



## ISOLETTE<sup>®</sup> - the sunblind double glazing

### Multi-functional glass for modern architecture

ISOLETTE<sup>®</sup> is a double glazing unit with a built-in sunblind. The sunblind is built into the air-tight space between the glass panes and can be power- or manually-operated. It can either be just turned and rotated or raised and lowered as required.

The ISOLETTE<sup>®</sup> multi-functional glass is an-all in-one shade provider, glare shield and daylight controller. It helps provide a balanced climate and adequate daylight in both offices and residential buildings. When built into an electronic building management system, ISOLETTE<sup>®</sup> automatically provides optimum, climate conditions that can be adapted to the individual.

#### ISOLETTE<sup>®</sup>'s design

ISOLETTE<sup>®</sup> sunblind double-glazing is constructed from glass that is at least 5 mm thick. ISOLETTE<sup>®</sup>'s standard design consists of a 5mm external float / 27 or 32 mm between panes / 6 mm internal thermal protective glass.

ISOLETTE<sup>®</sup> can be used in almost all glass combinations such as with laminated or single-pane safety glass, or ornament, alarm, soundproof, fire-resistant, solar and heat control glass.

Furthermore, ISOLETTE<sup>®</sup> can be built into most of the current profile systems, as well as into all materials (aluminum, synthetic materials, wood etc.)

#### Functional advantages of ISOLETTE<sup>®</sup>

ISOLETTE<sup>®</sup> combines multiple functions into an all-in-one product and has a number of advantages over traditional or standard solutions.

- When closed, ISOLETTE<sup>®</sup> is a shading system with excellent features, which improve the heat insulation properties of the double glazing.
- Slat placement is completely freely determined. Daylight can be directed through the room or onto the ceiling. This prevents differences in lighting inside the building and creates a pleasant, diffuse light.
- As it is built into the space between the panes, the sunblind is permanently protected from damage and is completely maintenance-free. This is particularly important in rooms that require high standards of hygiene.
- Many construction measures such as awnings can be avoided (see page 1.6).



High quality components

One of the main criteria for a maintenance-free system is the use of high-quality components, which have been tailor-made to the specific physical conditions between glass panes, such as high temperatures.

- The slats have long-term dimensional stability and are available in nine different colours as standard. 16 mm wide and 0.21 mm thick, they have a filigree design.
- The hexagonal motor shaft is made of brass. The mechanics for holding the tension band consists of specially designed plastic components that ensure continued safe operation.
- The top system-box is made of extruded and powder-coated aluminium. The height and width of the lower spacers are set through a U-guide, reducing the incidence of light.
- The tension band is coated with purpose-built fabrics with edge and UV protection. The conductor strips are made of Terylene (100% polyester) with UV protection. They are heat-set to provide high-dimensional stability. This special surface treatment ensures that stretching is very slight.

Using and managing *ISOLETTE*®

To operate of the motorised versions of *ISOLETTE*®, a type-tested transformer with a primary voltage of 230 volts AC and a secondary voltage of 24 volts DC is used.

A specially developed *ISOLETTE*® relay enables single, group, and central controls. Optional extras include automatic, time-controlled raising and lowering with sun and dusk sensors, operation through a thermostat as well as remote-controlling.

For trouble-free, comfortable operation of the *ISOLETTE*® in different installations, there are cable crossings designed for use in rotary and tilt and turn windows as well as energy chains for installation in sliding elements.

The standard drive is a 24-volt direct current motor encoder with integrated electronics. The end positions of the blinds can be externally adjusted. The engine and transmission unit can be easily replaced without separating the air-tight insulated glass unit.

Furthermore, a special CAN bus motor is provided, so that *ISOLETTE*® can be operated as part of a bus-controlled building system. This motor is equipped with an incremental encoder, which ensures uniform control and an approximately even slat positioning for multiple hangings.



Product development and quality management

*ISOLETTE*® systems are subjected to intensive on-going quality-testing. All components used must be designed to last and operate under the specific physical conditions between glass panes, sometimes at very high temperatures.

As part of the general *ISOLETTE*® testing at the Institute for Window Technology, Rosenheim and ZEMLABOR, Magdeburg (Germany), Ug-value, g-value and sound-insulation tests have been conducted (test reports and certificates are available on request).

In an in-house test laboratory in Erbdorf (Germany) the individual systems are tested in high-impact 100,000 double stroke tests. During the tests, additional temperature fluctuations and different climatic conditions can be simulated in order to obtain practical insights into the behaviour of the system and its components.

Installation kits are made in Germany. This not only means that the distribution system is closer but also allows for more intensive research and development work. New materials and new technical solutions can be developed and tested in closer collaboration with partners, allowing continuous development of the system.

