

04/2024

Window Systems ► Double-glazed facade venetian blinds

Double-glazed facade venetian blinds

Technical data

Der SonnenLichtManager





Technical data

Valid from 01.04.2024

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Our products are individual or made-to-measure items and therefore cannot be exchanged or returned.

Safety instructions

For detailed information please see the Tech-Data or the installation and operating instructions.

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Ordering from WAREMA

In this document you will find for each product a link to the relevant **Order form**. Open the link or copy it into your browser. Alternatively, you can order directly via **myWAREMA** by opening the link or entering the article number after logging in. Please make sure to register as a customer first.

Drawings

Download your desired drawings: in the digital version of this document, start the download by clicking on the PDF or DWG symbol.

WAREMA tools

Sun Shading Planner

Use our free planning programme to plan your sun protection systems

<https://sonnenschutzplaner.de>

Collection Assistant

Experience the range of colours and fabrics of the WAREMA collections

<https://collection.warema.com/?language=de>

Fastener Assistant

Calculate the individual suitable and permissible fixing materials

<https://www.warema.com/fastener-assistant>

Console Planner

Calculate the exact position of the console, tensile force and wind resistance class

<https://konsolenplaner.warema.de/v2/>

Dimensions Assistant

Conveniently and easily determine the slat stack height

<https://my.warema.com/v2/dimensionAssistant?page=0>

More TechData

External venetian blinds

<https://sls.warema.com/514644ENINT>

Roller shutters

<https://sls.warema.com/514648ENINT>

Window awnings

<https://sls.warema.com/514654ENINT>

Insect and pollen protection

<https://sls.warema.com/513039ENINT>

Railing systems VisionNeo for windows

<https://sls.warema.com/959906ENINT>

Patio awnings

<https://sls.warema.com/514652ENINT>

Roof systems

<https://sls.warema.com/755716ENINT>

Sun sails Sonea

<https://sls.warema.com/767443ENINT>

Black-out blinds

<https://sls.warema.com/513502ENINT>

Control systems

<https://sls.warema.com/514746ENINT>

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Interesting facts about planning Colours and finishes

WAREMA Colour World for powder-coated aluminium components

Choose the perfect shade from a wide range of attractive powder colours for your powder-coated aluminium profiles such as guide rails, guide profiles, cover panels, boxes and frames.

The current WAREMA Colour World for powder-coated aluminium components and all available colour charts can be found on our homepage.

Colour categories

The variety and composition of the WAREMA Colour World are constantly updated to reflect the latest market trends and customer demands. The classification into categories helps you to find the right colour for your individual sun shading system.

Highlight

This category contains hand-picked standard colours that reflect the latest market demands and colour trends. With the collections and colour charts for external venetian blind slats, roller shutter curtains and fabrics, the colour shades unite to form the perfect unit.

Variation

Over 50 additional RAL basic colours complement the existing Highlight category.

Individual

For even more individuality and colour diversity, over 100 more colours complete the WAREMA Colour World.

Special version

Not found what you're looking for in the WAREMA Colour World? On request, colours not included in the WAREMA Colour World are also available.



Finishes

The WAREMA Colour World doesn't just offer a wide range of options in terms of colour variety, it also offers a vast array of surface structures and gloss levels. Thanks to the individual characteristics of the WAREMA Colour World, you can perfectly adapt your powder-coated aluminium components to the structural conditions at hand.

The outstanding quality of the coating guarantees long-term satisfaction with our products. This has been independently tested by the German Quality Association for the Coating of Building Materials (GSB). The surface coating with a chrome-free pretreatment complies with the GSB AL 631 directive.

The aluminium parts are delivered in "GSB Sea-Proof" as standard.



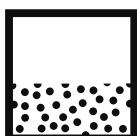
Satin finish

Satin finish is a slightly glossy surface with a smooth finish and optimal light and weather resistance.



Matt

A matt surface is distinguished by its smooth matt finish and optimal light and weather resistance.



Fine texture

The fine texture has impressive effects, as characterised by the optimal light and weather resistance of the surface.

Highly weather-resistant powder coating



Highly weather-resistant

The highly weather-resistant finish is particularly suited to all severe weather conditions. It is colour-fast, has a long-lasting uniform finish, does not chalk and is extremely weather-proof. This kind of coating is only available in combination with matt surface structures.

Not able to find the right surface quality? On request, surface qualities not included in the WAREMA standard range are also available.

Stay up to date!

The current WAREMA Colour World for powder-coated aluminium components can be found on our homepage or myWAREMA.



















Special version

Alternatively, WAREMA offers anodised finishes for numerous extruded aluminium parts.

- natural colours anodised
 - C0
- anodised in colour
 - C31 Light bronze
 - C32 Pale bronze
 - C33 Medium bronze
 - C34 Dark bronze
 - C35 Black

The anodised shades are shown in the anodisation colour chart.

Slat colours double-glazed facade venetian blinds

Design number		Price range
71000		1
71001		1
71002		1
71003		1
71004		1
71005		1
71006		1
71007		1
71008		1
71010		1
71100		1
72000		2
72004		2
72047		2
72100		2
72102		2
72103		2
72105		2



Interesting facts about planning

General information

Manufacturing tolerances for double-glazed facade venetian blinds

Perfection lies in the detail - no wonder, then, that WAREMA sees even the minor details as paramount: each product is manufactured with millimetre precision according to the customer's requirements. Please note that when manufacturing to this degree of precision, production-related deviations can occur:

Manufacturing tolerances T	Order width in mm	T in mm	Order height in mm	T in mm
Double-glazed facade venetian blinds	≤ 2000	± 1.5	≤ 2000	± 5
	≤ 4000	± 2	> 2000	± 8

Double-glazed facade venetian blinds drawing definition

The technical drawings and figures in the technical data show the interior view. The order data must be in the interior view.

