

OKASOLAR F Insulating glass with fixed optically regulated sun protection for vertical façades

Outer pane

Thermally toughened glass according to static and/or construction requirements, with a minimum of mm, with heat and/or combined sun and heat protection layer.

Cavity I

Total of 16 mm with hermetic insulating glass edge seal according to German Standard DIN EN 1279. The steel louvres are parabolically roll formed and have a highly reflective, UV resistant Feran coating. The louvres have a component depth of max. 10 mm, a height of approx. 4.2 mm and must be installed at a distance of approx. 5.2 mm from each other. The horizontal through-vision must be at least 57%. The coefficient of expansion of the louvre material may not exceed a maximum of $13 \cdot 10^{-6}/K$, the thermal conductivity a maximum of $50 W/(m^2K)$. The insert must be free of volatile materials such as oil, grease, etc. This must be tested and verified by a Fogging Test according to German Standard DIN EN 1279-4. To achieve the three dimensional design the louvres must be executed in a span of 1 m without intermediate supporting profiles. The U profiles for the vertical mounting of the louvres as well as the supporting profiles must be carried out in black.

The louvre types U and O have different functions.

The U type is completely retro-reflective and has excellent sun protecting capacity. Direct sun irradiation on the louvre is reflected back to the outside. Multiple reflections on the louvres are unacceptable. The secondary input is reduced. The design of the louvres shows no convex surfaces on the top as these would beam undeflected light to the interior with the result that glare could occur on the highly reflective louvres.

In addition to the retro-reflective function, the O type also has a light-deflecting function to the interior. Incident light is redirected to the ceiling at a flat angle. In this way, daylight can be used effectively.

The mechanism of the shading must be mathematically and graphically verified in a solar diagram taking the local solar altitudes into account. Corresponding documentation to be presented before approval.

A uniform overall appearance must be ensured when both types are combined in one insulating glass. The varying louvre geometry between the retro-reflective louvre and the light deflecting louvre must not be discernible from either the interior or the exterior.

Middle pane

Thermally toughened glass according to static and/or constructive requirements, with a minimum of mm.

Cavity II

8 – 12 mm with hermetic insulating glass edge seal according to German Standard DIN EN 1279 and gas filling depending on the Ug-value requirement.

Inner pane

Laminated safety glass of TVG (annealed glass). Glass thickness according to static and/or constructive requirements, with at leastmm, with heat protection layer.

Technical data as required:

The structural values are to be verified by appropriate calculations and/or measurements.

Ug-valueW/m²K

Angle-dependent total solar energy transmittance

Angle of incidence γ	-60°	-30°	0°	15°	30°	60°
Typ O total solar energy transm. (appr.)						
Typ U total solar energy transm. (appr.)						

Light- and solar transmittance

Angle of incidence γ	-60°	-30°	-15°	0°	15°	30°	45°	60°
Typ O light transmittance (appr.)								
Typ O solar transmittance (appr.)								
Typ U light transmittance (appr.)								
Typ U solar transmittance (appr.)								

Type O deflected fraction

Angle of incidence γ	0	15	30	45	60
deflected fraction*					

*upwards deflected fraction, related to total transmitted light

