

Operating and maintenance instructions

Lamaxa slat roof L60



Der SonnenLichtManager

Valid from 1 July 2025

Please keep for future use.

To be handed over to the operator.

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1 Introduction

1.1 Information on safety

It is essential to follow the instructions in the interest of personal safety. If the instructions and the safety notes and warnings contained therein are not followed, use of the product can lead to personal injury or property damage. WAREMA shall not be held liable if the provided information is not observed.



Warnings in the instructions are identified by this or a similar symbol.



- Read the instructions carefully before using the product.
- Read and follow all safety, setting, operating and maintenance instructions.
- The instructions must be included if you pass the product on to a new owner.
- Keep the instructions for use until you dispose of the product.

1.2 Information on target group

These instructions are directed at people who operate, care for, maintain or repair the product.

The work described in the "Maintenance" chapter may only be performed by a qualified specialist. Improperly executed maintenance may result in product damage and personal injury.

As stated in the "Repair" chapter, work on the product may only be performed by a qualified specialist. Insufficient product knowledge can result in dangerous situations during repairs. Improperly executed repairs may result in product damage and personal injury.

The "Troubleshooting" chapter lists known faults and indicates who is authorised to handle the troubleshooting procedure. It is important to note the target group specified in the "Note" column. Only problems with no specific reference to a target group may be rectified by the user.

1.3 Contents

These instructions are an integral part of the following product: Lamaxa slat roof L60

The instructions contain important information on the operation, handling, care and, if necessary, maintenance.

They describe how to operate products with WAREMA standard drives. Other drives and special solutions are not dealt with.

1.4 Permissible activities

All measures permitted on the product are specified in these instructions or the supplementary documentation.

Without the written authorisation of WAREMA, no other modifications are permitted to be carried out.

1.5 Explanation of signal words



DANGER

Identifies an imminent danger that may result in death or serious injury.



WARNING

Identifies a potential danger that may result in death or serious injury.



CAUTION

Identifies a potential danger that may result in light injury.



NOTICE

Identifies a potential situation that may result in product or property damage and malfunctions.

2 Basic safety instructions

The safety instructions and warnings described here are intended to safeguard your health and to protect the product. These instructions must be read carefully and followed.

Damage resulting from inappropriate use or the failure to follow these instructions is not covered by the warranty. Liability will not be accepted for secondary damage.

2.1 General safety instructions

General operation

The operation of a faulty product may result in personal injury or damage to adjacent parts.

Therefore, note the following.

- ▶ Only operate the product if it is in technically flawless condition.
- ▶ Only operate optional extras of the product if in technically perfect condition.
- ▶ If the product makes unusual noises or movements, stop using the product immediately. Inform a qualified specialist immediately and wait for further instructions.

Risk of crushing during operation

Improper operation may lead to injuries. The movements of the product can cause crushing of limbs.

Therefore, note the following.

- ▶ Do not reach between the moving parts while the product is moving.
- ▶ Do not reach into openings on the product while operating it.

Violation of the monitoring obligation during operation

Failure to monitor the product while it is moving may result in personal injury and property damage.

Therefore, note the following.

- ▶ Keep persons and animals out of the path of the product.
- ▶ Remove obstacles from the path of the product.

Operation in the event of a power supply failure

An electrically-operated product cannot be operated without power.

In bad weather and an associated power failure, and extended or lowered product can be exposed to impermissibly high loads, which can lead to serious personal injury or product damage.

Therefore, note the following.

- ▶ In areas prone to high winds and frequent power failures, it should be possible to retract or raise the product manually or with emergency power. A manual emergency operation unit or an emergency power supply is recommended.

Access to the operating element (electrically operated product)

The operating element is not suitable for children since they cannot recognize the danger that the product may present. Careless handling can lead to injuries.

Therefore, note the following.

- ▶ Do not allow children to play with fixed control systems or operating elements.
- ▶ Keep the hand-held transmitter out of the reach of children.

Operation in icy conditions/winter (general procedure)

The operation of the product at temperatures around or below the freezing point can lead to malfunctions and/or damage to the product or property in the case of unfavourable installation and building situations. After exposure to condensation water, rain or snow, the product can freeze up at low temperatures ($< +4\text{ }^{\circ}\text{C}$) and must not be operated.

Therefore, note the following.

- ▶ Before using, the product must be freed from snow and ice in order to make it functional.
- ▶ Before using, the guide grooves must also be freed from snow and ice.
- ▶ No operation of the product while it is iced over.

Operation in winter (Product with control system)

Products operated by a control system may start moving at any time and without prior notice. After exposure to condensation water, rain or snow, the product can freeze up at low temperatures ($< +4\text{ }^{\circ}\text{C}$). Movement of the product can lead to malfunctions and product or property damage.

Therefore, note the following.

- ▶ Switch off the control mode of the control system if there is no ice alarm.

Hazard potential for the product

An additional load can damage the product or cause it to detach from its mount.

Therefore, note the following.

- ▶ Holding on to the product, leaning objects against it or hanging objects from it is not permitted.

Malfunction due to leaves or foreign objects

External sun shading systems are exposed to weather and environmental influences. Depending on their location, leaves and other debris may enter the product and impair its function or lead to malfunctions.

Therefore, note the following.

- ▶ Leaves and other foreign objects must be removed from the guide grooves and other product openings.

Special features awning fabric

The awning fabric can become electrostatically charged. Contact with people or objects may result in an electrostatic discharge from charged fabric.

2.2 Additional safety instructions for the roof system

Operation in wind

The product is only able to withstand the loads associated with the specified wind speed limits (see the wind resistance section in these instructions).

Therefore, note the following.

- ▶ Close the slats when the wind speed limit is exceeded.
- ▶ Close the slats promptly before bad weather arrives.
- ▶ All other movements of the product must be prevented while the wind speed limit is reached or exceeded.
- ▶ During your absence, it is recommended to place the product in a safe position and switch the control to manual mode to prevent unintended movements. Power failures or faults can impair the control and expose the product to extreme weather conditions, which may result in damage or cause the unit to fall down.

Optional extras can influence the loads in wind. For this reason, it is important to note the procedure indicated for optional extras in wind.

Basic safety instructions

Operation in icy conditions/winter (supplement)

Also note the following.

- ▶ To prevent freezing of the slats, the slats can be opened slightly in cold winter months. The adjustment must be made by the qualified specialist.
- ▶ In areas with heavy snowfalls, the slat can be positioned vertically (90°) so that snow does not weigh down the construction of the roof system. The adjustment must be made by the qualified specialist.
- ▶ No operation when snow is resting on the closed slats.
- ▶ If the slats are closed, the roof must be cleared of snow before the specified snow load is reached (see the chapter "Maximum snow load on the roof system").

Roof avalanches from nearby buildings may damage the roof system.

Heavy snowfall and sleet are possible in winter. As temperatures rise, accumulated snow may slide off of unprotected and, in part, smooth areas (e.g. house roof with or without a photovoltaic system) onto the roof system. This may damage the roof system.

Therefore, note the following.

- ▶ It is recommended to install snow guards in the area of the roof system or snow stop hooks on the entire roof to prevent snow masses from sliding off in an uncontrolled manner.

Hazard potential for the product (supplement)

Also note the following.

- ▶ It is not permitted to step on the product.
- ▶ Open flames and spark-generating heat sources must not be operated near the product.

Freezing of drainage channels in winter

In winter, snow may melt and refreeze, causing drainage systems to freeze shut or crack.

Therefore, note the following.

- ▶ In locations that frequently experience icy conditions, the installation of an antifreeze device (e.g. gutter heating) is recommended for the drainage system.

Dirty drainage pipes

Drainage systems can become clogged with leaves, moss and other debris, which can cause the drain to overflow when it rains.

Therefore, note the following.

- ▶ Installation of a leaf guard is recommended to prevent the accumulation of debris in the vertical drainage system.
- ▶ Drainage systems with an insufficient gradient must be cleaned more often.

2.3 Additional safety instructions for the vertical textile shading unit (optional)

Operation in wind

The product is only able to withstand the loads associated with the specified wind speed limits (see the wind resistance section in these instructions).

Special precautions must be taken before bad weather arrives.

Even when using a control, sudden strong gusts of wind can damage the product, e.g. after the control has triggered the move command to raise the product to the upper limit position.

Drive with responsive blockage detection and obstacle detection (in the DOWN direction):

A strong gust of wind activates the control, but the product does not retract because the motor is stopped by the torque that is produced.

In case of blockages due to wind, the drive stops, reverses briefly and then tries three times to overcome the blockage. If the blockages occur at different positions, the drive tries multiple times before it stops.

Therefore, note the following.

- ▶ Raise the product if the wind speed limit is reached.
- ▶ Raise the product promptly before bad weather arrives.
- ▶ All other movements of the product must be prevented while the wind speed limit is reached or exceeded.
- ▶ During your absence, it is recommended to place the product in a safe position and switch the control to manual mode to prevent unintended movements. Power failures or faults can impair the control and expose the product to extreme weather conditions, which may result in damage or cause the unit to fall down.

Duty of supervision when not installed at ground level

If the installation location of the roof system is on a balcony or a roof terrace, for example, special precautions must be taken for the vertical textile shading regarding the wind to ensure the safety of persons.

The product is only able to withstand the loads associated with the specified wind speed limits (see the wind resistance section in these instructions).

- ▶ The table with the wind speed limits for installation locations that are not at ground level in these instructions must be noted.
- ▶ In your absence, raise the vertical textile shading.
- ▶ The WMS Weather station plus with a mains supply is in use with the roof system.
- ▶ The wind sensor is installed at a wind-exposed location. The installation location has an influence on the triggering behaviour of the control/weather station.
- ▶ Lowering of the vertical textile shading must be interrupted immediately if responsive obstacle detection of the drive is activated during a movement. The product must be raised and is not permitted to be lowered again until the wind settles down.
- ▶ If the vertical textile shading was lowered in wind, it must be checked if the zipper of the awning fabric is properly seated in the guide element. If a fault has occurred and the zipper has slipped out, raise the product. After the wind has settled down, lower the product multiple times and check if the fault is still present or not. If the fault is still present despite several attempts to rectify it, contact a specialised retailer to correct the problem. Do not operate the product in the meantime.
- ▶ If a weather station is installed, the automatic extension feature (sun-based or time-based control mode) for the vertical textile shading unit must be switched off.

Operation in wet weather

Moisture promotes wrinkling and waffling and deteriorates the awning fabric.

Therefore, note the following.

- ▶ Lower awnings after it stops raining to dry awning fabric that got wet.
- ▶ Weather permitting, only raise the awning if the awning fabric is completely dry.

2.4 Additional safety instructions for the radiant heater (optional)

Violation of the monitoring obligation during operation

If operation is inadequately monitored, property damage may result. If the minimum distances are not adhered to, heat generation can scorch surfaces and cause fires.

Therefore, note the following.

- ▶ Never operate the radiant heater unattended.
- ▶ Do not equip and operate the radiant heater with a time switch or similar.
- ▶ Do not cover the radiant heater with textiles.

Operating note

The radiant heater becomes hot when it is switched on. Inappropriate conduct can create a burn hazard or cause the product to overheat.

Therefore, note the following.

- ▶ Do not touch the heating surface during operation.
- ▶ Only touch the switched-off radiant heater after the cooling phase.

Hazard potential caused by the product

- ▶ Do not gaze directly into the radiant heater as extended eye contact can damage the eyes.
- ▶ Highly flammable fabrics and spray cans must not be stored near the device when it is switched on.

2.5 Additional safety instructions for the lighting (optional)

Information on use

- ▶ The light source creates low lighting that is not suitable for reading.
- ▶ Do not gaze directly into the light source when it is switched on since extended eye contact can damage the eyes.

2.6 Additional safety instructions for the sliding element (optional)

Operation in wind

The product is only able to withstand the loads associated with the specified wind speed limits (see the wind resistance section in the associated instructions).

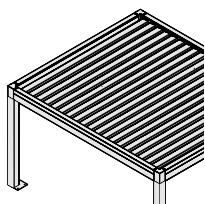
Therefore, note the following. (short description)

- ▶ All wings of the sliding shutter must be opened when the specified wind speed limit is exceeded.
- ▶ Before bad weather arrives, all the panels of the sliding shutter must be opened promptly.
- ▶ All other movements of the product must be prevented while the wind speed limit is exceeded.

3 Product information

3.1 Intended use Slat roof

The following details apply to the following product: Lamaxa slat roof L60



The roof system is an open outdoor canopy made from aluminium rather than a self-contained insulated conservatory. Thus, it cannot be guaranteed that the structure will be 100% water-proof.

The product offers nearly year-round protection against wind and rain.

When closed, the slats protect the patio against rain.