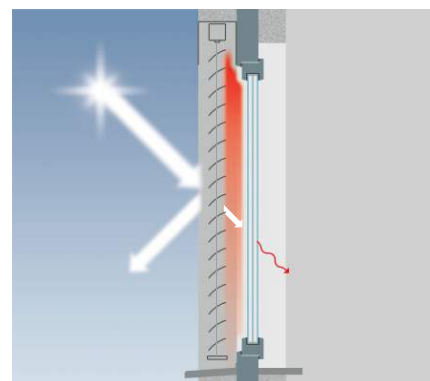
Summer thermal protection – comfortable temperatures with WAREMA sun shading products

Consideration of summer thermal protection is essential in modern architecture. A well insulated outer facade effectively protects against heat loss in winter, but prevents the heat coming in through the glazing in summer. Therefore, sunlight into the building must be regulated to prevent the rooms from heating up excessively. This often prevents the need for high-energy cooling of the rooms.

Overheating can be most effectively prevented by externally mounted sun shading systems, such as external venetian blinds, awnings or roller shutters. The lower the amount of radiation and heat through the external sun shading systems and glazing, the cooler the rooms remain.

With internal sun shading systems, it is important that the radiation that falls onto the sun shading system through the glazing is reflected back to the outside in the most efficient manner possible. The amount of radiation energy absorbed inside the building will remain there (greenhouse effect).

Likewise, an effective intermediate sun shading system, e.g. in a composite or casement window, must not absorb too much energy, as if so, the space between will get too hot. In addition to excessive heat input, this can cause material problems. High transmittance also leads to a high incidence of energy. The optimum product must be found for the window/sun shading system combination concerned. We are happy to advise you.



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Double-glazed facade
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Calculating the g_{tot} and F_c values – combination of sun shading system and glazing

The calculation of the value for thermal protection in the summer includes the total solar energy transmittance g_{tot} for the combination of sun shading system and glazing, or the shading factor F_c .

The F_c value is equal to the ratio of the total solar energy transmittance of the sun shading system and glazing combination to the g value of the glazing ($F_c = g_{tot}/g$).

The glazing is thus also always included in the calculation of the F_c value. This means that it is also not possible to specify a fixed F_c value for a sun shading product.

We therefore offer, for the initial assessments, reference values for g_{tot} and F_c values for our sun shading products in different colours and for various glazing options. These are available on our homepage in the Building physics section.

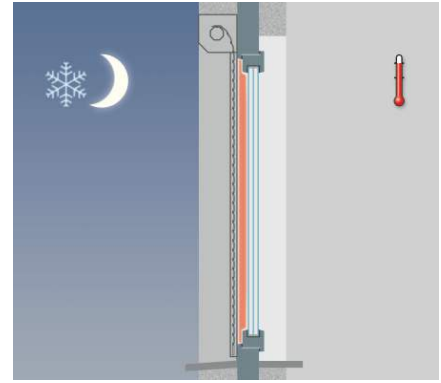
For the calculation of the g_{tot} and F_c values for construction project-specific combinations of sun shading systems and glazing, call the Hotline for building physics and sustainable building.

Building Physics and Sustainable
Building hotline
Tel.: +49 9391 20-3025
E-mail bauphysik@warema.de

Winter heat protection - heat energy savings

When lowered and closed as far as possible, sun shading products offer additional thermal resistance, improving the heat transmission coefficient of the window at the same time. We therefore recommend activating existing sun shading products on winter nights. The pleasant side effect of this is that the window panes do not ice over on the outside and less condensation forms on the inside. Internal products, which significantly improve the heat insulation through the reduced thermal transmission to the window, however, can lead to increased condensation formation on the inside of the window and a more severe icing over of outside window panes.

To allow sunray energy to stream into the room unhindered on winter days, the sun shading system must not be activated if at all possible. As glare control, we recommend an internal sun shading system with a high degree of absorptance. The external sun shading system should be activated only if the room becomes too warm.



Let us advise you!

- We will calculate for you the g_{tot} value, the F_c value and the colour rendering index R_a for the sun shading system and glazing combination.
- We will provide you with radiation physics data for WAREMA products (transmittance, reflectance and absorptance)
- We will provide assistance with data for thermal simulations, sound insulation, thermal bridge calculations, and thermal protection in summer and winter.
- We can advise you on sustainability certifications such as DGNB, BNB or LEED.

Building Physics and Sustainable
Building hotline
Tel.: +49 9391 20-3025
E-Mail: bauphysik@warema.de

Natural light is important - visual comfort

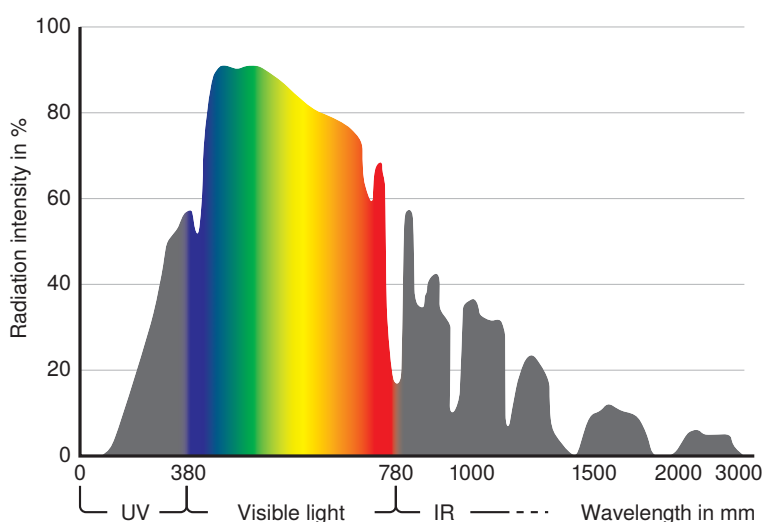
Natural light is very important for the human body. It makes us more efficient and our body clock is also influenced by the changes in light during the course of the day. It is therefore important, even when a sun shading system is activated, to find a compromise between a minimum incidence of energy and a good supply of daylight.

For example, the incidence of energy in a room with an external venetian blind that has dark closed slats is very low, but the room is also very dark. Artificial lighting is required, and this warms up the room again. An external venetian blind with light slats in the horizontal slat position or an awning with light fabric, on the other hand, allow a lot of light, and therefore a high amount of energy, into the room.

