, heat-reflective layer #3

3-pane make-up

Outer pane made of thermally treated glass

Cavity 1 24 mm with integrated louvres and gas filling

Centre pane made of thermally treated glass, heat-reflective layer #3

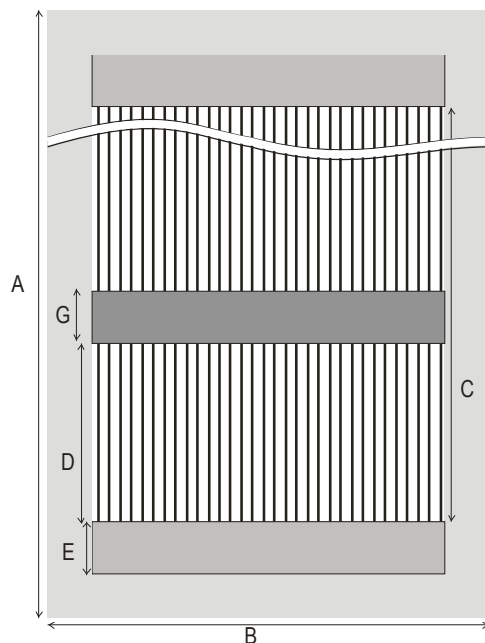
Cavity 2 8 to 12 mm with gas filling

Inner pane made of thermally treated glass, heat-reflective layer #5

Dimensions

The table and drawing below show maximum dimensions and visible widths.

glass dimension parallel to louvre direction	A	max. 3000 mm
glass dimension perpendicular to louvre direction	B	max. 4000 mm
louvre length	C	max. 3000 mm
unsupported span of louvres	D	max. 1000 mm
visible width edge profile	E	12,76 mm
visible width of joint profile	G	12,76 mm



The maximum area is 7 m². Special shapes are possible. The feasibility and divisions must be discussed with OKALUX beforehand. It may be necessary to use an increased secondary sealant in the case of smaller dimensions and/or greater thickness of glass. The required edge seal width must be discussed with OKALUX beforehand. In the case of oversized units, joints could occur at the edge and joint profiles. OKALUX will specify the location of the joints.

For reasons of tolerance and varying temperature-related expansion, the insert may have an expansion gap of up to 2.0 mm on each side and 4 mm at the top. This can lead to a visible gap between the insert and the spacer bar. For this reason, the depths of the glazing rebate must amount to at least the required overall sealant (spacer bar + secondary seal) plus 5 mm. Otherwise the edge area has to be covered by a screen print.

In the case of a polysulphide as secondary seal, it may be necessary to use a exceed cover in order to provide sufficient UV control. In the case of a frameless glazing system, it is generally recommended that the edge areas are covered using a screen print. Depending on loading, the required sealant width can be considerably greater than that of "conventional" insulating glazing.

Depending on the insulating glass formats, joint profiles may be required to support the louvres. If we do not receive any specifications, we will provide a symmetrical division of the louvres for each individual insulating glass unit. Please consult us in good time if a different division is required.

The side and end profiles have a matt anodised surface in natural finish EV1. The profiles can also be supplied in other anodised colours.

Planning instructions

OKASOLAR does not totally block out the sun which can at times shine through the louvres and be partially redirected to the inside. A part of the retro-reflected light is reflected once more by the outer glass surfaces to the inside. These circumstances may make it advisable to put in additional internal glare protection to satisfy especially demanding applications (e.g. computer workstations).

The louvres have a matt coating. As a result, certain lighting conditions and observation directions may make visible some minor differences in the position of individual louvres. However, these differences do not affect the function of the insulation glass.

If the OKASOLAR insulating glazing is being installed at temperatures < 0°C in an unheated building (winter construction site), we must be notified of this in writing beforehand.

Installation instructions

OKASOLAR insulating glass is glazed as per normal insulating glass. During transportation, the insert may slide to the side, creating a greater visible slit between the spacer and the insert or the support profiles could become inclined. We must be notified in writing beforehand of any special loads which may occur during transportation (vibrations/shaking).

For instructions and recommendations for the installation of our insulating glazing, please refer to our information and instructions for customers contained in "Delivery of OKALUX Glass Products" and "General Information on Glazing".

Other printed matter

If you do not have the following printed 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 OKAWOOD tolerances

Cleaning instructions for OKALUX gen.

Cleaning instructions OKACOLOR

Guideline for visual quality