The rotatable slats can be used to minimize direct sunlight.

Additional loads on the product in the form of hanging objects or ropes/cables could damage the product or cause it to become detached from the wall and are therefore not permitted. The same applies to additionally attached parts not provided for by the manufacturer or the integration of other drives. WAREMA will not be liable for any ensuing damage.

Intended use also includes observing these instructions and adhering to the service requirements they describe.

Improper use may lead to serious injury or loss of life.

Further product information

The product properties are governed by the guideline for slat roofs [published by the Industrievereinigung Rollladen-Sonnenschutz-Automation e. V. c/o IRTS e. V.].

The drainage system integrated in the product is able to cope with most of the rainfalls that occur.

The water is directed via the slats on one side into the drainage gutter along a beams and into the poles. For structural reasons, the drainage gutter does not have a slope and water may remain in the gutter for extended periods.

Raindrops can enter the interior in the following cases.

- ▶ Heavier rain events than tested by WAREMA. *
- ▶ When the slats are opened after a downpour.
- ▶ Rainwater splashing out of the drainage gutter. It can be prevented by means of the optional protection profile.
- ▶ Condensation that can form depending on the weather.
- ▶ Strong or changeable gusts of wind.
- ▶ Droplets can form on the frame and on the poles.

* Tested rain event:

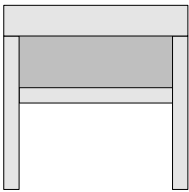
- ▶ Lamaxa withstands a medium rain event that occurs every 2 years for 5 minutes [(350 l/(s*ha) equivalent to 126 l/(h*m²)]
- ▶ Lamaxa withstands rain class 2 [56 l/(h*m²)] as per DIN EN 13561.
- ▶ Requirements:
 - a) 1 drainage present for Lamaxa size (order width x order length) < 16 m².
 - b) 2 drainages present for Lamaxa size (order width x order length) ≥ 16 m².
 - c) Free-standing roof system When connected to the wall, facade water may also be an issue, increasing the quantity of water to the point where the tested rain event is exceeded.
 - d) Regular cleaning of the drainage system.

Furnishings and floor coverings must therefore be suitable for outdoor use.

3.2 Intended use Vertical textile shading (optional)

The following details apply to the following product: Integrated awning with easyZIP guidance

Product information



The product is an external sun shading system that may be used for sun protection and glare control on a supporting product (e.g., a roof system).

The product reduces the incidence of light.
The product is intended to be used as a sun shading system, but not as a form of rain protection.

If the supporting product is installed, e.g. on a balcony or roof patio, special precautions need to be taken to comply with regulations for the intended use (see the chapter on wind resistance in these instructions).

The product must not be a hindrance in or block escape/emergency routes.

All closures and awnings intended for external use are designed to handle a wind load of 1,1 kN/m² when retracted.

The directive entitled "Wind loads for construction of closures and awnings when retracted – Section 5.1.1" defines the positions at which these products can be installed without requiring special precautions [published by the Bundesverband Rollladen + Sonnenschutz e. V. and ITRS Industrieverband Technische Textilien - Rollladen - Sonnenschutz e. V.].

Additional loads on the product in the form of hanging objects could damage the product or cause it to detach from the wall and are therefore not permitted. The same applies to additionally attached parts not provided for by the manufacturer or the integration of other drives. WAREMA will not be liable for any ensuing damage.

To ensure intended use of the product it must be raised in time before any of the following conditions occur:

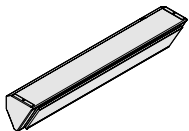
- ▶ Wind above the maximum permitted wind speed limit
- ▶ Snowfall
- ▶ Storm fronts and bad weather fronts (gusts)

Intended use also includes observing these instructions and adhering to the service requirements they describe.

Improper use may lead to serious injury or loss of life.

3.3 Intended use Radiant heater (optional)

The following details apply to the following product: Design radiant heater (optionally dimmable)



The product is designed to generate radiant heat outdoors.

The product without a WMS Dimmer 0-10 V can be connected to a mains voltage of 230 V/50 Hz via a WMS Plug receiver power.

The product with a WMS Dimmer 0-10 V can be connected directly to a mains voltage of 230 V/50 Hz.

An on-site, all-pole disconnecting and isolating switch must be present.

3.4 Intended use Lighting (optional)

The following details apply to the following product:

- LED strips
- RGB strips

	On the beam	In the pole	In the slat
LED lighting	X	X	X
RGB lighting	X	-	-

LED strips

The product consists of an electronic LED lighting device (warm white light) for outdoor installation.

In the roof system, the power supply of the LED strips is provided via the WMS Dimmer smart.

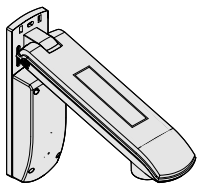
RGB strips

The product consists of an electronic lighting device with RGB LEDs for outdoor installation.

In the roof system, the power supply of the RGB strips is provided via the RGB Dimmer ZigBee.

3.5 Intended use Weather station (optional)

The following details apply to the following product: WMS Weather station plus



The product enables the wireless control of the sun shading system and is equipped with a sensor for brightness, precipitation, temperature and wind speed.

The weather station may be connected to a mains voltage of 230 V/50 Hz and must be set to the value specified for the product.

3.6 Parts description

Roof system

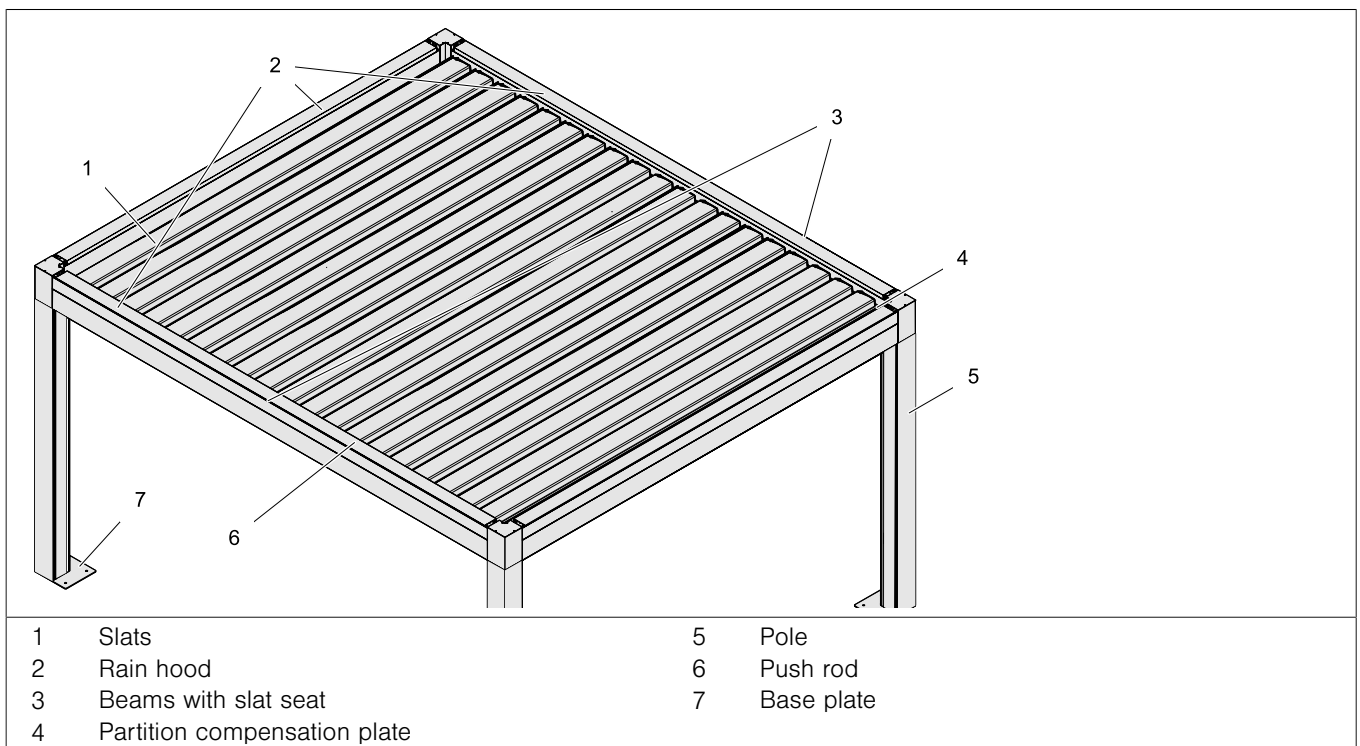


Fig. 1: Parts description of Lamaxa L60 slat roof

Product information

Vertical textile shading (optional)

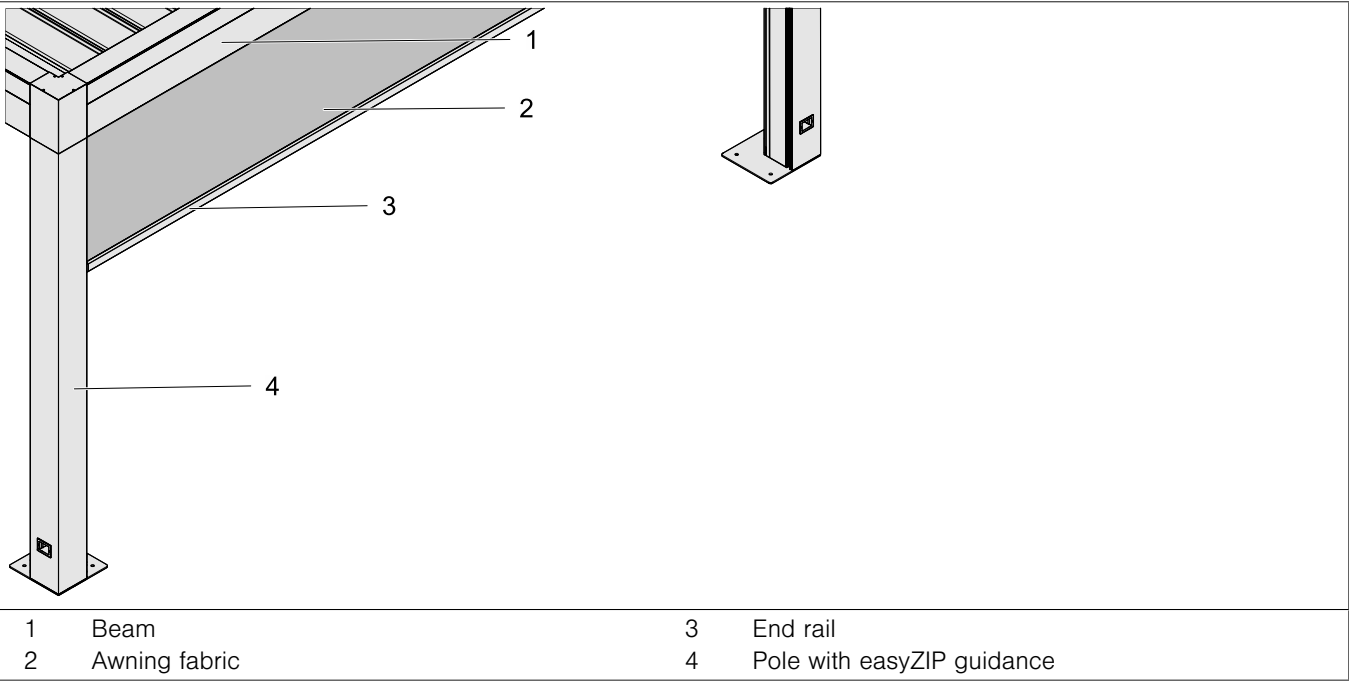


Fig. 2: Parts overview of integrated awning with easyZIP guidance

Radiant heater (optional)

