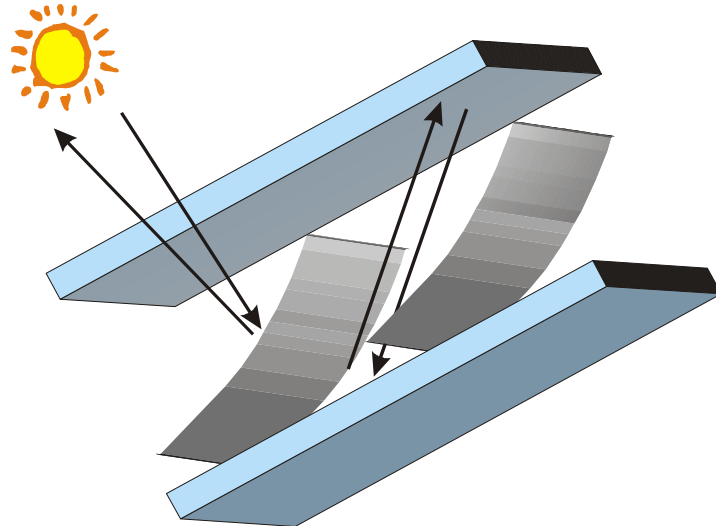


OKASOLAR S

Glazing with Integral Sun Control Louvres

OKASOLAR S insulating glass is a new daylighting system without any moving components. Thanks to its direction-selective mirror profiles, OKASOLAR S offers a convincing compromise between protection and provision requirements.



- Efficient directionally selective sun protection
- Directionally selective light transmission
- Partial through-vision

The function of OKASOLAR depends on the current radiation conditions, partial transparency is always available.

In roof applications, OKASOLAR S functions as follows:

1. Direct solar irradiation from the shadow sector (quarter-sphere)
 - thermal solar protection with total solar energy transmittance values of as low as to 9%, in particular secondary heat transfer without solar radiation transmission
 - protection from glare through direct sunlight
2. Irradiation from the transmission sector, diffuse irradiation (quarter-sphere)
 - partial transmission

The flat louvre cross section allows partial transparency onto a surface area of up to a maximum of 80%, depending on the viewing direction.

Technical Data

	TSET min.	SC min.	TSET max.	SC max.	T _v min.	T _v max.	U-value	U-value	Cavity
	%	%	%	%	%	%	W/(m ² K)	Btu/hr/ft ² /°F	mm
OKASOLAR S	8	9	28	33	1	47	1.1-1.3-1.9	0.19-0.23-0.33	24

TSET: Total solar energy transmittance or solar heat gain coefficient (dependent on angle of incidence, based on calorimetric measurements)

T_v: Light transmission (dependent on angle of incidence)

U-values refer to European Standard EN 673. Please contact our sales department for values according to ASHRAE conditions.

TSET (total solar energy transmittance or solar heat gain coefficient) and transmission values refer to European Standard EN 410. Values according to ISO 9050 may differ by 1-2%.

Legend and related values:

	unit	standard	technical term
U	W/(m ² K)	DIN EN 673 DIN EN 674	Thermal transmittance, ($\Delta T=10^{\circ}\text{C}$)
TSET	%	DIN EN 410	Total solar energy transmittance or solar heat gain coefficient
T_v	%	DIN EN 410	Light transmission (direct/hemispheric)
R_w	dB	DIN EN 20140	Sound reduction coefficient
F_c	%	DIN 4108	Reduction factor of a solar control system, $F_c = \text{TSET} / \text{TSET}_{\text{reference}}$
SC	%	GANA Manual	Shading coefficient, $SC = \text{TSET} / 0.86$

The above data are approximate data. They are based on measurements of recognized test institutes and calculations derived from these measurements.

At the moment, not all suppliers have adapted their key data to the currently applicable regulations. When making comparisons, please pay attention to the relevant manufacturer's notes. On the basis of the old standards, total solar energy transmittances as well as shading coefficient values are each 1-3% lower.

Lower U-values can only be achieved in combination with thermal control gases (Kr, Ar). If thermal control gases are used, a gastight perimeter seal is required. It must be protected against solar radiation by means of covering profiles or a black edge screen print and is normally not compatible with jointing silicone.

Build-up

- Panes made of toughened glass, coating on surface 2
- Cavity 24 mm
- Louvre width 28.2 mm, louvre interval 24.7 mm

Dimensions and installation

OKASOLAR Insulating Glass is installed like normal insulating glass. The temperature-dependent movement of the OKASOLAR louvre panel requires a small space between the panel and the spacers. To avoid direct light penetrating through the gap between the louvre panel and the adjoining spacer bar of the insulating glass, the unit edge cover has to be a minimum of 15 mm. With widths and heights exceeding 2 m, the coverage has to be increased to at least 20 mm.

glass dimension parallel to louvre direction	max. 3000 mm
glass dimension perpendicular to louvre direction	max. 4500 mm
louvre length	max. 1500 mm
unsupported span of louvres	max. 500 mm
visible width edge profile	15.0 mm
visible width support profile	7.2 mm
visible width of punched out area of louvre at support profile	7.2+1 mm
visible width of joint profile	29.3 mm

For louvre lengths between 1000 and 1500 mm, 3 supporting profiles are always required.