Too much light, however, can also cause glare. Therefore, glare protection suitability also plays a key role in the selection of sun shading products. Solutions that interrupt eye contact with extremely light solar discs are especially suitable. These include external venetian blinds and venetian blinds or vertical louvre blinds, roller blinds and awnings with opaque fabrics. Yet glare can sometimes occur even when white external venetian blinds are closed. The amount of light transmission, therefore, must not be too high.

The view out of the window, even with an activated sun shading system, is also important to our feeling of well-being. For most of the day, external venetian blinds or venetian blinds can be set so the view outside can be enjoyed glare-free. Semi-transparent fabrics also allow a view outside. However, because sun shading products with semi-transparent fabrics sometimes allow glare, especially when the sun is low, we recommend, for example for awnings with semi-transparent fabrics, an opaque curtain for internal glare control.

An often underestimated factor for visual comfort is the colour rendering index. This indicates how naturally colours are rendered. 100 means optimal colour rendering. For products with low indices, the colour rendering changes significantly. A white sheet of paper, for example, will appear orange instead of white.



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Double-glazed facade venetian blinds

Double-glazed facade venetian blinds M

Energy-efficient

Promotes energy efficiency: fulfils the high requirements due to the heat and temperature fluctuations that occur in controlled ventilated double-glazed windows and facades – with easy assembly.

Discrete

Privacy when required: the visual privacy offered by partition wall systems is ideal for meeting rooms.

Robust

Designed to handle fluctuating temperatures: durable thanks to corrosion-resistant slats.

Construction limit values

Maximum order width	2500 mm
Maximum order height	3400 mm
Maximum order area	4 m ²

Order here

myWAREMA

 [Art.-Nr. 2024617](#)

WAREMA tools

 [Sun Shading Planner](#)

 see "Navigating the document", Page 5

Components



- | | | | |
|---|-------------------------------|---|----------|
| 1 | Top rail | 3 | End rail |
| 2 | Tilting tape and lifting cord | 4 | Slat |

Top rail

Top rail 26x33 mm

Material	Aluminium, extruded
Surface	Powder-coated
Profile	U-shaped profile
Width	26 mm
Height	33 mm

- Central web to minimise the light gap between top rail and slat
- For motor operation, the built-in components are concealed by a 25 mm slat in the top rail.
- Allocation to slat designs in accordance with WAREMA definition

+ End closure

End closure, plastic

Material	Plastic
Material colour	White, Grey, Black

Allocation to slat designs in accordance with WAREMA definition

Slat

Slats 25 mm

Material	Aluminium
Width	25 mm

- Colour in accordance with WAREMA Collection
- Convex installation
- Slats slightly curved
- Material thickness depending on design

Tape

Tilting tape

Material	Polyester
----------	-----------

Colour matched to slat design

End rail

End rail 21x12 mm

Material	Aluminium, extruded
Surface	Powder-coated
Width	21 mm
Height	12 mm

A C0-anodised cover profile made of aluminium is used.

+ End closure

End closure, plastic

Material	Plastic
Material colour	White, Grey, Black

Allocation to slat designs in accordance with WAREMA definition

Bracket

- Support bracket for top rail, 28x34 mm
- Clamping piece, grey
- Clip-on bracket, with bracket for wall mounting
- Clip-on bracket for mounting on horizontal surfaces/ ceiling installation
- Clip-on bracket for shaft installation

+ see "Bracket", Page 27

Lifting cord

Lifting cord 1.4 mm

Material	Polyester
Diameter	1.4 mm

Colour matched to slat design

Guide variants

Tension cable

- Tension cable, d1 mm, transparent

⊕ see "Venetian blinds cable guidance", Page 26

Drive variants

- Tilt knob
- Motor

Motor

- DCD 22-E

Motor optional:

- SMI motor

⊕ see "Drive variants", Page 31

Colours

- WAREMA Colour World

⊕ see "Colours and finishes", Page 8

Notes

Intended use: The double-glazed facade venetian blind is used in double-glazed facades and windows with controlled ventilation or in partition wall systems. In operating mode S2, permitted on the motor side, the double-glazed facade venetian blind can be used without restrictions for 6 min (short-term operation) at up to 60°C. The permissible operating temperature range is -20°C to +85°C, +85°C being the highest temperature which will not damage the venetian blind drive and lifting system, but which should not be sustained permanently.

Use: Depending on the reflectance of the slats used, damage may be done to the venetian blind or window depending on the orientation of the facade due to the greater heat development between the panes. It is the responsibility of architects or planners to ensure that in every case the facade is suitable for absorbing the thermal conditions acting on the building. There are no restrictions regarding the installation in partition wall systems.

Slats: Thanks to the use of corrosion-resistant material, designs 72100–72102 and 72105 are suitable for the special thermal conditions (e.g. extreme temperature fluctuations, high humidity) and environmental effects in double-glazed facades. When using the double-glazed facade venetian blind M in double-glazed facades, we recommend that you always use slat designs with a reflectance of > 50%. You will find suitable designs in our collection.

Construction limit values

Configuration variants	Minimum order width	Maximum order width	Maximum order height	Maximum order area
Drives				
Tilt knob	350 mm	2500 mm	2500 mm	4 m ²
Motor	420 mm	2500 mm	3400 mm	4 m ²

The maximum and minimum dimensions specified in the construction limit values are height-dependent.