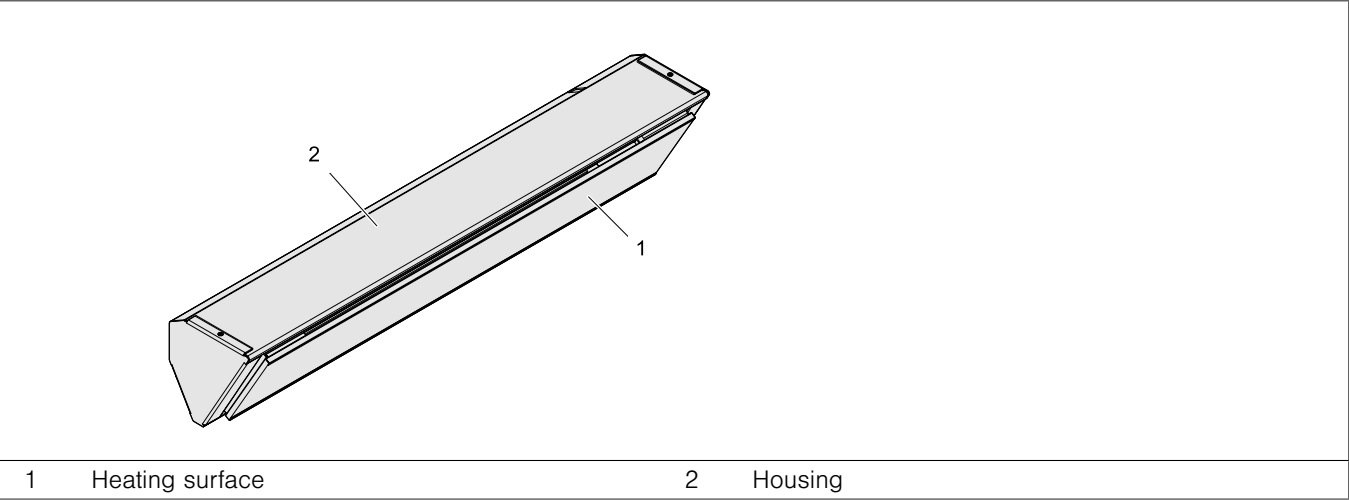


Fig. 3: Parts description of Design radiant heater

Weather station (optional)

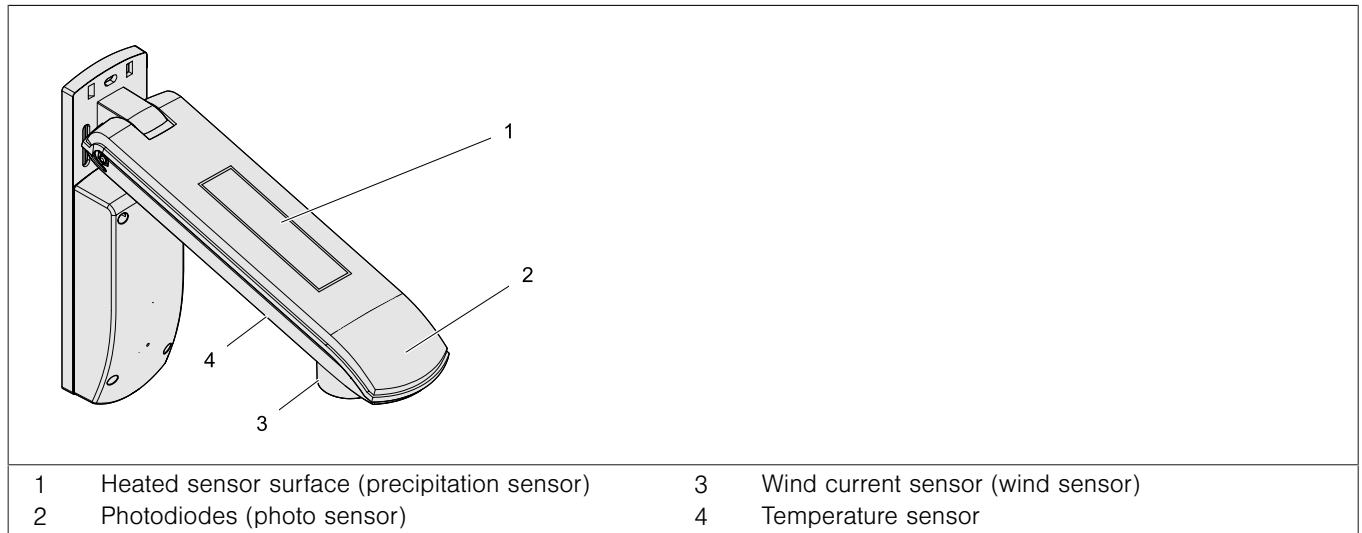
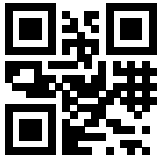


Fig. 4: Parts description of WMS Weather station plus

3.7 Declaration of performance



The declaration of performance can be found at (www.warema.de/ce).

4 Technical data

4.1 Wind resistance Slat roof

Data on the determined wind resistance class

The product achieves the following resistance to wind loads: class 6

The declared performance only applies to the product itself.

Data on the maximum permissible wind speed

The maximum permitted wind speed (wind speed limit) for the product with open slats is: 13 m/s (corresponds to approx. 38 to 48 km/h / Beaufort 6)

Wind speed 13 m/s is defined as a strong wind in which thick branches sway, umbrellas are difficult to control and telegraph cables howl in the wind.

If the maximum wind speed of 13 m/s (corresponds to approx. 48 km/h) is reached, the slats must be closed.

The product is designed for a wind load of 1.1 kN/m².

4.2 Wind resistance Vertical textile shading (optional)

Data on the determined wind resistance class

Achieved resistance to wind loads:

– Integrated awning with easyZIP guidance

Order width ≤ 3000 mm:	Class 6
Order width > 3000 mm ≤ 4000 mm:	Class 5
Order width > 4000 mm ≤ 6000 mm:	Class 0 *

* Since not tested.

The declared performance only applies to the product itself.

The achieved class of resistance to wind loads does not allow any conclusions to be drawn about the suitability for use (raising/lowering, intermediate position) under actual wind loads. For this reason, WAREMA defines wind speed limits.

Wind speed limits are the maximum permissible wind speeds which must not be exceeded. When the wind speed limits are reached, the product must be raised.

Data on the maximum permissible wind speed limits

If a wind sensor is used (recommended by WAREMA), it must be ensured that the set wind speed limit relates to the wind speeds that actually occur at the product. It is recommended that the wind sensor is set one level lower than determined (e.g. to 7 m/s instead of 10 m/s) to enable the product to be raised while also taking gusts of wind into account.



INFO

Due to their design, awnings with easyZIP guidance are able to withstand much higher wind speeds when extended than while they are extending.

The supplied product features a new motor with a responsive obstacle detection mechanism. The motor is capable of detecting an excessive wind load while the product is being lowered, which means that the product is stopped temporarily while it is moving.

Data on the maximum permissible wind speed limits for installation of the roof system at ground level (optional)

Basis for the following table

► Raise the awning.

► Installation:

Installation on the roof system/ground-level installation
location of the roof system

Order height in [mm]	Order width in [mm]										
	up to 1000	up to 1500	up to 2000	up to 2500	up to 3000	up to 3500	up to 4000	up to 4500	up to 5000	up to 5500	up to 6000
up to 1000	24	24	24	20	20	20	20	20	20	17	17
up to 1500	24	24	20	17	17	17	17	17	17	13	13
up to 2000	24	20	17	17	13	13	13	13	13	13	13
up to 2500	20	17	17	13	13	13	13	13	13	13	13
up to 3000	20	17	13	13	13	13	13	13	13	13	10

Tab. 1: Wind speed limits for awning with easyZIP guidance (motor with obstacle detection) for raising when the roof system is installed at ground level (details in m/s)

The permissible wind speed is reduced in defined levels ([see Tab. 3](#)).

Data on the maximum permissible wind speed limits for installation of the roof system that is not at ground level (optional)

Basis for the following table

► Raise the awning.

► Installation:

Installation of the roof system/installation of the roof
system not at ground level

Order height in [mm]	Order width in [mm]										
	up to 1000	up to 1500	up to 2000	up to 2500	up to 3000	up to 3500	up to 4000	up to 4500	up to 5000	up to 5500	up to 6000
up to 1000	20	20	20	17	17	17	17	17	17	13	13
up to 1500	20	20	17	13	13	13	13	13	13	10	10
up to 2000	20	17	13	13	10	10	10	10	10	10	10
up to 2500	17	13	13	10	10	10	10	10	10	10	10
up to 3000	17	13	10	10	10	10	10	10	10	10	7

Tab. 2: Wind speed limits for awning with easyZIP guidance (motor with obstacle detection) for raising when the roof system is not installed at ground level (details in m/s)

The permissible wind speed is reduced in defined levels ([see Tab. 3](#)).

Calculation examples:

0	1	3	5	7	10	13	17	20	24	28	32
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Tab. 3: Levels for determining the wind speed limits (details in m/s)

If the wind speed is reduced by, for example, 1 level, the value listed one column to the left must be used.

Basis for calculation:

- Order width: 4000 mm
- Order height: 1500 mm
- Screen 4% / 5%

Determined values:

Ground-level installation location

- Wind speed limit as per table: 17 m/s
- Wind speed limit to be set on wind sensor: 13 m/s

Installation location not at ground level

- Wind speed limit as per table: 13 m/s
- Wind speed limit to be set on wind sensor: 10 m/s

Technical data

4.3 Resistance against water collection of the roof system

The product fulfils performance class 2 as per EN 13561.

Performance class 2 is equivalent to precipitation of 56 l/m² per hour.

4.4 Maximum snow load of the roof system

Order length in [mm]	Order width in [mm]									
	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750
2000	300	260	210	170	120	115	90	70	52	28
2178	300	260	210	170	120	115	90	70	52	28
2398	300	260	210	170	120	115	90	70	52	28
2618	300	260	210	170	120	115	90	70	52	28
2838	300	260	210	170	120	115	90	70	52	28
3058	300	260	210	170	120	115	90	70	52	28
3278	300	260	210	170	120	115	90	70	52	28
3498	300	260	210	170	120	115	90	70	52	28
3718	300	260	210	170	120	115	90	70	52	28
3938	300	260	210	170	120	115	90	70	52	28
4158	300	260	210	170	120	115	90	70	52	28
4378	300	260	210	170	120	115	90	70	52	28
4598	300	260	210	170	120	115	90	70	52	28
4818	300	260	210	170	120	115	90	70	52	28
5038	300	260	210	170	120	115	90	70	52	28
5258	300	260	210	170	120	115	90	70	52	28
5478	300	260	210	170	120	115	90	70	52	28
5698	280	260	210	170	120	115	90	70	52	28
5918	260	250	210	170	140	115	90	70	52	28
6000	250	240	210	170	140	115	90	70	52	28
6138	240	230	210	170	140	115	90	70	52	28
6330	230	220	210	170	140	115	90	70	52	28

Tab. 4: Maximum snow load on the slat roof Lamaxa L60 [kg/m²]

4.5 Electrical data

Electric drive data

Parameter	Data Roof system	Data Vertical textile shading (optional)
Torque [Nm]	30	8 - 30
Speed [rpm]	17	17
Rated voltage	230 V/50 Hz	230 V/50 Hz
Current consumption [A]	0.9	0.45 - 0.9
Power consumption [W]	205	100 - 205
Degree of protection	IP 44	IP 44
Safety class	I	I
Short-term operation (S2)*	4 min	4 min
Emissions sound pressure level	LpA ≤ 70 dB(A)**	LpA ≤ 70 dB(A)**

Tab. 5: Electric drive data

* In continuous mode, the motor switches off after a defined time and pauses to cool down.

** The sound pressure level LpA in a standard installation of the product on a test stand is 70 dB(A). This value may vary depending on the specific installation.



INFO

The table above shows a summary of the permissible motors.

Radiant heater data (optional)



INFO

C16 fuse: For the radiant heater, an in-line circuit breaker with type C16 is **mandatory**.

Parameter	Data
Mains voltage	230 - 240 VAC/50 Hz
Power consumption [W]	2200
Power consumption in standby [W]	0.7
Degree of protection	IP 65
Safety class	I

Tab. 6: Data for the Design radiant heater

Optional: A WMS Dimmer 0-10 V may be integrated for switching and dimming the radiant heater.

Parameter	Data WMS Dimmer 0-10 V
Operating voltage [V DC]	12
Power consumption [W]	0.2
Frequency [GHz]	2.40 - 2.48
Degree of protection	IP 54
Safety class	III
Operating and storage temperature [°C]	-20 to +55

Tab. 7: Data for WMS Dimmer 0-10 V (optional)

Lighting data (optional)

Parameter	Data LED strips ¹	Data RGB strips
Operating voltage V DC	24	24
Degree of protection	IP 67	IP 54
Max. power [W/m]	4.8	12
Max. light power [lm/m]	400	-
Colour temperature [Kelvin]	3000	-

Tab. 8: Data for LED strips/RGB strips (optional)

¹ Energy efficiency class: no data necessary ²

² According to the Ecodesign Regulation (EU) 2019/2020 (as of 1 October 2019) on the energy efficiency of light sources, the lighting of this product (surrounding product) contains a removable light source that is outside the scope of the regulation (luminous flux of the smallest unit of the light source < 60 lumens). Therefore, the labelling obligation according to Ecodesign Regulation (EU) 2019/2015 (as of 11 March 2019) Annex II on energy consumption labelling does not apply.

