



# LAMILUX Glass Skylight FE for ventilation

0°, 3°, Pyramid, Hipped and FE round - Instruction manual

USA/Canada

# CONTENTS

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<b>1. General Information</b>	<b>4 - 7</b>
1.1 Information on this instruction manual	
1.2 Instructions for use	
1.3 Symbol key	
1.4 Warnings	
1.5 Limitations of liability	
1.6 Copyright protection	
1.7 Spare Parts	
1.8 Customer service	
1.9 Manufacturer's address	
<b>2. Safety</b>	<b>8 - 13</b>
2.1 General	
2.2 Responsibility during installation and operation	
2.3 Personell requirements	
2.3.1 Personell qualifications	
2.3.2 Unauthorised persons	
2.3.3 Briefing	
2.4 Intended use	
2.5 Special hazards	
2.5.1 Electrical system	
2.5.2 Mechanical system	
2.6 Risk of falling	
2.7 Personal protective equipment	
2.8 Safety devices	
2.9 Signage on the flat roof window	
<b>3. Technical Data</b>	<b>14</b>
3.1 Data sheet	
3.2 Dimension sheet	
3.3 Type plate	
<b>4. Transport, Installation and Connection</b>	<b>15 - 20</b>
4.1 Safety	
4.2 Transport	
4.2.1 Transport inspection	

4.2.2 Packaging/storage	
4.2.3 Transport options	
4.3 Installation	
4.3.1 Preparation	
4.3.2 Installation	
4.3.3 Connection	
<b>5. Description</b>	<b>20</b>
5.1 Description of Functions	
<b>6. Operation</b>	<b>21 - 22</b>
6.1 Safety	
6.2 Commissioning	
6.3 Ventilation mode	
<b>7. Servicing</b>	<b>23 - 26</b>
7.1 Safety	
7.2 Maintenance	
7.3 Repairs	
7.4 Cleaning	
<b>8. Troubleshooting</b>	<b>27 - 28</b>
8.1 Safety	
8.2 Malfunction and troubleshooting	
<b>9. Dismantling and Disposal</b>	<b>28 - 29</b>
9.1 Safety	
9.2 Disassembly	
9.3 Disposal	

# 1. GENERAL INFORMATION

## 1.1 Information on this instruction manual

This instruction manual enables the safe and efficient handling of the "LAMILUX Glass Skylight FE for ventilation", hereinafter referred to as flat roof window. This includes the FE0°, FE3°, FP, FW and FE Circular variations.

The instruction manual is an integral part of the flat roof window and must be kept in the immediate vicinity of the flat roof window and accessible to the personnel/operator at all times. The personnel/operator must have thoroughly read and understood this instruction manual before beginning any work.

All safety and handling instructions in this instruction manual must be followed in order to ensure safe work.

The local accident prevention regulations and general safety provisions for the flat roof window's area of use also apply.

Illustrations in this instruction manual are for basic understanding and may deviate from the actual design of the flat roof window.

## 1.2 Instructions for use

The pages of the instruction manual are numbered consecutively.

To help you find a section more quickly, a list of contents is provided behind the cover sheet of the instruction manual.







If the instruction manual contains basic or more detailed information on a topic elsewhere, the user of the instruction manual is referred to this by cross-references to this information. All illustrations and drawings in this instruction manual are for general illustration purposes and are not necessarily

to scale for better presentation of the facts. They may differ slightly from the actual design of the flat roof window.

## 1.3 Symbol key

Warnings in this instruction manual are additionally marked with warning symbols.

The following warning symbols are used in this instruction manual:

Symbols	Significance
	General warning
	Danger from electric power
	Danger from floating loads
	Risk of falling
	Risk of electric shock
	Risk of environmental pollution


Symbols	Significance
	Danger of crushing
	Danger of pinching
	Do not enter! Do not climb on!
	Read the instruction
	Information text...

#### 1.4 Warnings

The warnings used in this instruction manual are introduced by signal words which express the level of danger.

The warning symbol also indicates the type of danger.

The following warnings are used in this instruction manual:

	<b>⚠ DANGER</b>
	<b>Danger of life!</b> Consequences of non-compliance ... >> Instructions on prevention

A warning of this danger level denotes an impending hazardous situation.

If the hazardous situation is not avoided, it will cause death or severe injuries.

Follow the instructions in this warning to avoid the


risk of death or severe personal injury.