In order to cover the louvre panel for visual reasons, the surrounding U-profile is sometimes used along all four edges. Maximum pane surface is 7 m². Shapes are possible.

Any pressure exerted on areas other than the area close to the edge of the glass pane can cause long-term damage to the louvre panel. Even with appropriate dimensions, it is only allowed to walk on the panes after prior agreement with the manufacturer. If planks are placed on the panes loads must be borne via the edge of the pane.

Planning instructions

On the basis of the planning data, in particular

- geographical latitude of the construction project
- façade orientation
- roof inclination, if required
- room utilisation

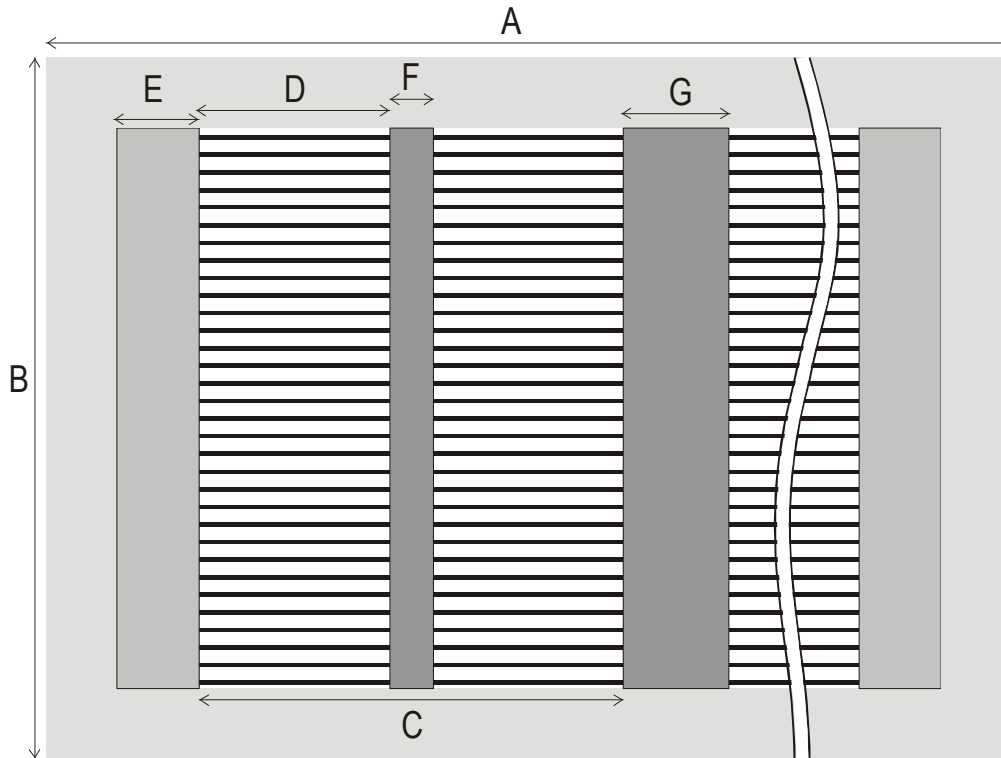
we can provide an *OKASOLAR* draft design. This will explain the functional operation in detail, and furthermore we recommend the *OKASOLAR* type that best meets the property-specific requirements.

On account of the occasional penetration of the sun through the louvres and of the light deflection by *OKASOLAR*, additional internal glare protection may be required for particularly critical applications (e.g. computer workstations).

Types I and III indicate that the louvre axes are oriented parallel to the lower edge of the glass pane, which in general is horizontal. With Types II and IV, the louvres run at right angles to the lower edge of the glass pane.

The louvres have a highly reflective coating, which contributes to an effective redirection of solar radiation. For this reason, certain lighting conditions and viewing angles may already make slight deviations in the positions of some of the louvres visible. These deviations are unavoidable and do not affect the function of the insulating glass.

OKASOLAR dimensions

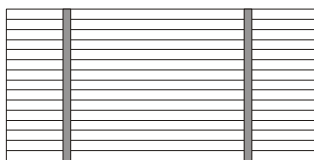


- A: glass dimension towards louvre axis
- B: glass dimension perpendicular to louvre axis
- C: louvre length
- D: unsupported span of louvres

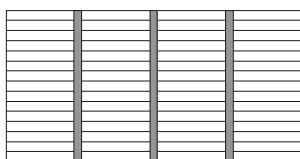
- E: visible width edge profile
- F: visible width tooth profile
- G: visible width of joint profile



Example 1:
symmetric division with 1 joint profile and 2 tooth profiles



Example 2:
asymmetric division with 2 tooth profiles



Example 3:
symmetric division with 3 tooth profiles