Technical data

Parameter	Data WMS Dimmer smart	Data ZigBee RGB Dimmer smart
Operating voltage [V AC]	200 - 240	200 - 240
Frequency [Hz]	50 - 60	50 - 60
Load current [A] at 230 V AC	6.0	-
Operating voltage [V DC]	24	24
Switching capacity [W] at 24 V DC	With WMS Dimmer smart xx [W]	With ZigBee RGB Dimmer smart xx [W]
	60 L (Art. no. 2023455)	55
	100 L (Art. no. 2023456)	95
	200 L (Art. no. 2023457)	150
Degree of protection	IP 54	IP 54
Safety class	I	I
Operating and storage temperature [°C]	-20 to +55	-20 to +55

Tab. 9: Data for WMS Dimmer smart/ZigBee RGB Dimmer smart (optional)

Weather station data (optional)

Parameter	Data WMS Weather station plus
Mains voltage [V AC]	85 - 253
Frequency [Hz]	50 - 60
Power consumption [W]	3.6
Transmission frequency [GHz]	2.4 - 2.48
Transmission power [dBm]	10
Degree of protection	IP 43
Safety class	II

Tab. 10: Data for the WMS Weather station plus

5 Operation



INFO

- Only operate the product if it is in technically perfect condition.
- A damaged or faulty product should no longer be used, as this may cause further damage or pose a risk to the operator. Always contact the specialised retailer and secure the product against operation as agreed with the specialist.



WARNING

Risk of crushing from failure to exercise care during operation.

Persons who are located within the projection area may be injured.

- Keep the path of the product clear of people.
- Keep children away from the operating elements.

5.1 Description of the WMS Hand-held transmitter



NOTICE

Product damage from incorrect storage!

The WMS Hand-held transmitter is for indoor use only. It is **not water-proof**. If the hand-held transmitter is left outdoors, moisture may enter the device and it may cease to function properly.

- Do not leave the WMS Hand-held transmitter outdoors.



INFO

The detailed description of the hand-held transmitter can be found in the instructions accompanying the hand-held transmitter.

Equipment	Number of channels
Drive - tilting	1 channel
Direct LED lighting, two-sided or four-sided on beam a to d (optional) ¹	1 channel
Indirect LED lighting, two-sided or four-sided on beam a to d (optional) ¹	1 channel
LED lighting in pole (fields a - d) (optional) ¹	1 channel
LED lighting in the slat (optional) ¹	1 channel
Radiant heater with WMS Dimmer 0-10 V (optional) ¹	1 channel per radiant heater *
Radiant heater with WMS Plug receiver power (optional) ¹	1 channel per radiant heater **
Vertical textile shading (optional) ²	1 channel per awning

Tab. 11: Overview of the equipment and required number of channels per equipment

¹ The channel is only occupied if the component was contained in the roof system order.

* An additional channel is required if the WMS Plug receiver power is used with the component.

** An additional channel is required if the WMS Dimmer 0-10 V is used with the component.

² The vertical textile shading is always programmed for the WMS network after it has been installed.

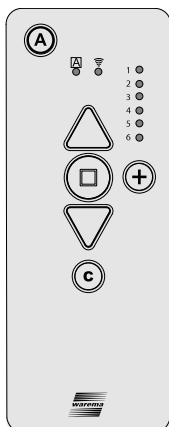
Key assignment of the WMS Hand-held transmitter plus



INFO

When fully equipped, not all components can be operated with a hand-held transmitter. The hand-held transmitter has 6 channels.

The channels are assigned one after the other.



Channel no.	Assignment (standard) ¹	Assignment (customer-specific)
1	Drive	
2	LED beam direct (two-sided or four-sided)	
3	LED beam indirect (two-sided or four-sided)	
4	LED pole	
5	LED slat	
6 *	Radiant heater 1 with WMS Dimmer 0-10 V Field a	
7 ² / *	Radiant heater 2 with WMS Dimmer 0-10 V Field b	
8 ² / *	Radiant heater 3 with WMS Dimmer 0-10 V Field c	
9 ² / *	Radiant heater 4 with WMS Dimmer 0-10 V Field d	
10 ² / **	Radiant heater 1 with WMS Plug receiver power Field a	
11 ² / **	Radiant heater 2 with WMS Plug receiver power Field b	
12 ² / **	Radiant heater 3 with WMS Plug receiver power Field c	
13 ² / **	Radiant heater 4 with WMS Plug receiver power Field d	

Tab. 12: Standard assignment of WMS Hand-held transmitter plus (settings at the factory)

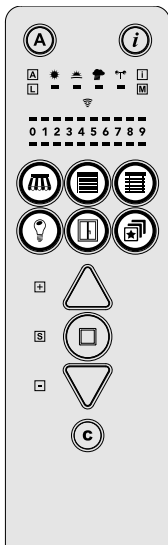
- 1 The channels are assigned at the factory if all specified components are present upon delivery.
The preassigned channel changes if an additional accessory listed before it is not present.
- * An additional channel is required if the WMS Plug receiver power is used with the component.
- ** An additional channel is required if the WMS Dimmer 0-10 V is used with the component.
- 2 If all listed components are present before this, an additional hand-held transmitter must be used.

Channel no. ³	Assignment (standard)	Assignment (customer-specific) ⁴
	Awning	Direction
	Awning	Direction
	Awning	Direction
	Awning	Direction

Tab. 13: Assignment of WMS Hand-held transmitter plus (taught on-site)

- 3 Enter the number of the channel.
- 4 For better identification, add a clearly identifiable location name, e. g. toward house.

Key assignment of the WMS Hand-held transmitter comfort



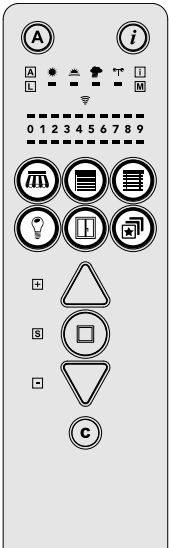
		
Channel no.	Assignment (standard)	Assignment (customer-specific)
0	Drive	

Tab. 14: Standard assignment of WMS Hand-held transmitter comfort product button for external venetian blind (setting made at the factory)

		
Channel no.	Assignment (standard) ¹	Assignment (customer-specific)
0	LED beam direct (two-sided or four-sided)	
1	LED beam indirect (two-sided or four-sided)	
2	LED pole	
3	LED slat	
4 *	Radiant heater 1 with WMS Dimmer 0-10 V Field a	
5 *	Radiant heater 2 with WMS Dimmer 0-10 V Field b	
6 *	Radiant heater 3 with WMS Dimmer 0-10 V Field c	
7 *	Radiant heater 4 with WMS Dimmer 0-10 V Field d	
8 **	Radiant heater 1 with WMS Plug receiver power Field a	
9 **	Radiant heater 2 with WMS Plug receiver power Field b	
10 **	Radiant heater 3 WMS Plug receiver power Field c	
11 **	Radiant heater 4 with WMS Plug receiver power Field d	

Tab. 15: Standard assignment of WMS Hand-held transmitter comfort product button for light (setting made at the factory)

- 1 The channels are assigned at the factory if all specified components are present upon delivery.
The preassigned channel changes if an additional accessory listed before it is not present.
- * An additional channel is required if the WMS Plug receiver power is used with the component.
- ** An additional channel is required if the WMS Dimmer 0-10 V is used with the component.



Channel no. ²	Assignment (standard)	Assignment (customer-specific) ³
	Awning	Direction
	Awning	Direction
	Awning	Direction
	Awning	Direction
	Awning	Direction
	Awning	Direction

Tab. 16: Standard assignment of WMS Hand-held transmitter comfort product button for awning (setting made at the factory)

- 2
- Enter the number of the channel.
- 3
- For better identification, add a clearly identifiable location name, e. g. toward house.

5.2 Operating the slat roof with the WMS Hand-held transmitter

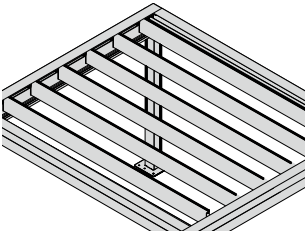
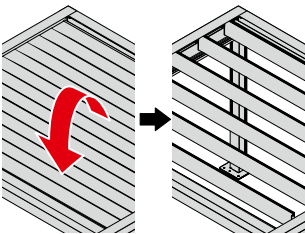
Function	Description
Ventilation	Air circulation results if the slats are open.
Rain protection	When the slats are closed, water is drained to the drainage gutters.
Sun shading system	Depending on the slat angle, direct sunlight from above can be prevented.

Selecting a channel on the WMS Hand-held transmitter plus/comfort

Selecting the channel	WMS plus		Press the channel switch button briefly and select the desired channel.	→	WMS plus		The selected channel lights up red (e.g. 1).
	WMS comfort		Press the product button briefly and select the desired channel.		WMS comfort		The selected channel lights up red (e.g. 1).

Changing the slat position using the WMS Hand-held transmitter plus/comfort

Tilting (closing)		Press the DOWN button briefly .	→		The slats tilt gradually in steps until they are closed. When the lower limit position is reached, the motor stops automatically.
-------------------	--	--	---	--	---

Stopping in intermediate position	 Press the stop button.	 The tilting movement is stopped.
Tilting (opening)	 Press the UP button briefly.	 The slats tilt in steps until they are open (slat angle of 135°). Then the motor stops automatically.

5.3 Operation of awnings (optional extra) with WMS Hand-held transmitter



INFO

The product has an upper and lower limit position at which it stops automatically.

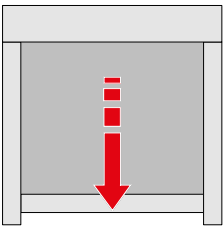
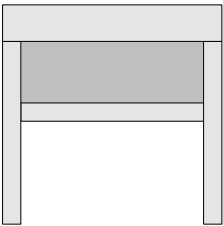
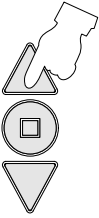
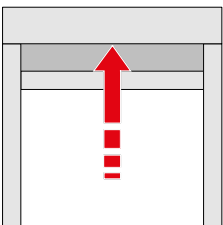
In addition, it can be stopped in any position.

Selecting a channel on the WMS Hand-held transmitter plus/comfort

Selecting the channel	WMS plus	 Press the channel switch button briefly and select the desired channel.		WMS plus	 The selected channel lights up red (e.g. 1).
	WMS comfort	 Press the product button briefly and select the desired channel.		WMS comfort	 The selected channel lights up red (e.g. 1).

Operation

Operation with WMS Hand-held transmitter plus/comfort

Moving to the lower limit position	 Press the DOWN button.	→	 The product moves to the lower limit position and stops automatically.
Stopping in any position	 Press the STOP button (or the button for the opposite direction).	→	 The movement is stopped.
Moving to the upper limit position	 Press the UP button.	→	 The product moves to the upper limit position and stops automatically.

5.4 Operation of the radiant heater with WMS Hand-held transmitter (optional)



CAUTION

Risk of burn injuries!

The radiation range of the radiant heater is a danger zone.

- Maintain the minimum distances/inclination angles.



CAUTION

Risk of burn injuries at the heating surface!

The surface of the product poses a burn hazard while the product is in use and after it has been switched off.

- Do not touch the heating surface until it has cooled down.

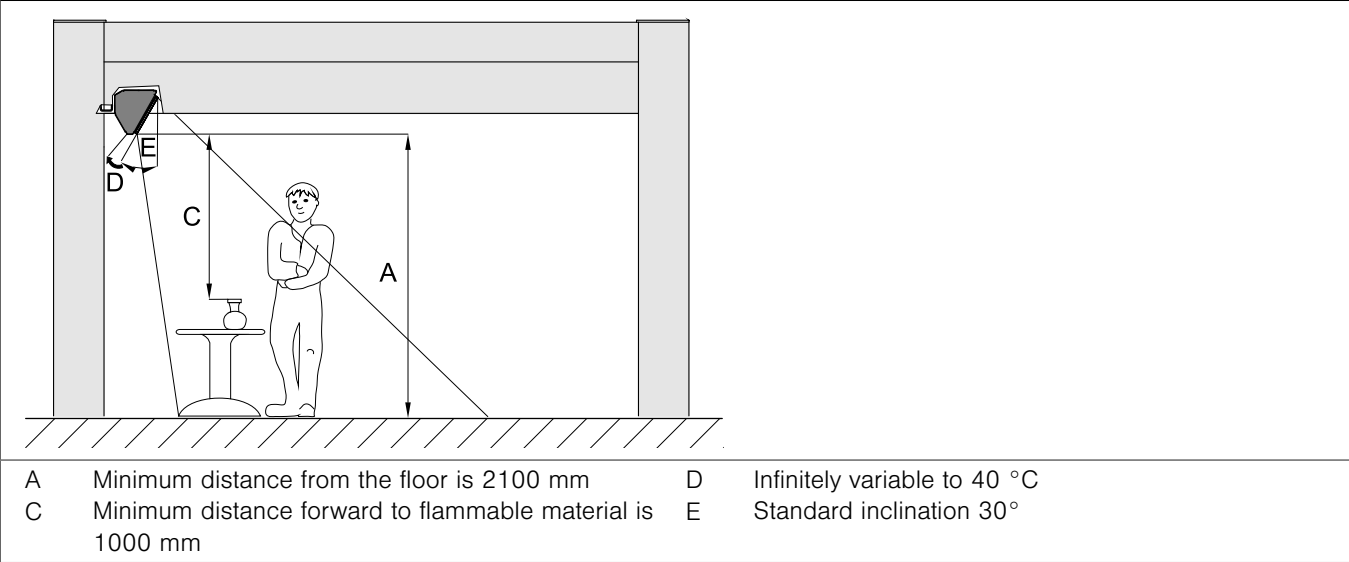


Fig. 5: Minimum distances/inclination angle for Design radiant heater

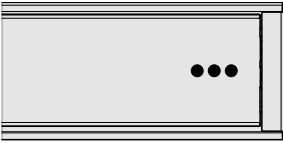
INFO
Soft crackling noises can be heard while the heater is heating and cooling. These are normal operating noises and are not grounds for a complaint.