Modern building management

The *ISOLETTE*® with CAN technology has its own intelligence and is able to communicate with other building measurement or control systems through bus lines within what is known as a CAN bus system.

The system can be connected to a PC through an interface. The *ISOLETTE*® CAN software enables temperature and brightness data to be matched and processed inside and outside the building. This forms a basis to control other individual elements.

Whether and how the *ISOLETTE*® will react to certain situations is determined by the *ISOLETTE*® CAN software's user-friendly input mask. All *ISOLETTE*® elements can be brought together in one group, or individual sub-groups can be created to react differently to certain situations.

This user-friendly input mask allows the user to easily make changes to the behaviour patterns or to group compositions. This is especially important for optimising a building's energy balance.



*ISOLETTE*® and the challenges of climate change

Global climate change is one of the biggest challenges of our time. *ISOLETTE*®'s multi-function glass helps to save energy for heating and cooling buildings.

In summer, interior rooms are effectively provided with shade and daylight simultaneously. This can considerably reduce the use of artificial lighting.

In winter, the maximum desired amount of solar radiation can be let into a room without glare. The *ISOLETTE*® is therefore flexible in being able to react to climatic conditions. At night, the closed slats promote the heat insulation provided by the insulated glass.

Together with modern building technology, energy management can be improved even further. *ISOLETTE*® can react automatically to certain climatic situations and prevent, for example, the overheating of interior rooms, even during holidays or at the weekend.

The intelligence of the motorized *ISOLETTE*® system manages the distributed system technology, which takes into account both the needs of individual-user habits and those of the environment. The separate control of the indoor climate provided in each usage unit allows significant energy savings while also increasing comfort.

The *ISOLETTE*®, when integrated in modern building technology, provides a lasting contribution towards reducing CO2 emissions.

The diversity of the *ISOLETTE*® system

The *ISOLETTE*® is available in different systems, which can be set up according to usage profiles and user requirements. The systems are as follows:

- The Standard system is power-operated. The slats can be turned and rotated (I-06 Mod. 4) or also raised and lowered (I-06 Mod. 1).
- Manually operated systems can be turned and rotated (with a knob) or also raised and lowered (with a bead chain or crank).
- *DACH-ISOLETTE*® [*ROOF-ISOLETTE*®] is available for the roof and sloped glazing. Driven by two 24 VDC motors, the slats can be turned and rotated. Vertical and horizontal supporting cables ensure reliable operation of the system in almost any type of installation.
- The *ISOLETTE*® can also be designed as triple glazing with excellent features. In this setup, the sunblind is placed in the outer space between the panes. This system enables Ug-values of up to 0.6 W/m<sup>2</sup>K, which are optimal for modern buildings with large glass facades.
- All vertical systems can be combined with a separate sun light rotation area. The individually definable III MAX light rotation area enables the use of both shading and daylight control simultaneously. Above, the slats are, so well integrated into the glass that they deflect the light at a predetermined angle and redirect it to the interior ceiling.

Slat colours and details

Colour options	Colour number	Colour designation	Reflection	Absorption
	16.035	Duo-slats Silver/ stone grey	68 %	32 %
	16.016	Ivory	68 %	32 %
	16.009	Beige	63 %	37 %
	16.006	Light grey	58 %	42 %
	16.017	Plain aluminium	68 %	32 %
	16.018	Silver	58 %	42 %
	16.002	Light blue	42 %	58 %
	16.008	Matte white	58 %	42 %
	16.004	Red	45 %	55 %

Similar to picture. Not RAL colours. Sample according to *ISOLETTE*® colour card.



Checklist I: the *ISOLETTE*® in comparison with other shading systems

External blind / awning

- gets dirty fast, high cleaning requirements
- exposed to weather that can damage it
- corroded by the air
- storm protection necessary
- intrusive wind noise
- high maintenance requirements
- darkens the room, artificial light needed

*ISOLETTE*®

- always clean, no need for cleaning
- protected from the weather
- air-tight installation
- provides shade even on windy days
- protected from the wind, no intrusive noise
- maintenance-free
- work in the daylight with no glare

Shutters

- reduce window height and exposure to light
- get dirty quickly, high cleaning effort
- shutters amplify the cold and sound
- intrusive wind noise
- darken the room, artificial light needed

*ISOLETTE*®

- floor-to-ceiling glazing possible, more light
- always clean, no need for cleaning
- very good heat and sound insulation
- protected from the wind, no intrusive noise
- work in the daylight with no glare

Interior sun protection

- get dirty and dusty quickly
- damage possible
- little protection against accumulation of heat at the window.

*ISOLETTE*®

- dust free, hygienic
- protected from external factors
- high sun-protection through reflection