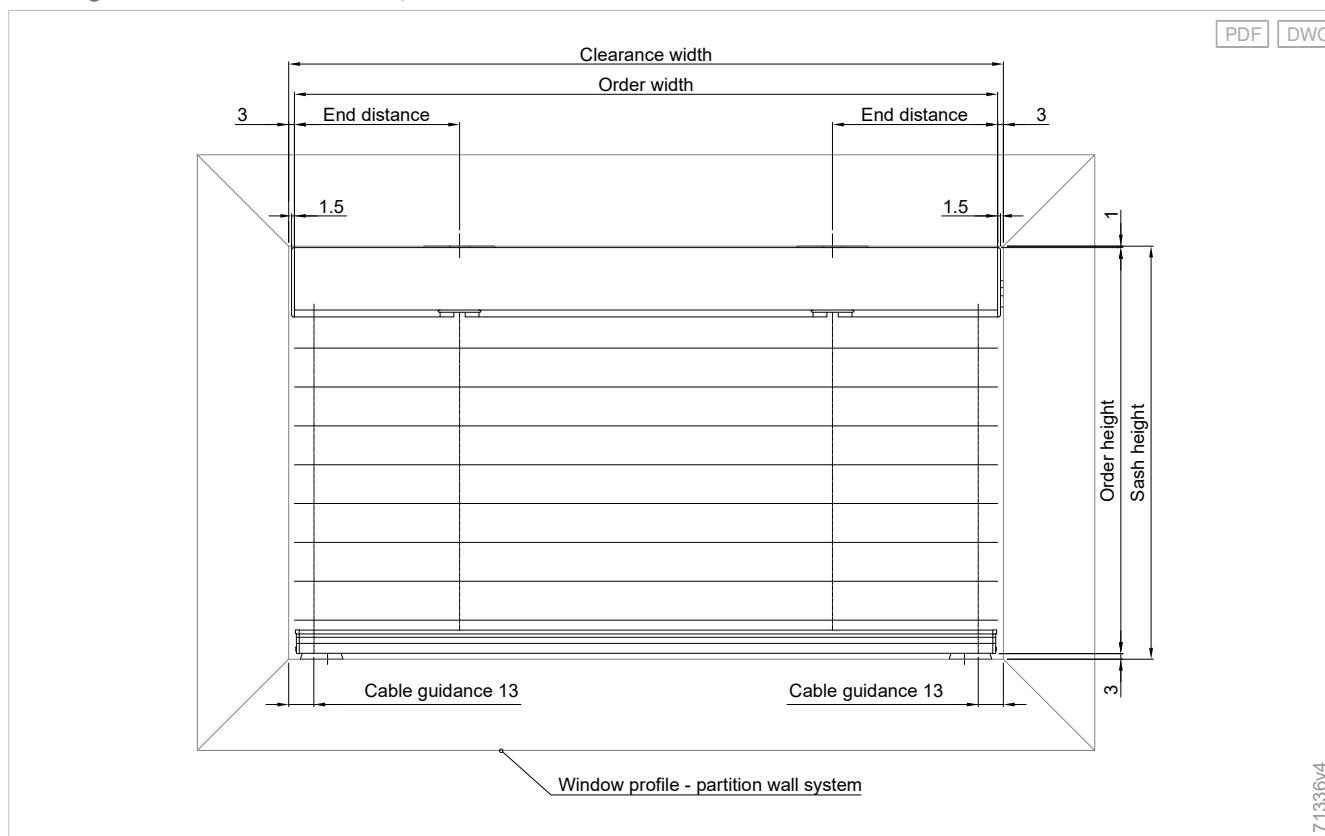
Order width: The minimum width is 500 mm for an order height of 2001 mm or greater (excluding tilt knob operating type).

Order height: For variants with the minimum width, the 2000 mm order height must not be exceeded, as from an order height of 2001 mm, the installation of a longer cord cone is required. The height should not exceed a size ratio of 1 to 4. With small product widths, and if the width/height ratio is exceeded, deviations from the EN 13120 product standard can be expected.

SMI motor: When using the SMI motor, the minimum width is 610 mm or 640 mm from an order height of 2001 mm.