After the heater is switched on for the first time and after having been in disuse for an extended period, the radiant heater will emit an odour for a short period. This does not restrict use of the radiant heater. To prevent this effect, it is advisable to clean the device to remove dust deposits.

Selecting a channel on the WMS Hand-held transmitter plus/comfort

Selecting the channel	WMS plus		Press the channel switch button briefly and select the desired channel.	➔	WMS plus		The selected channel lights up red (e.g. 1).
	WMS comfort		Press the product button briefly and select the desired channel.		WMS comfort		The selected channel lights up red (e.g. 1).

Radiant heater without dimming function (using the WMS Plug receiver power as an example)

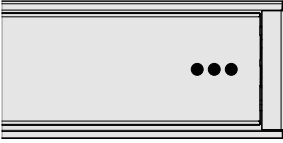
Switching on	 Press the UP button briefly .	→  The radiant heater is switched on. The heating status LEDs light up. The radiant heater begins heating at the maximum level (100%).
Switching off	 Press the DOWN button briefly .	→  The radiant heater is switched off. The heating status LEDs go out.

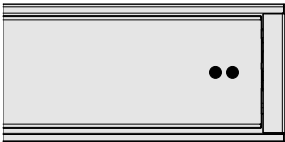
Radiant heater with dimmer function (using the WMS Hand-held transmitter as an example)

 INFO	The WMS dimmer 0-10 V changes the power of the connected radiant heater in 3 dimming levels.			
	OFF/standby	Level 1	Level 2	Level 3
	0 %	33 %	66 %	100 %

Tab. 17: Radiant heater power at each dimming level

The WMS dimmer 0-10 V changes the power of the radiant heater to 0% after 4 h. The 4 hours restart every time the unit is operated. This value can be changed to between 1 and 7 hours on WMS studio pro or homee.

Switch on at dimming level 1	 Press the UP button briefly .	→  The radiant heater is switched on at dimming level 1. The heating status LED lights up.
Switching on at dimming level 3	 Press and hold the UP button.	→  The radiant heater is switched on at dimming level 3. The heating status LEDs light up.

Increasing the dimming level		Press the UP button briefly .	→ 	The dimming level is increased (e.g., from 1 to level 2). The heating status LEDs light up.
		Press the DOWN button briefly .	→ 	The dimming level is decreased (e.g. from 2 to level 1). The heating status LED lights up.
Switching off		Press and hold the DOWN button.	→ 	The radiant heater is set to standby mode. The heating status LED flashes.
		Press the stop button.	→ 	The radiant heater is set to standby mode. The heating status LED flashes.

5.5 Operation of the lighting with the Hand-held transmitter (optional)

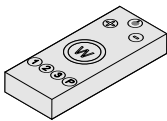
LED strips with WMS Hand-held transmitter

Selecting the channel	WMS plus		Press the channel switch button briefly and select the desired channel.	→	WMS plus	1 ● 2 ○ 3 ○ 4 ○ 5 ○ 6 ○	The selected channel lights up red (e.g. 1).
	WMS comfort		Press the product button briefly and select the desired channel.		WMS comfort	□ □ □ □ 0 1 2 3	The selected channel lights up red (e.g. 1).

Switching on/ dimming ¹	 Press the UP button briefly .	→	 The lighting is switched on or is dimmed up.
Dimming ¹	 Press the DOWN button briefly .	→	 The lighting is switched on or is dimmed down.
Switching off	 Press the STOP button briefly .	→	 The lighting goes out.

1 The lighting is switched on with the brightness value last used.

RGB strips



**INFO**

Operate the RGB strips with the Philips Hue app or a separate RGB hand-held transmitter.
The description of the hand-held transmitter can be found in the instructions accompanying the hand-held transmitter.

5.6 Operating variant: automatic control with WMS Weather station (optional)

**NOTICE**

Product damage due to non-functioning of the control unit!

"Under exceptional conditions such as power failure or system malfunction, the control unit will cease to operate. In these cases, the product cannot be operated using the control and may be exposed to extreme weather conditions, which may result in damage or cause the unit to fall down.

- During your absence, it is recommended to place the product in a safe position and switch the control to manual mode to prevent unintended movements.

**INFO**

The motors used are not intended for continuous operation.

The integrated thermal protection switches the motor off after approx. 4 minutes. The product will be ready for operation again after approx. 10 to 15 minutes.

- Adjust the control unit in such a way that continuous operation of the motor is not possible.
- Follow the operating and installation instructions of the control unit.

**INFO**

If the installation location of the roof system is not at ground level, the WMS Weather station plus with a power supply is **mandatory**. Automatic lowering of the vertical textile shading via the control must be prevented.

Note:

The ice monitoring overrides all other control modes and cannot be overridden manually (safety function). The ice alarm can be reset via WMS WebControl pro without a password (per app and browser). After the end of the safety function, the comfort modes are active again and may trigger a new movement.

	Automatic control ^{*1)}					
	ZIP ^{*2)}			Lamaxa ^{*3)}		
	Limit value	Control mode	Position ZIP	Limit value	Control mode	Position of Lamaxa
Wind	> 13 m/s ^{*4)}	On	Retract	> 13 m/s	On	Tilt the slats horizontally (close)
Rain	-	Off	-	Rain	On ^{*6)}	Tilt the slats horizontally (close)
Ice ^{*5)}	< +4 °C and rain	On	Retract	< +4 °C and rain	On	Tilt the slats horizontally (close)

*1)

Note:

The comfort functions (such as sun control, time switch) must be deactivated in winter. Deactivation can be performed using the hand-held transmitter WMS WebControl pro, app or browser.

Safety functions (wind, rain, ice) must be set as described in the table.

The customer is fully responsible for adhering to the operating conditions specified by WAREMA.

*2)

ZIP = Vertical textile shading (optional)

*3)

Lamaxa = slat roof or fabric roof

*4)

The wind speed limit to be set for the control/weather station must be taken from the wind resistance chapter. The installation location of the wind sensor has an influence on the triggering behaviour of the control/weather station.

*5)

Note:

The ice monitoring overrides all other control modes and cannot be overridden manually.

To prevent freezing of the slats, the slats can be opened slightly in the cold winter months. The adjustment must be made by the qualified specialist.

If the size-dependent snow load is exceeded, the slat roof must be cleared of snow.

In areas with heavy snowfalls, the slat can be positioned vertically (90°) so that snow does not weigh down the construction of the slat roof. The adjustment must be made by the qualified specialist.

*6)

In the winter months (November - April), the control function must be set to **off**.

Switching on and off the comfort control functions with WMS Hand-held transmitter plus



NOTICE

Product damage due to non-functioning of the control unit!

"Under exceptional conditions such as power failure or system malfunction, the control unit will cease to operate. In these cases, the product cannot be operated using the control and may be exposed to extreme weather conditions, which may result in damage or cause the unit to fall down.

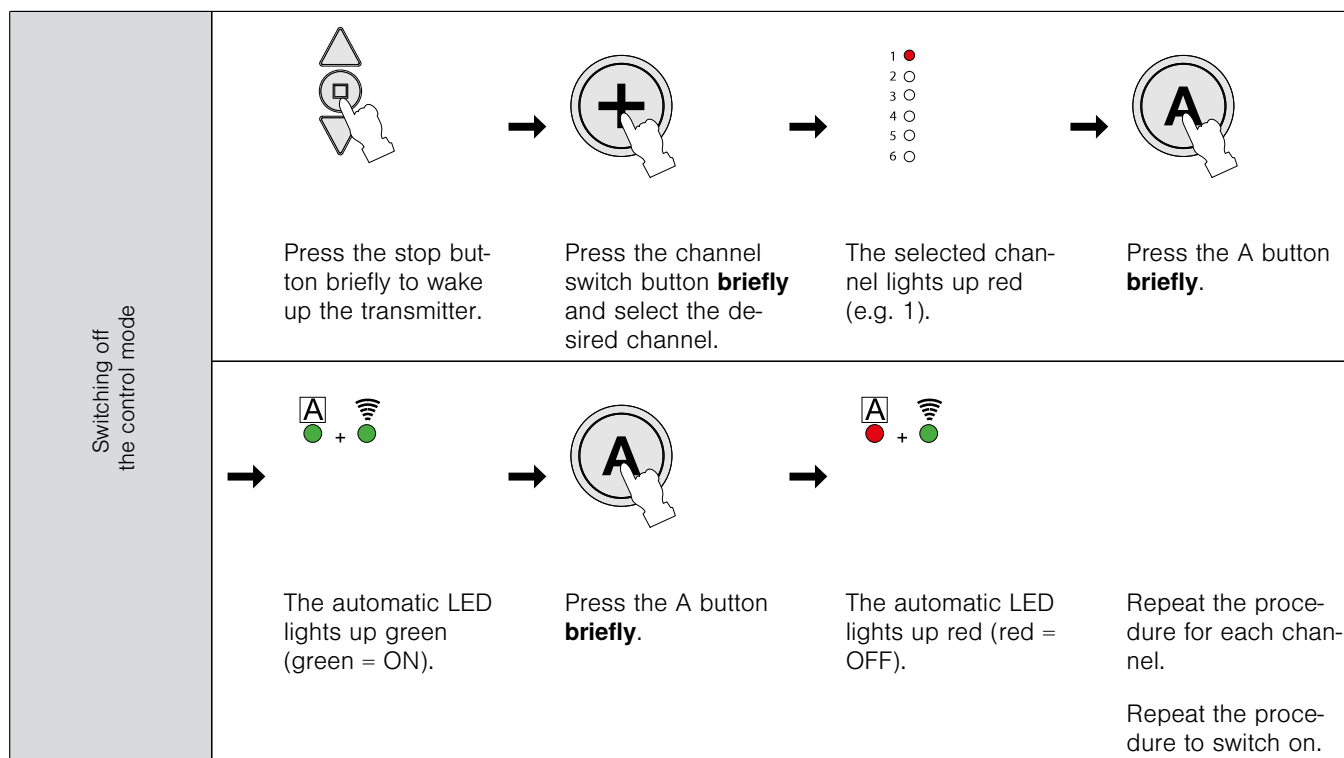
- During your absence, it is recommended to place the product in a safe position and switch the control to manual mode to prevent unintended movements.

Excerpt from the instructions for the WMS Hand-held transmitter A detailed description can be found in the instructions for the hand-held transmitter.



INFO

- ▶ Automatic button  = switches the comfort control functions on and off
- ▶ Automatic LED  = LEDs under the symbol indicate the current state of the control modes (green = ON, red = OFF)
- ▶ The comfort control modes are activated per channel, i.e. each channel must be activated separately.



Switching on and off the comfort control functions with WMS Hand-held transmitter comfort



NOTICE

Product damage due to non-functioning of the control unit!

"Under exceptional conditions such as power failure or system malfunction, the control unit will cease to operate. In these cases, the product cannot be operated using the control and may be exposed to extreme weather conditions, which may result in damage or cause the unit to fall down.

