

## Tender specification text

Dynamic sun protection  
ISOLAR®  
SOLARLUX variodirekt



### **Lamella:**

#### Lamellae colour:

Outside: Aluminium, brushed

Inside: Aluminium, brushed

#### Profiling:

convex

Width of lamellae 15mm

### **General:**

The head profile must consist of stable extruded aluminium with a height of 42mm. All visible aluminium surfaces are to be anodised.

A profile is to be depicted on the vertical spacers to protect the low-e coating on the glass and to reduce the lateral light gap.

### **Drive unit:**

Aluminium head profile with complete maintenance-free drive unit, high-quality DC motor (24 V, 6 W) and gearbox from maxon Switzerland AG, winding of the pull cord on a continuous aluminium travelling wave, upper and lower load-free end position shutdown by means of 2 mechanical limit switches, water vapour and gas diffusion-tight current feedthrough through the edge seal of the insulating glass, power transmission via plug contact on the insulating glass

No control electronics are permitted to control the motor in the area of the blind or within the insulating glass for blinds → the control must be carried out externally via system-related motor controllers and motor power supplies, which are installed in small distributors or in control cabinets.

### **Hanging function:**

Lifting, lowering, turning and positioning using a ladder cord and a pull cord with an integrated Spectra core

### **Control**

Individually and/or in groups with priority function only with system-related control components (motor power supply units and motor controller) that are installed in small distributors or control cabinets - possibility of connection to a higher-level BMS

### **Usability:**

The usability according to guideline VE 07/2 has been proven

### **Warranty requirement:**

Use of system-related control components and power supplies.

Compliance with the special glazing and test regulations.

Deflection limitation (insulating glass edge seal) no more than  $l/300$ , max. 8mm.

Inspection of every single pane (100%) before installation according to the inspection protocol of the manufacturer and the return of the protocols to the contractor.

### **Heat-treated toughened safety glass:**

Heat-treated toughened safety glass (also called ESG-H here) requires a reduced probability of failure due to nickel sulphide inclusions and must accordingly achieve the reliability class according to EN 1990/NA:2010-12,

Table NA.B.2, RC 2. This is achieved by means of external monitoring of the production of heat-treated toughened safety glass according to EN 14179.

**Standard glass structure as triple insulating glass** (from the outside to the inside / without taking into account the structural dimensioning and building law requirements):

Single glass thickness / type: (or nominal thickness) heat-treated toughened safety glass 8 mm

Cavity: 32 mm cavity with blind

Coating Pos.: low-E coating #3

Single glass thickness / type: (or nominal thickness) heat-treated toughened safety glass 6 mm

Cavity: 14 mm cavity with 90% argon gas filling

Coating Pos.: low-E coating #5

Single glass thickness / type: (or nominal thickness) heat-treated toughened safety glass 6 mm

Total glass thickness: approx. 66 mm

(or total thickness from nominal thickness plus the cavity)

**Technical values according to EN 410/EN 673:**

Heat transfer coefficient (U<sub>g</sub>): 0.6 W/m<sup>2</sup>K acc. EN 673

Light transmission: (only glass) 72 % acc. EN 410

Total energy transmittance\*: 8 – 53% acc. EN 410

Deviating technical values resulting from other glass thicknesses or types of glass must be communicated to the contractor.

\*(Glass + lamella, depending on the angle of the elevation of the sun and lamella position, as well as the hanging position)

### **Control accessories**

#### Motor cable:

- Motor cable - 5 metres with system plug in the rebate area
- Motor cable - 10 metres with system plug in the rebate area
- Motor cable - 15 metres with system plug in the rebate area

#### Magnetic window tappet contact

- 2-pin for power transmission in the turn-tilt window

### **Operation:**

The delivery of the assembled small distributors with system-related control components and the central control as well as its programming and commissioning are part of the facade trade for technical and functional reasons. The small distributors with system-related control components are placed in the removable false ceiling area per room or in the corridor area. Two variants are available for the central control (see § Control).