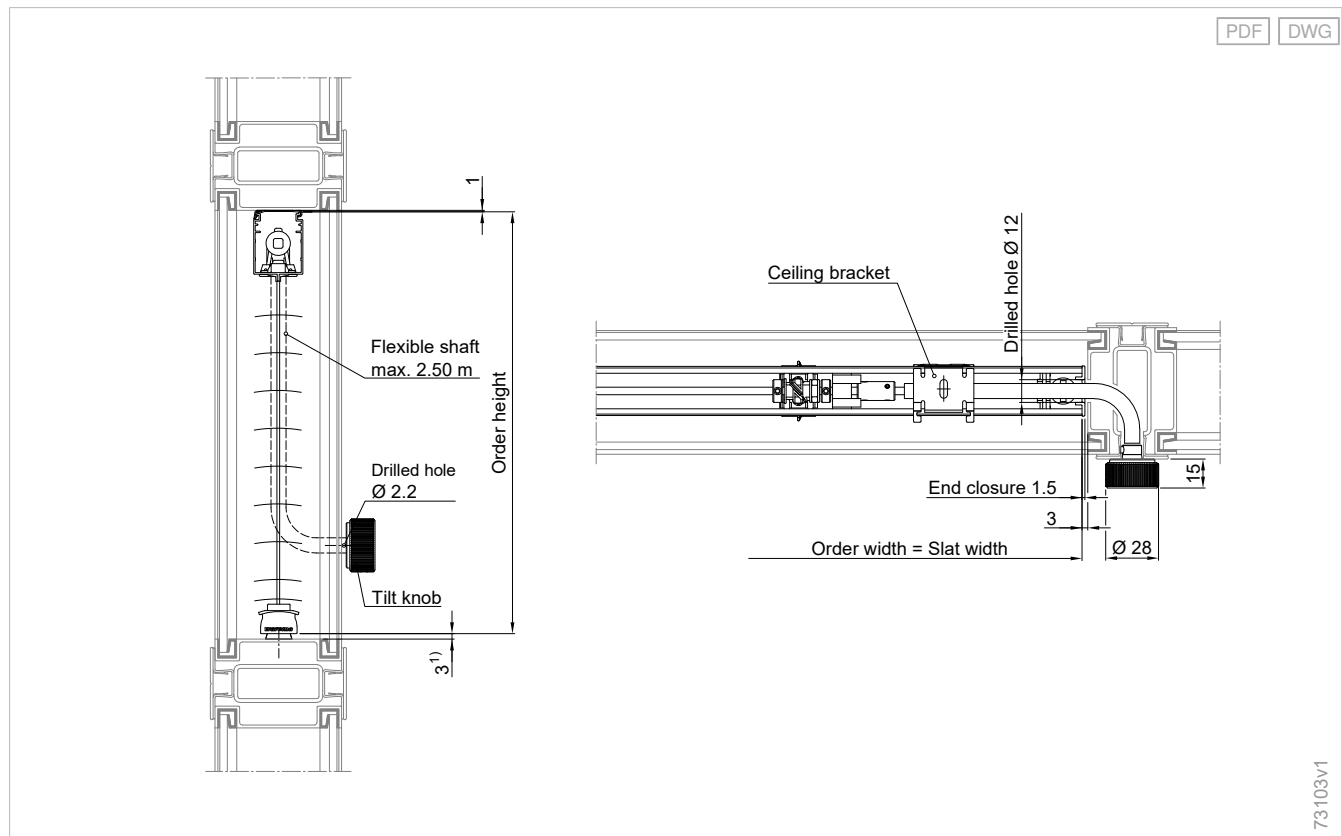
Dimension determination

Double-glazed facade venetian blind M, order data



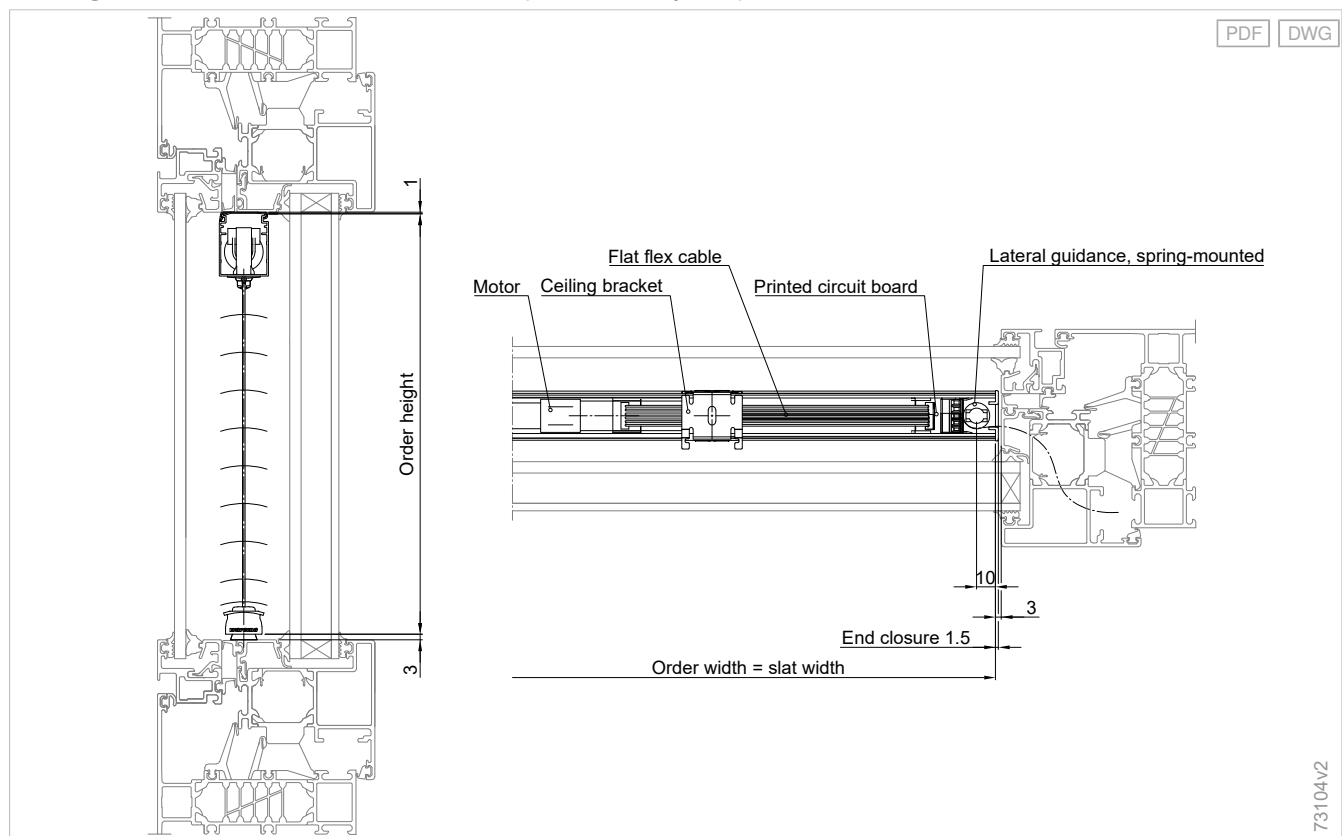
The lower tension cord fixation has to be taken into account for the order height, depending on the installation situation.

Double-glazed facade venetian blind M with tilt knob



The lower tension cord fixation must be taken into account for the order height, depending on the installation situation. The slats can only be tilted with this model. The venetian blind cannot be raised or lowered.

Double-glazed facade venetian blind M with motor (without cover profile)



The lower tension cord fixation must be taken into account for the order height, depending on the installation situation. A 24 V cable connecting line is required on site. The cover profile corresponds to width of top rail.