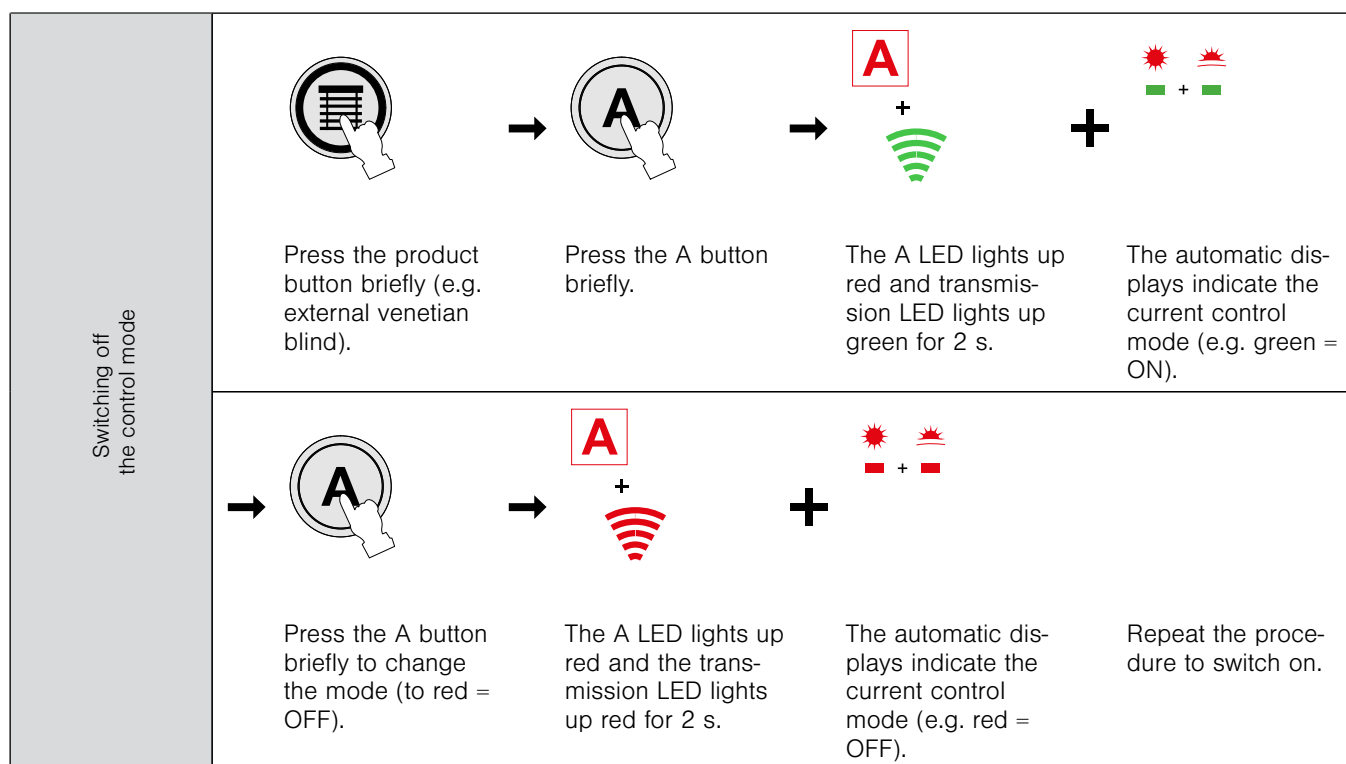
- During your absence, it is recommended to place the product in a safe position and switch the control to manual mode to prevent unintended movements.

Excerpt from the instructions for the WMS Hand-held transmitter A detailed description can be found in the instructions for the hand-held transmitter.



INFO

- ▶ Automatic button = switches the comfort control functions on and off
- ▶ Automatic displays = LEDs under the symbols show the current state of the control modes (green = ON, red = OFF)
- ▶ Transmission LED lights up green for 2 s: control modes in all receivers are switched on
- ▶ Transmission LED lights up red for 2 s: control modes in all receivers are switched off
- ▶ Comfort control modes switched on and off together
- ▶ The selected state of the comfort control modes is transmitted to all receivers saved in the hand-held transmitter.

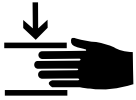


6 Incorrect operation

Accessibility of the operating elements

- To prevent injuries, never let children play with the operating elements of the product, such as the hand-held transmitter or switch.
- Keep the hand-held transmitter out of the reach of children.

Danger of crushing, shearing and entanglement

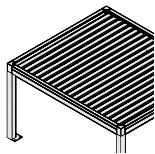


- To prevent crushing, keep people away from the product while it is moving.
- Do not reach between the moving parts while the product is moving. Limbs can get caught between or in the moving parts and may be crushed or severed.
- Products operated by a control unit may start moving at any time and without prior notice. This may result in injuries. Inform people, including children, who may be located in the vicinity of the product about the danger involved with the product in order to eliminate any risk.

Operation of the roof system during a storm



The slats of the product must be closed in good time before bad weather arrives, even if a control is being used.



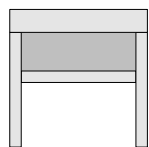
- Close the slats promptly before bad weather arrives.
- Close the slats when the wind speed limit is exceeded.
- All other movements of the product must be prevented while the wind speed limit is reached or exceeded.

Optional extras can influence the loads in wind. For this reason, it is important to also consider malfunctions of the optional extras in wind.

Operation of the lateral textile shading (optional) in a storm



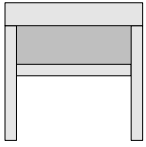
The product must be raised in good time before bad weather arrives, even if a control is normally used. The control triggers a move command for the product if the set limit value is exceeded in order to move it to the protected upper limit position. If strong gusts of wind come up suddenly, the product is exposed to a larger load for which it was not designed for an indefinite period. A strong gust of wind activates the control, but the product is not raised because the motor is stopped by the torque that is produced.



- Raise the product promptly before bad weather arrives.
- Raise the product if the wind speed limit is reached.
- All other movements of the product must be prevented while the wind speed limit is reached or exceeded.



If the installation location of the roof system is on a balcony or a roof terrace, for example, special precautions must be taken for the vertical textile shading regarding the wind to ensure the safety of persons.



- The vertical textile shading must only be operated in conjunction with the WMS Weather station plus with a mains supply.
- The wind sensor must be attached to the roof system.
- The vertical textile shading must be raised before bad weather arrives.
- The vertical textile shading unit must be raised if the wind speed limit is exceeded.
- The vertical textile shading unit must not be lowered automatically using a control.
- In your absence, raise the vertical textile shading.
- Lowering of the vertical textile shading must be interrupted immediately if responsive obstacle detection of the drive is activated during a movement. The product must be raised and is not permitted to be lowered again until the wind settles down.
- If the vertical textile shading was lowered in wind, it must be checked if the zipper of the awning fabric is properly seated in the guide element. If a fault has occurred and the zipper has slipped out, raise the product. After the wind has settled down, lower the product multiple times and check if the fault is still present or not. If the fault is still present despite several attempts to rectify it, contact a specialised retailer to correct the problem. Do not operate the product in the meantime.

Operation of the sliding element (optional) in a storm



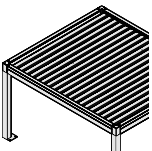
In case of full-side glazing or sliding shutters, the sliding elements must be opened in case of high winds (over 13 m/s).

- In case of full-side glazing or sliding shutters, open the sliding elements at wind speeds of 13 m/s to protect the roof system.
- All other movements of the product must be prevented while the wind speed limit is reached or exceeded.

Operation of the roof system in wet conditions

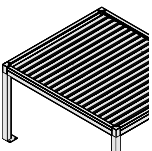


- Close the slats in rain.



Depending on the size of the hail stones, they may slip between the slats if set to a low angle and block tilting of the slats.

- Only operate the product when this is no longer a risk.



Operation of the lateral textile shading (optional) in wet conditions



NOTICE

Deterioration of the awning fabric due to moisture!

Moisture promotes wrinkling and waffling and deteriorates the awning fabric.

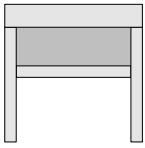
- Lower awnings after it stops raining to dry awning fabric that got wet.
- Weather permitting, only raise the awning if the awning fabric is completely dry.

Incorrect operation



The product must be raised in good time before bad weather arrives, even if a control is normally used.

- Raise the product promptly before bad weather arrives.
- Lower awnings after it stops raining to dry awning fabric that got wet.
- Weather permitting, only raise the awning if the awning fabric is completely dry.



Malfunctions during operation of the roof system in cold weather/winter



NOTICE

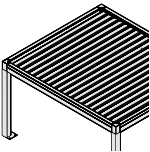
Product damage from incorrect operation in winter!

After exposure to condensation water, rain or snow, the product can freeze up at or below the freezing point and in this case must no longer be operated.

- No operation of the product while it is iced over. The product may be used again after thawing.
- Switch off the automatic control without ice alarm in winter.



- No operation when snow is resting on the closed slats.
- If the slats are closed, the roof must be cleared of snow before the specified snow load is reached (see the chapter "Maximum snow load on the roof system").
- Do not operate a product that has frozen up.
- Switch off the automatic control in winter.



Malfunctions during the operation of the lateral textile shading (optional) in cold weather/winter



NOTICE

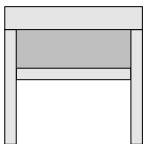
Product damage from incorrect operation in winter!

After exposure to condensation water, rain or snow, the product can freeze up at or below the freezing point and in this case must no longer be operated.

- No operation of the product while it is iced over. The product may be used again after thawing.
- Switch off the automatic control without ice alarm in winter.



- Do not raise or lower the product in snow.
- Do not operate a product that has frozen up.
- Switch off the automatic control in winter.



Debris (such as leaves and foreign objects)



Leaves and other foreign objects can cause malfunctions and create the conditions necessary for microbial activity.

- Leaves and other foreign objects must be removed from the guide grooves of the awning fabric and other product openings.

Cleaning the roof system drainage



INFO

If the drainage gutter is installed without an inclination, it must be inspected and cleaned more frequently.

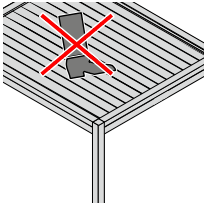
Drainage gutters and drains may clog with leaves, moss and dirt. This may cause the drainage gutters to overflow when it rains. As a rule, the product should be cleaned twice a year (in spring and in autumn). If there are trees close by, more frequent cleaning may be necessary.

Depending on the location, leaves must be removed in regular and short intervals.



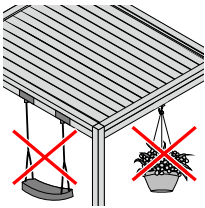
- Drainage systems with an insufficient gradient must be cleaned more often.

Stepping on the roof system



- Do not step on the product.

Additional load on the roof system



- Do not attach objects to the product (such as hanging flower pots, swings, hammocks, etc.).

7 Service

Use of the product in a manner that is not intended or failure to care for and check the product improperly render the product warranty from WAREMA void.



INFO

To prevent personal injury or property damage when performing product maintenance or working in the immediate vicinity of the product, e.g. when cleaning windows, product movement must be prevented.

A monitored overriding locking mechanism must eliminate all possible operation.



WARNING

Risk of injury from operation of the product when it is out of sight!



During cleaning or maintenance, the product may move unexpectedly and startle individuals, potentially causing accidents such as falls from ladders.

- De-energise the product and secure it against being switched on again.



CAUTION

Risk of injury from falling off the climbing aid!

Climbing aids (e. g. ladders, scaffolding, etc.) may tip over if improperly erected.

- Position climbing aids on level and firm ground.



DANGER

Danger of breaking through slats!



When work is performed on the outside of slat roofs, there is a danger of breaking through the slats. Injuries may result from falling.

- Do not step onto the slat roof.



CAUTION

Risk of burn injuries at the heating surface!

The surface of the product poses a burn hazard while the product is in use and after it has been switched off.

- Do not touch the heating surface until it has cooled down.

7.1 Cleaning, care and inspection activities



INFO

The activities described in this section can be performed by the operator. It is important to abide by the interval of one year.

Need for cleaning and care

Environmental and ambient influences may cause a film of dirt to form on the surfaces of the product.

Due to the effects of solar radiation, this soiling can become permanently embedded or scorched onto the surface coating, potentially impairing the functionality and reducing the value of the product.

To extend the service life of the product, its surfaces should be cleaned regularly or **at least once a year**.

In certain ambient conditions, such as those found near industrial zones and close to heavy road traffic, the sea (salty air) or swimming pools (air with chlorine), more frequent cleaning may help to protect against surface damage caused by these conditions and against the heightened risk of corrosion.

Purpose of cleaning and care

The benefit provided by regular and proper cleaning and care is that the value of the product is preserved and its service life extended. The purpose of repeatedly cleaning the product is to preserve the well-maintained appearance of the product and to maintain proper functioning.

Results of cleaning



NOTICE

Product damage from incorrect cleaning!

Incorrect cleaning procedures may result in damage to the product or product parts. Surfaces and textures may be permanently altered (e.g. scratches).