Control lines should be protected from electromagnetic radiation and should not be laid parallel to power lines in order to avoid malfunctions. In individual cases, the electrical planner will check to what extent shielded cables should be used.

### **Differentiation of services between the trades:**

#### Trade – Facade:

- Delivery, assembly and testing of the insulation glass for blinds
- Delivery, labelling and assembly of the motor cables up to the top edge of the ceiling/facade
- Delivery of pre-assembled AP small distributors for blind control
- Delivery of the central control incl. assembled small distributor
- Delivery of the transducer (only if required)
- Programming and commissioning of the motor controller and the central control components

#### Trade – Electrical/Building services:

- Delivery, laying and connection of all cables (push button cable, central control cable / except motor cable – here only laying and connection)
- 230V ~ power supply and connection
- Installation of the small distributors (blind control + sun protection control unit) supplied by the facade trade as well as installation of the measuring transducer (only if required)

#### **Motor controller:**

- 4-channel motor controller for the individual control of 4 blinds
- Comfort control for the step-by-step positioning of the lamella angles, as well as for raising and lowering the lamella hanging with self-holding and protective functions (short-circuit detection / shutdown of the drive in the event of overload)
- Single push button input
- Central or group button input with priority function
- For mounting on the top rail

#### **Motor power supply:**

4.2 A / 24 V DC– for max. 6 blinds

#### **Functional description of the blind control:**

- Raising, lowering and turning the blinds using a 24V Maxon standard motor with gearbox and system-related motor controller and motor power supply units
- Lamellae angle tolerances with simultaneous control of +/- 4°
- A synchronisation of the blind hangings when moving up and down cannot be guaranteed – however, defined lower and load-free upper blind hanging positions (the end positions are set in the blind product)

#### **Manual mode:**

- Room-by-room manual operation of the blinds via on-site blind buttons (in corner rooms on each facade side)
- UP button:
  - Press button (approx. 1 second): Gradual lamella angle adjustment inwards, after 3 seconds the blinds are moved to the upper end position
- the lamella angle adjustment or the movement of the blinds can be interrupted by briefly pressing the button
- DOWN button:
  - Press button (approx. 1 second): Gradual adjustment of the lamella angle outwards, after 3 seconds the blinds are moved to the lower end position
  - the lamella angle adjustment or the movement of the blinds can be interrupted by briefly pressing the button
- manual mode overrides the automatic commands - the time can be parameterised

#### **Automatic mode:**

- the functionality of the central controls according to Variant 1 or 2 is described in the position texts "Control" of the central controls
- the automatic function is overridden by manual operation – the time for returning to automatic mode can be parameterised

#### **Control:**

##### Variant 01 – Central control without transducer

- digital timer with Annual and Astro program
- 2 control channels / control zones
- extensive programmable time programs for controlling the motor controller via the central control input
- Function: Up or down movement of the insulating glass for blinds
- (Info: Shutdown of the drive in case of overload by the motor controller)

### Variant 02 - Central control with transducer (possible position)

- Facade control depending on brightness measurements (north/east/south/west)
- the automatic function is overridden by manual mode – the time for returning to automatic mode can be parameterised
- 32 control channels are available in the central control (e.g. facade sections)
- Functions:
  - The following limit values can be parameterised per control channel with the desired blind position and a switching hysteresis:
    - Limit value “Sun” = Hanging down and lamella angle of 45° (sun protection)
    - Limit value “Bright” = Hanging down and horizontal lamella angle (view)
    - Limit value “Clouds” = Hanging up
  - Time switch values with the desired blind and automatic functions can be parameterised for each control channel

### **Control accessories**

#### Assembled small distributors (IP 30) with system-related control components

- For the control of **4** insulating glass for blinds, performance limitation, control components and functionality according to the previous description
- For the control of **8** insulating glass for blinds, performance limitation, control components and functionality according to the previous description
- For the control of **12** insulating glass for blinds, performance limitation, control components and functionality according to the previous description
- For the control of **16** insulating glass for blinds, performance limitation, control components and functionality according to the previous description