Slat stack heights

Configuration variants	Order height [mm]	600	700	800	900	1000	1100	1200	1300	1400	1500
Slat											
Slats 25 mm	Slat stack height [mm]	80	85	85	90	90	90	95	95	100	100
Configuration variants	Order height [mm]	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
Slat											
Slats 25 mm	Slat stack height [mm]	105	105	110	110	115	115	120	120	125	125
Configuration variants	Order height [mm]	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500
Slat											
Slats 25 mm	Slat stack height [mm]	130	130	135	135	140	140	145	145	150	150

Quantity determination

Number of brackets

Order width	Number
1150 mm	2
1151 - 1950 mm	3
1951 - 2500 mm	4

Number of tapes

Configuration variants	Slat size	Number	End distance
Drives			
Tilt knob	350 - 600 mm	2	85 mm
Tilt knob	601 - 900 mm	2	150 mm
Tilt knob	901 - 1500 mm	3	150 mm
Tilt knob	1501 - 2100 mm	4	150 mm
Tilt knob	2101 - 2500 mm	5	150 mm
Drives + Components			
Motor + Cone, short	420 - 554 mm	2	85 mm
Motor + Cone, short	555 - 604 mm	2	125 mm
Motor + Cone, short	605 - 900 mm	2	150 mm
Motor + Cone, short	901 - 1500 mm	3	150 mm
Motor + Cone, short	1501 - 2100 mm	4	150 mm
Motor + Cone, short	2101 - 2500 mm	5	150 mm
Motor + Cone, long	500 - 639 mm	2	125 mm
Motor + Cone, long	640 - 900 mm	2	150 mm
Motor + Cone, long	901 - 1500 mm	3	150 mm
Motor + Cone, long	1501 - 2100 mm	4	150 mm
Motor + Cone, long	2101 - 2500 mm	5	150 mm
SMI motor + Cone, short	610 - 1000 mm	2	200 mm
SMI motor + Cone, short	1001 - 1600 mm	3	200 mm
SMI motor + Cone, short	1601 - 2200 mm	4	200 mm
SMI motor + Cone, short	2201 - 2500 mm	5	200 mm
SMI motor + Cone, long	640 - 1000 mm	2	200 mm

Configuration variants	Slat size	Number	End distance
SMI motor + Cone, long	1001 - 1600 mm	3	200 mm
SMI motor + Cone, long	1601 - 2200 mm	4	200 mm
SMI motor + Cone, long	2201 - 2500 mm	5	200 mm

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Venetian blinds cable guidance

Tension cable 1.0 mm

Surface	Resistant to corrosion
Material colour	Transparent
Diameter	1.0 mm

Tension cable bracket

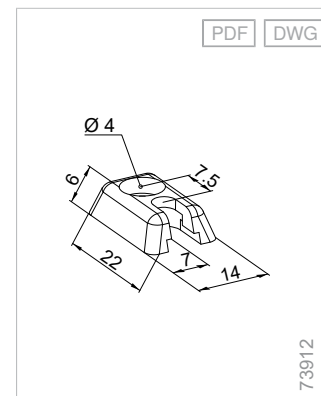
Tension cable bracket blank, for reveal installation, downward

Material	Diecast aluminium
----------	-------------------

Article:

- Plain art. no. 2014328
- White, art. no. 2015985
- Grey, art. no. 2015992
- Black, art. no. 2015993
- Locking ring, art. no. 542033 (separate)

Tension cable bracket incl. locking ring, reveal installation downwards

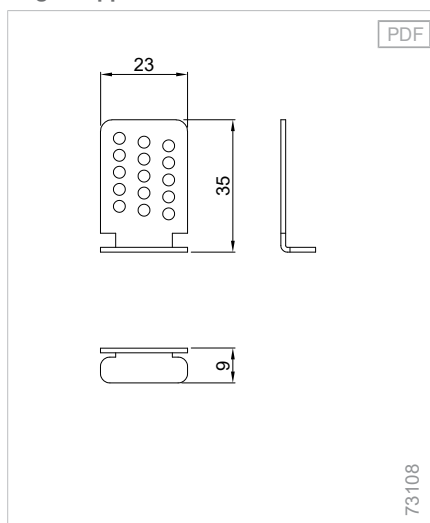


Bracket

Support bracket for top rail, 28x34 mm

Article number: 542689

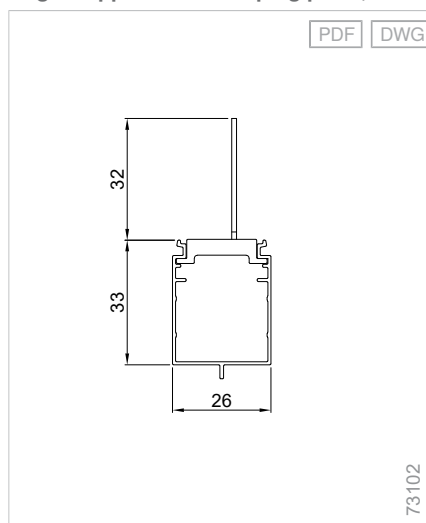
Angle support



Clamping piece, grey

Article number: 2034263

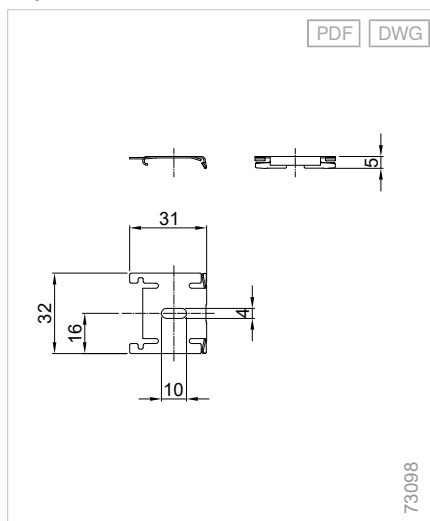
Angle support with clamping piece, built-in



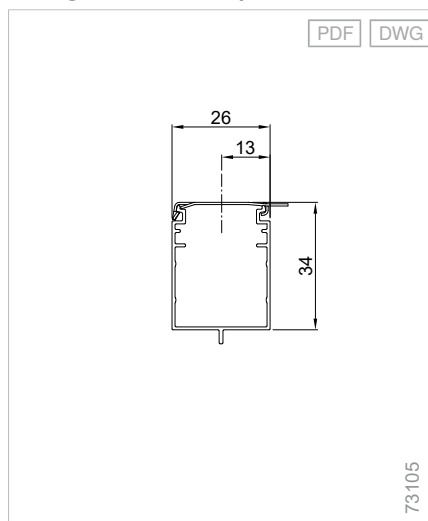
Clip-on bracket for mounting on horizontal surfaces/ceiling installation