- Do not use high pressure washers, steam washers, abrasive sponges, abrasive cleansers, or aggressive cleaning agents or solvents such as alcohol or naphtha.
- Do not use chlorinated cleaning agents on or near the product.

Additionally observe for vertical textile shading (optional)

- Acidic or oxidizing cleaning agents may be used with all fabric types except WAREMA SecuTex fabric A2.
- Unlike other fabric types, WAREMA SecuTex fabric A2 can be cleaned with cleaning agents containing alcohol, which is recommended. Other types of cleaning agents destroy the aluminium vapour coating.
- Do not wash the awning fabric in a washing machine or other similar equipment.
- When cleaning, do not rub the awning fabric excessively with a hard brush/sponge or other hard objects. This may damage the surface.
- Do not raise the awning fabric if it is damp. This may cause moulding or spotting.

Additionally observe for sliding frames (optional)

- Do not use water with cleaning agent in case of wings with a wood filling. The cleaning agent can cause a rough surface.

The cleaning instructions are non-binding recommendations from which no claims can be derived. The achieved cleaning results may differ in individual cases.

The effort required for cleaning and the cleaning results themselves depend on the degree of soiling. Surfaces that have been exposed to the influences of weather over many years but have not been cleaned are difficult, if not impossible, to restore to their original condition.

General information on cleaning



Tip/recommendation



To properly clean the surfaces, use a suitable cleaning glove together with an appropriate cleaning agent concentrate for sun shading products.

Preparing for cleaning

- When cleaning the product, protect adjacent areas against soiling.

Aids required for cleaning:

General information

- ▶ Whisk broom/brush (soft bristles)
- ▶ Soft brush/duster (soft bristles)
- ▶ Vacuum cleaner (optional)
- ▶ Bucket (recommendation: use low-lime water)
- ▶ WAREMA cleaning agent for sun shading products (do not use on wooden products)

Service

- ▶ Cleaning agent for sun shading systems (do not use on wooden products) (recommendation: WAREMA sun shading system cleaning agent)
- ▶ WAREMA cleaning glove
- ▶ Cotton cloth

Additionally for awning fabric (optional)

- ▶ Textile cleaning agent for sun shading systems
- ▶ Fabric impregnation of sun shading systems
- ▶ Rubber eraser (non-marking)
- ▶ Adhesive tape (to pick up soiling with the adhesive tape)
- ▶ Mild detergent



INFO

Clean step-by-step from the rear to the front or from the top to the bottom.

Components to be cleaned in a roof system

- ▶ Beams
- ▶ Pole
- ▶ Drainage gutter
- ▶ Slats

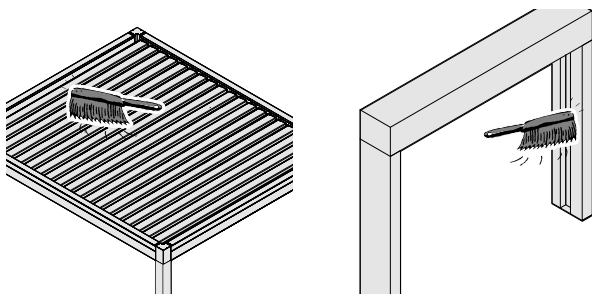
Components to be cleaned in a vertical textile shading (optional)

- ▶ Box/cover panel
- ▶ Guide elements
- ▶ Awning fabric (as needed)
- ▶ End rail

Components to be cleaned in sliding elements (optional)

- ▶ Wing (note filling type)
- ▶ Lower running rail

Performing preliminary cleaning



- Remove any loose soiling from the entire product (e.g. dust, leaves). A whisk broom/broom or vacuum cleaner can be used for this.
- Remove any loose soiling from the awning fabric with a soft brush using short brush strokes.
- Do not forget the guide grooves and other openings on the product.

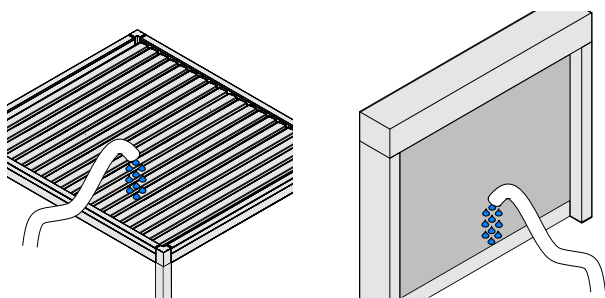


WARNING

Risk of injury from electric shock on a product with live components!

If live components (e.g. motors) come into contact with water, a short circuit or voltage flashover may occur.

- Keep water away from live parts.



- Before cleaning with water, remove any objects that must not get wet.
- If the product is installed outside (outdoors), you can also rinse off loose dirt with clear water at a low water pressure.

Performing detailed cleaning

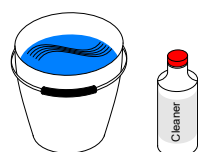


NOTICE

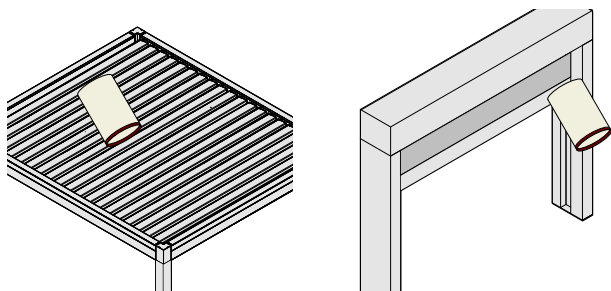
Product damage from incorrect cleaning!

Incorrect cleaning procedures may result in damage to the product or product parts. Surfaces and textures may be permanently altered (e.g. scratches).

- Do not use water with cleaning agent in case of wings with a wood filling. The cleaning agent can cause a rough surface.



- Prepare a bucket with water and cleaning agent for sun shading systems. Note the dosing quantities specified by the cleaning agent manufacturer.
- Wet the cleaning glove.



- Clean the product components. Repeat the procedure as necessary.
- Clean the guide grooves and other openings on the product to eliminate the possibility of malfunctions, e.g. due to leaves.
- Clean the drainage gutters and drainage pipes to remove any blockages, e.g. due to leaves.

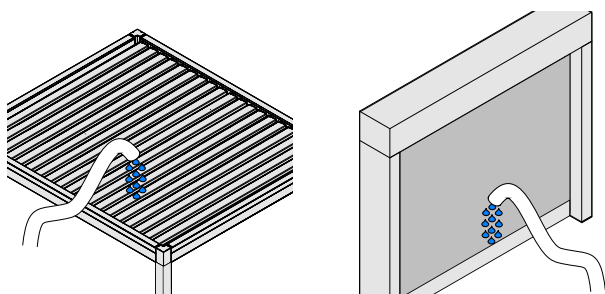


WARNING

Risk of injury from electric shock on a product with live components!

If live components (e.g. motors) come into contact with water, a short circuit or voltage flashover may occur.

- Keep water away from live parts.



- Remove the detached soiling before drying.

Cleaning the awning fabric without water (optional)

In some cases, smaller spots and isolated dirty streaks can be cleaned without water.

- Dab off/strip away soiling with adhesive tape.
- Remove soiling with a non-marking rubber eraser (by applying light pressure).
- Remove soiling with a vacuum cleaner if necessary (on the low setting).

Wet cleaning the awning fabric (optional)

Soiling or crusting spread over a large area must only be removed when wet, in order to keep the dirt from being rubbed into the fibres and spaces between the fibres.

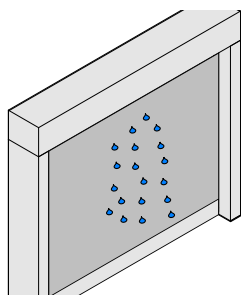
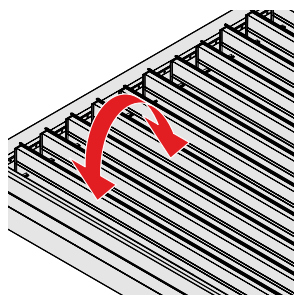
Perform the work at an outside temperature of at least +5 °C and in dry weather.

- Wet the awning fabric with clear water at low water pressure.

5 - 10% mild detergent

- Add 5 - 10% mild detergent to lukewarm water (max. 40 °C). Build up a lather by squeezing out a sponge several times.
- Apply the lather to the soiled locations and let it soak in for approx. 15 - 20 minutes.
- Rinse the cleaned areas with clean water at low water pressure.
- Repeat the procedure as necessary.

Drying the product



- Move the product to the lower limit position.
- Open and close the slats to allow the water to drip off.
- Leave awning fabric that has become wet to air-dry fully.



INFO

To prevent scale marks from forming around dried water droplets, the surfaces of the product can be rubbed dry using a microfibre or cotton cloth.

Re-impregnating the awning fabric (optional)



INFO

The cleaning agent and fabric impregnation have opposing effects. By thoroughly rinsing off the cleaning agent with clear water, you can preserve the water-repellent property of the awning fabric for a longer time.

Every time the fabric is cleaned, the original protective function of the awning fabric is slightly diminished.

Depending on the fabric type, a reimpregnation can renew the water-repellent effect and is therefore recommended.

Only use impregnating agents that are suitable for specific awning fabric.

Reimpregnation cannot restore the awning fabric to its original new condition.

Only apply the impregnation agent on a completely dry awning fabric.

Cleaning the drainage system



INFO

If the drainage gutter is installed without an inclination, it must be inspected and cleaned more frequently.

Drainage gutters and drains may clog with leaves, moss and dirt. This may cause the drainage gutters to overflow when it rains. As a rule, the product should be cleaned twice a year (in spring and in autumn). If there are trees close by, more frequent cleaning may be necessary.

Depending on the location, leaves must be removed in regular and short intervals.



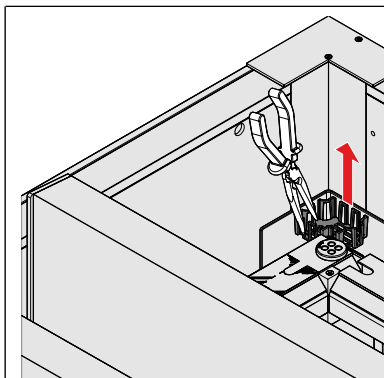
- Clear leaves and soiling out of drainage gutters, the downpipes and the outlets.
- Always transport the dirt away from the downpipe before it is removed.

**NOTICE**

Product damage from incorrect installation of the connection box inspection cover!

If a protection profile is present, the inspection cover of the connection box must be removed to dismantle the leaf guard. The subsequent correct installation of the connection box inspection cover is crucial to prevent water ingress and protect the electronic components.

- Work on the connection box must be undertaken by a qualified specialist.

**INFO**

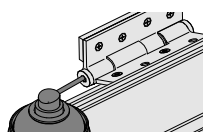
Tools for cleaning the leaf guard:

- Fine brush/long tweezers

Tools for removing the leaf guard:

- Needle-nosed pliers/long tweezers

- Position the slats at 90° (vertical). The protection profile, if present, is pressed downward. The leaf guard can now be reached.
- Remove the soiling on the leaf guard using a fine brush or long tweezers.
- Remove soiling from the drainage.
- The leaf guard can optionally be pulled out upward using a tool such as needle-nosed pliers and cleaned with a fine brush.
- Reinsert the cleaned leaf guard.

Oiling the hinge of the protection profile (optional)**INFO**

After a certain period of use, dust can collect in the hinge and the metal can wear down due to frequent operation of the protection profile. Dust and moisture can clog the hinge.

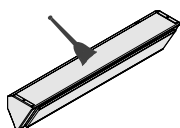
To prevent stiffness and noises, the hinge must be oiled at least once a year (e. g., penetrating oil).

Cleaning the radiant heater (optional)**CAUTION**

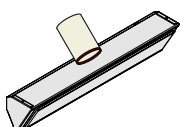
Risk of burn injuries at the heating surface!

The surface of the product poses a burn hazard while the product is in use and after it has been switched off.

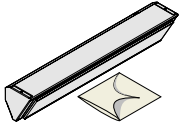
- Do not touch the heating surface until it has cooled down.



- Remove any loose debris from the entire product (e.g. dust, leaves). A soft brush or duster (with soft bristles) can be used for this. Alternatively, a damp microfibre cloth or a damp sponge can be used.



- Clean the product components made of metal.



- Clean the heating elements with a microfibre cloth.

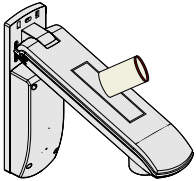
Cleaning the weather station (optional)



INFO

The weather station must be cleaned every three months to ensure the measured values are accurate and ensure operating safety and reliability.

In addition, note the separate instructions for the weather station.



- Remove soiling from the transparent cover using a damp cleaning glove.

Inspection activities/examine the product during cleaning



INFO

Wear and damage to the product, the associated operating elements and the mounting substructure can impair the function of the product and lead to further damage.

If visual inspection of the product reveals irregularities, proceed as follows.

- Take the product out of service.
- Have any damage repaired by a qualified specialist.
- Check the product regularly for visible wear and damage and to ensure it is functioning properly (visual check).
- Check that the fixing of the supporting elements (e.g. consoles) is firmly connected to the structure and/or the floor (visual check).
- Check that the fixing points are firmly connected (visual check).
- Check the mounting substructure for damage (visual check).
- Check the lines for visible damage (visual check).
- Remove all foreign objects and any soiling from the product components and the openings.
- Check the charge status of the batteries of the hand-held radio transmitters, and replace if necessary.
- Check the drainage gutters, downpipes and outlets for clogging and clean.

Additionally for the weather station (optional)

- Check that the fixing screws are seated properly and tighten if necessary. Repeated strong wind loads can loosen the screws and change the orientation of the weather station. Incorrect measuring values can cause delays in the retraction or raising of the unit.



INFO

To ensure proper functioning and your continued enjoyment of the product, WAREMA recommends having it professionally maintained once a year.

Information on this can be obtained from your WAREMA contracting partner or at www.warema.de/service.

7.2 Maintenance



The maintenance tasks must only be performed by a qualified specialist. We recommend signing a service agreement.

Service is a preventative maintenance and contributes to keeping a product functional as long as possible.

It is recommended to service the product at least once a year.



CAUTION

Risk of injury from inadequate product knowledge!

Familiarity with the functions and design of the product is required by the user to ensure that it can be worked on safely. Insufficient product knowledge can result in injuries and product damage.

- Have service tasks performed by a qualified specialist.

- Check the product for visible wear and damage. If necessary, make a recommendation to the owner.
- Check that the bearing elements (e.g. consoles, guide elements) are firmly seated. If necessary, make a recommendation to the owner.
- Perform a functional check, and inspect the limit positions of the product. Adjust the limit positions if necessary (see the installation instructions and/or setting instructions).

7.3 Repair/spare parts and wear parts



CAUTION

Personal injury resulting from inappropriate repairs!

Familiarity with the functions and design of the product is required by the user to ensure that it can be worked on safely. Insufficient product knowledge can result in dangerous situations.

- The product should only be repaired by a qualified specialist.



INFO

Removal of the electronic components must be performed by a certified electrician in accordance with the electrical installation regulations published by the Association of German Electrical Engineers (VDE 0100) or the standards and regulations of the country in which the product is installed.



INFO

To ensure that your product continues to function properly, and to prevent the loss of its approved status, only use original spare parts.

To order, contact your WAREMA dealer.

Wear parts
Battery of the hand-held transmitter

7.4 What you should know about awning fabrics (optional)

Technical fabrics may exhibit certain characteristics due to production and sizing that may appear to the user to be "faults".

The optical irregularities described below have no influence on the usability and durability of the awning fabric [excerpt from the Guideline for the Evaluation of Preamsembled Awning Fabrics – published by the ITRS Industrieverband Technische Textilien Rollladen - Sonnenschutz e.V.].

Wrinkles and folding lines

Wrinkles can be produced when the fabric is assembled (cut and sewn) and when it is folded. Surface effects (shifts in pigmentation) can occur in the wrinkles. When viewed against the light, these resemble dirty marks (especially on light-coloured fabric).

Chalk lines

Chalk and writing effects are light stripes of the impregnating agent on the fabric surface. They result from handling the fabric during production and assembly of the units. Although the fabric is handled with special care, these effects cannot be fully avoided in dark fabrics.

Waviness in the seams and fabric panels

As the fabric is wound onto and off of the shaft, it is tightened more strongly at the hems, seams and panels than between the seams. The resulting tension in the fabric can lead to waviness (e.g. waffle or fishbone patterns) that "digs" into the fabric. The waviness is visible when the unit is open, but does not represent a fault.

Waffling

Because of the production method, so-called waffling may form under certain weather conditions and in certain fabric sizes. This effect is more visible in unfavourable lighting conditions. The formation of waffling is accelerated and enhanced through wetness (humidity, rain). If a fabric that has been "softened" in this way is retracted, waffling and wrinkles can become particularly pronounced.

Weave flaws

Spinning of the yarns as well as warping in the weaving mill and the weaving process itself is executed under tension. The yarn may break. This will lead to knots. Irregular thread thicknesses are seen as light areas or burls in the fabric.

8 Dismantling/disposal

Dismantling

**CAUTION**

Risk of injury due to incorrect dismantling!

A lack of appropriate knowledge when dismantling the product can lead to injuries and damage to the adjacent parts.

- Have the units dismantled by a qualified specialist.
- Ask WAREMA for any missing documents before dismantling the product.

**WARNING**

Electric shock!



When working in the immediate vicinity of potentially live parts, such as electrical lines, contact may result in an electric shock.

- De-energise the product and secure it against being switched on again.

**INFO**

The product contains integrated electrical or electronic components, such as a motor, control, LED strips and lines. These components must be removed and disposed of separately from the product as described below ([Disposal](#)).

Disposal

If the product can no longer be used, dispose of it in accordance with applicable legal requirements.



Components with this symbol must not be disposed of with household waste.

Products marked with the symbol must be handled as follows according to legal regulations:

- The electric and electronic components removed from the product and other electrical devices belonging to the product must be disposed of separately from unsorted household waste.
- Used batteries that are not enclosed in the used device and lamps that can be removed from the used device without destroying it are to be disposed of separately.
- Distributors of electric devices or disposal operations are required to take back the devices at no charge.
- Deletion of personal data contained in the electric device before disposal is the responsibility of the owner/operator.

9 Troubleshooting



INFO

- Problems that are listed below without reference to a qualified specialist or certified electrician may be rectified by yourself without involving these persons.
- All other problems listed absolutely must be handled by a qualified specialist or certified electrician.

Fault: The motor is not functioning.			
	Cause	Remedy	Note
	The thermal protection switch of the motor has triggered.	Wait 10 to 15 minutes and then try again.	If the motor is operated at frequent intervals, the thermal protection switch on the motor switches it off to prevent it from overheating. The motor will be ready to operate again after it has cooled down. This is not a fault.
	A higher-level control command has been issued.	Wait for the on/off delay and then try again.	
	No voltage is applied.	Check the power supply fuse.	Have the check carried out by a certified electrician.
	The motor is faulty.	Replace the motor.	Have the motor replaced by a specialist firm.
	The hand-held transmitter is located outside of the radio range of the drive.	Change your location and operate the unit again.	The transmission LED  on the hand-held transmitter lights up green and then red during operation.
	The battery of the hand-held transmitter is depleted.	Change the battery.	

Fault: The product does not move to the required limit position.			
	Cause	Remedy	Note
	The motor limit positions are incorrect.	Readjust the motor.	Have the adjustment carried out by a specialist firm.
	Changes in the product over the course of its lifecycle. These changes are in line with this type of technology.	Readjust the motor.	Have the product adjusted by a qualified specialist.
	The hand-held transmitter is located outside of the radio range of the drive.	Change your location and operate the unit again.	The transmission LED  on the hand-held transmitter lights up green and then red during operation.
	The battery of the hand-held transmitter is depleted.	Change the battery.	

Fault: When operated, the product does not move to the desired lower limit position but switches off beforehand.			
	Cause	Remedy	Note
	There is an obstacle along the path of movement.	Remove the obstacle and try again.	
	Excessive wind load existed during the movement to the lower limit position.	If the wind load drops, the product moves to the set limit position when a move command is issued again.	

Malfunction: The product stops and then briefly moves in the opposite direction.			
	Cause	Remedy	Note
	A mechanical blockage has occurred.	Eliminate the blockage.	The motor installed in the product features an "obstacle and blockage detection" function. Its behaviour is in line with this functionality.

Fault: The drainage system overflows or water does not drain away.			
	Cause	Remedy	Note
	There is dirt in the drainage gutter.	Remove the soiling.	
	There is dirt in the downpipe.	Remove the soiling.	
	The rain event is heavier than tested by WAREMA (see Page 9).	A measure to eliminate this does not exist. Regular cleaning of the drainage system can reduce the risk but cannot eliminate it entirely.	The drainage system is designed for average rain events. If the water volume is exceeded, the drainage system may overflow. This is not considered a fault.

Additionally for WMS Hand-held transmitter

Excerpt from the instructions for the WMS Hand-held transmitter

Fault: The transmission LED on the hand-held transmitter lights up red. Only the second or third try may be successful.			
	Cause	Remedy	Note
	The distance to the receiver is too large.	Reduce the distance to the receiver.	
	The unit is shielded by metal objects or reinforced concrete.	Reduce the distance to the receiver.	

Fault: The transmission LED on the hand-held transmitter lights up yellow or no display exists.			
	Cause	Remedy	Note
	The batteries are depleted.	Change the batteries.	

Additionally for the weather station (optional)

Excerpt from the weather station instructions

Troubleshooting

Fault: When a button is pressed on the weather station, no LED lights up.

	Cause	Remedy	Note
	No voltage is applied.	Check the power supply fuse.	Have the check carried out by a certified electrician.

Fault: When the hand-held transmitter is operated, the product is only extended/lowered briefly and is then retracted/raised again.

	Cause	Remedy	Note
	A wind alarm was triggered.	Wait until the wind alarm is cleared. Then repeat the move command.	

Fault: The product is raised/retracted for no identifiable reason.

	Cause	Remedy	Note
	Substances on the sensor surface of the precipitation sensor (e.g. bird droppings, splash water) are triggering the move command.	Clean the sensor surface (see Page 42).	
	The operating voltage of the weather station failed. The sun shading system is raised to the upper limit position for safety reasons.	Check the power supply fuse.	
	The communication between the weather station and the product is faulty (e.g. due to an external transmitter). The sun shading system is raised to the upper limit position for safety reasons.	Switch off the external transmitter.	

Additionally for the radiant heater (optional)

Fault: The radiant heater is not generating heat.

	Cause	Remedy	Note
	The radiant heater is faulty.	Change the radiant heater.	Have the motor replaced by a specialist firm.
	The radiant heater is switched off.	Switch on the radiant heater via the hand-held transmitter.	
	The in-line circuit breaker or earth leakage circuit breaker was triggered.	Check the in-line circuit breaker. Ensure that no further devices with a high current draw are connected to the in-line circuit breaker.	Have the check carried out by a certified electrician.

Fault: Odour during commissioning			
	Cause	Remedy	Note
	Oil or dust that remained on the product during the manufacturing process.	No action necessary. This will stop shortly.	

Fault: Odour shortly after the product is switched on.			
	Cause	Remedy	Note
	The radiant heater becomes hot.	Normal process. This will stop shortly.	

Fault: Odour after extended periods of disuse.			
	Cause	Remedy	Note
	Dirt and dust that may have collected on the radiant heater.	Switch off the radiant heater and let it cool down. Then clean the radiant heater.	

Declaration of conformity

10 Declaration of conformity

Excerpt from the declaration of conformity; the full document is available at www.warema.de/ce.

Excerpt from the declaration of conformity for the roof system



ID code/KE no.: warema_KE-4000293

The product: Lamaxa slat roof
Type: – L60
Purpose: Patio roof
When used as intended, meets the basic requirements in the following EU directives and harmonised standards.

Machinery Directive 2006/42/EC EN 13561
EN 60335-2-97

RoHS Directive 2011/65/EU
EMC Directive 2014/30/EU
Used for motor drives without an integrated radio receiver.

Radio Equipment Directive 2014/53/EU
Use for motor drives with an integrated radio receiver or for WAREMA components with an integrated radio receiver.

Manufacturer: **WAREMA Renkhoff SE**
Hans-Wilhelm-Renkhoff-Str. 2
97828 Marktheidenfeld
Germany

Excerpt from the declaration of conformity for vertical textile shading (optional)



ID code/KE no.: warema_KE-4000309

The product: WAREMA integrated awning
Type: – Integrated awning with easyZIP guidance
Purpose: External textile sun shading system
When used as intended, meets the basic requirements in the following EU directives and harmonised standards.

Machinery Directive 2006/42/EC EN 13561
EN 60335-2-97

RoHS Directive 2011/65/EU
EMC Directive 2014/30/EU
Used for motor drives without an integrated radio receiver.

Radio Equipment Directive 2014/53/EU
Use for motor drives with an integrated radio receiver or for WAREMA components with an integrated radio receiver.

Manufacturer: **WAREMA Renkhoff SE**
Hans-Wilhelm-Renkhoff-Str. 2
97828 Marktheidenfeld
Germany