Article number: 2034265

Clip-on bracket



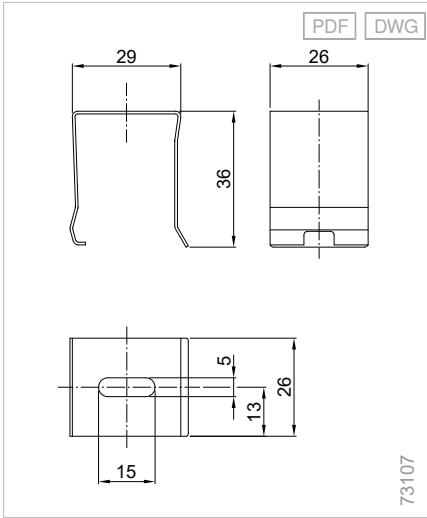
Ceiling bracket with clip function



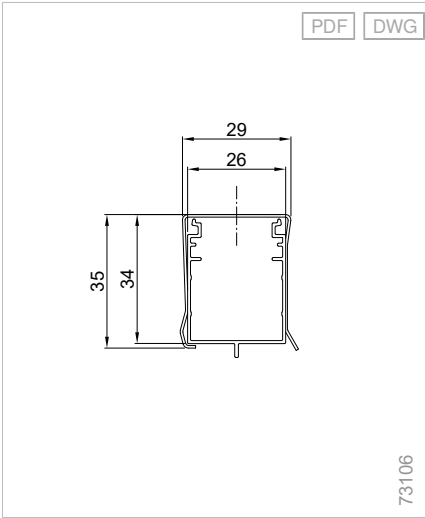
Clip-on bracket for shaft installation

Article number: 2034264

Clip-on bracket for shaft installation



Clip-on bracket for shaft installation



Top rail

Top rail 26x33 mm

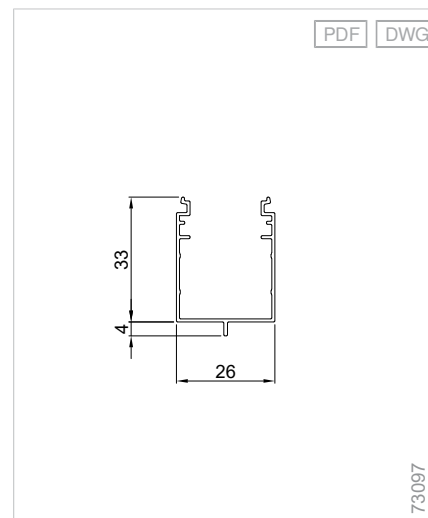
Material	Aluminium, extruded
Surface	Powder-coated
Profile	U-shaped profile
Width	26 mm
Height	33 mm

- Central web to minimise the light gap between top rail and slat
- For motor operation, the built-in components are concealed by a 25 mm slat in the top rail.
- Allocation to slat designs in accordance with WAREMA definition

End closure:

- End closure, plastic

Top rail 26x33 mm



End rail

End rail 21x12 mm

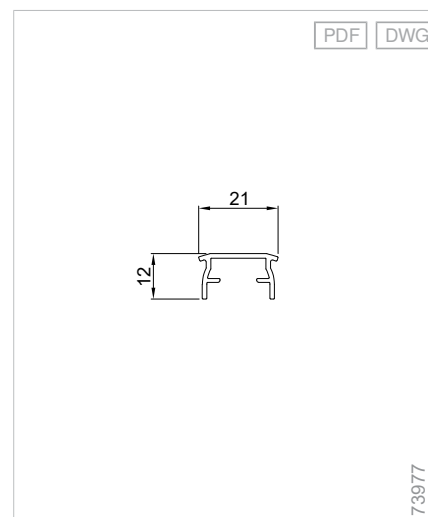
Material	Aluminium, extruded
Surface	Powder-coated
Width	21 mm
Height	12 mm

A C0-anodised cover profile made of aluminium is used.

End closure:

- End closure, plastic

End rail 21x12 mm



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Motor

Innovative drives from leading suppliers

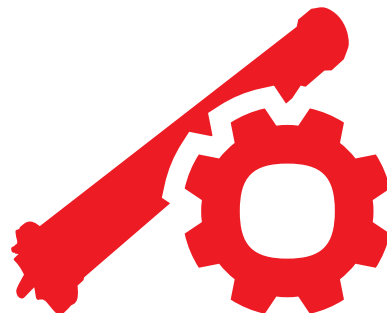
All drive solutions meet the highest quality standards: They are matched to the various WAREMA sun shading products.

Setting high standards for quality and functional performance

WAREMA oversees the development of new drives – from the conceptual design through to market launch.

Convenient installation and commissioning

Simple and guided commissioning with the WAREMA Smart programming cable.



DCD 22-E

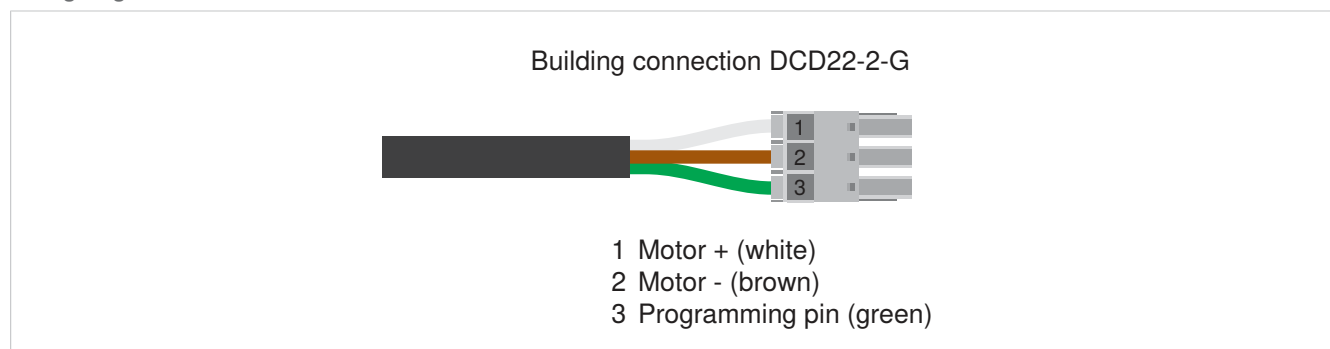
Description:

- Adjustable motor limit positions bottom/top
- Safety switch-off (upper contact switch)
- Speed-controlled simultaneous movement
- Slow tilt
- Soft start/stop

Degree of protection	IP 40
Motor construction type	Block motor
Motor operating type	Wired
Rated voltage	24 V DC
Type of limit switch-off	Electronic
Minimum run time	6 min
Torque	0,6 Nm
Speed	32 U/min
Nominal current	0,32 A
Rated power consumption	7,7 W
Plug-in connector	Receptacle 3-pin
Overheat protection	No
Idle losses in standby	No
Operating temperature	-10 - 60 °C
Operating temperature, temporary	-20 - 85 °C
Motor lines	– LiHH 3x0.25mm ²
Test/programming cable	– WAREMA art. no. 1002809



Wiring diagram DCD22-2-E



SMI motor

Motor construction type	Block motor
Motor operating type	Wired
Rated voltage	24 V DC
Switch-off function, top	Torque, Position
Switch-off function, bottom	Position
Type of limit switch-off	Electronic
Minimum run time	6 min
Torque	0,65 Nm
Speed	30 U/min
Nominal current	0,3 A
Rated power consumption	7,2 W
Plug-in connector	RJ12
Operating duration of motor	6 min

Additional product information

Functions in detail

Adjustable motor limit positions bottom/top

Facilitate an accurate switch-off of the venetian blinds both in the upper and in the lower limit position.

Safety switch-off

A protection device depending on the motor type (contact switch or torque monitoring) additionally protects the venetian blind from damage when raising.

Speed-controlled simultaneous movement

Facilitates an almost synchronous raising and lowering of venetian blinds with the same height, regardless of the width, by means of continuous, load-independent motor speed.

Accurate positioning

At a suitable operating panel the desired height of the sun shading product can be conveniently set by entering a percentage value from 0% (completely retracted sun shading product) to 100% (extended sun shading product). The slat angle is determined by entering an angle value (in degrees).

Position feedback

The position feedback of the motor allows for very precise approaching of the set positions. By means of impulse counting of the covered motor revolutions, the height position and the slat angle can be determined very precisely and reproducibly.

Slow tilt

During manual operation, very precise slat tilting is possible due to the reduced slat tilting speed. During automatic operation, more precise tilting steps (approx. 5° instead of 15°) can be controlled.

Soft start/stop

The motor does not start with full speed, but continuously accelerates until the corresponding movement speed has been reached. The movement to the limit positions is carried out with continuously decreasing speed until standstill.

Note on connecting lines

WAREMA mainly uses halogen-free lines which are resistant to UV rays, approved for permanent use outside and correspond to the requirements of the standard. (Detailed information is available on request).

For convenient on-site connection, WAREMA delivers the matching plug-in connector for on-site wiring, which, if necessary, easily facilitates an all-pole disconnection from the power supply system.

As an additional service, preassembled cable whips, line extensions and rolled products can be ordered from WAREMA in standard dimensions. Special lengths possible on request.

Connecting the plug-in connection - Attention!

Follow the wiring diagram closely to avoid damaging the motor. WAREMA will not accept liability for damage due to improper installation.

You can find the complete range of cable whips and line extensions in the control systems technical data in the Optional extras chapter.

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Planning

Double-glazed facade
venetian blinds

Components

Drive variants

Standards

Intended use – on-site requirements

The user must ensure that the products and services used are tested and suitable for the intended purpose. This includes, among other things, the condition and load-bearing capacity of the mounting substructure. Special features specific to the building project must be checked on-site and passed on to WAREMA as part of the order. That the products are used as intended is the responsibility of the user.

DIN ISO 9001

The certification according to ISO 9001 is an award that emphasises the high quality level of WAREMA sun shading technology. The requirement covers the entire manufacturing process from design and development to production and through to installation and service.

Fixing of products

When ordering, ensure that the selected mounting accessories are suitable for the respective mounting substructure and that the processing instructions given by the fixing materials manufacturer are followed.

CE mark

Motorised external and internal sun shading systems are governed by Machinery Directive 2006/42/EC. An EC Declaration of Conformity is available for these products. External sun shading systems, as well as insect screen roller blinds, regardless of the type of drive, are subject to the Construction Products Regulation (EU)/2011. Declarations of performance are available for these products for the mandated property: wind resistance when extended.

All products governed by the Machinery Directive and/or the Construction Products Regulation are provided with a CE-mark.

Manually operated internal sun shading systems are not governed by either of these two directives or regulations and must not, therefore, be provided with a CE-mark. External or internal sun shading systems conform to the relevant standard, which sets out the details therein:

DIN EN 13659, DIN EN 13561 or DIN EN 13120.

Exceptions - the following products are not provided with a CE-mark: sun sails, patio side screens, insect screen products such as fixed frames, swivel doors, etc. - these products are either not mentioned in the harmonised standards or no testing procedure is defined.

Durability classes according to DIN EN 14201

All WAREMA products are designed to be especially durable. All WAREMA products fulfil durability classes 1, 2 or 3 as standard, tested according to DIN EN 14201.



Height-to-width ratio

The maximum and minimum dimensions specified in the construction limit values are height-dependent. The height must not exceed a size ratio of 1 to 4. With small product widths, optical deviations to the EN 13120 standard may occur.

Note on drawing contents

The greyed-out sections of the illustration represent interfaces to general trades which, on the whole, must be planned and performed independently and on-site. WAREMA does not provide services for the greyed-out interfaces and assumes no liability for them.

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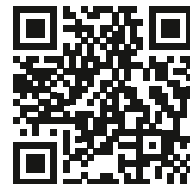
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