	<b>⚠ WARNING</b>
	<b>Risk of injury!</b> Consequences of non-compliance ... >> Instructions on prevention

A warning of this danger level denotes a potential dangerous situation.

If the hazardous situation is not avoided, it will cause death or severe injuries.


Follow the instructions in this warning to avoid the potential risk of death or severe personal injury or severe personal injury.

	<b>⚠ CAUTION</b>
	<b>Personal injury from ...</b> Consequences of non-compliance ... >> Instructions on prevention

A warning of this danger level denotes a potential dangerous situation.

If the hazardous situation is not avoided, it will cause slight to moderate injuries.

Follow the instruction in this warning to avoid the risk of personal injury.

	<b>NOTICE</b>
	<b>Property damage from ...</b> Consequences of non-compliance ... >> Instructions on prevention

A warning of this danger level denotes potential property damage.

This situation may lead to property damage if not prevented.

Follow the instructions in this warning to avoid damage to property.

SAFETY INSTRUCTIONS	
<b>i</b>	Information text ...

A note indicates additional information that is important for further work, or facilitates the work step described.

### 1.5 Limitations of liability

All information and instructions in this instruction manual have been compiled in accordance with current standards and regulations, best available technology and our many years of knowledge and experience.

We reserve the right to make technical changes in the course of further development of the flat roof windows described in this instruction manual. No claims may be asserted based on specifications, illustrations and descriptions from this instruction manual.

The manufacturer accepts no liability for damage and operational disruptions due to:

Failure to follow this instruction manual,

- Improper use,
- Use of untrained or insufficiently trained personnel,
- Use of impermissible operating media,
- Faulty connection,
- Previous work which was not part of the scope of delivery or services,
- Failure to use original replacement parts and accessory parts,
- technical changes and conversions if they were not agreed with with LAMILUX Heinrich Strunz GmbH,
- Failure to conduct the specified servicing work,
- Carrying out welding work on the flat roof window.

LAMILUX Heinrich Strunz GmbH assumes responsibility for any errors or omissions on our part in the scope of the warranty obligations entered into in the contract. Further claims are excluded. Claims to damage compensation, for any legal reason whatsoever, are excluded.

SAFETY INSTRUCTIONS	
<b>i</b>	<p>The operator of the LAMILUX Glass Skylight FE is recommended to conclude a maintenance contract with LAMILUX Heinrich Strunz GmbH.</p> <p>This will ensure that the flat roof window is regularly maintained by our service personnel and that the required replacement and wear parts will be available without long delivery periods.</p>

### 1.6 Copyright protection


All documents are protected under the German Copyright Act (Urheberrechtsgesetz).

Transfer and reproduction of documents (including in excerpt) and use of their content are not permitted without our express consent. Infringements are punishable and will result in damage compensation obligations.

We reserve all rights to exercise commercial property rights.

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## 1.7 Spare Parts

<b>⚠ WARNING</b>	
	<p><b>Risk of injury!</b></p> <p>Incorrect or faulty replacement parts can cause damage, malfunctions or total machine failure, and jeopardise safety.</p> <p>&gt;&gt; Only use original replacement parts from the manufacturer.</p>

## 1.8 Customer service

Should you have any technical questions about the LAMILUX Glass Skylight FE, please contact the customer service department of LAMILUX Heinrich Strunz GmbH.

Please include the following specifications when doing so:

- Glass Skylight FE
- Year of manufacture
- Product no.

The necessary specifications can be found on the type plate of the LAMILUX Glass Skylight FE.

## 1.9 Manufacturer's address

LAMILUX Heinrich Strunz GmbH  
Zehstraße 2  
95111 Rehau

Postfach 1540

Tel.: +49 (0) 9283 / 595-0

Fax.: +49 (0) 9283 / 595-290

Email: [information@lamilux.de](mailto:information@lamilux.de)


[www.lamilux.de](http://www.lamilux.de)

## 2. SAFETY

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### 2.1 General

This chapter provides important information on all safety aspects for optimal protection from hazards during installation as well as on safe and trouble-free operation.

<b>⚠ WARNING</b>	
	<p><b>Failure to follow the safety instructions poses a hazard!</b></p> <p>Non-observance of the safety and handling instructions in this instruction manual could result in considerable dangers.</p> <p>&gt;&gt; It is essential to observe the warnings and instructions listed here.</p>

### 2.2 Responsibility during installation and operation

The construction company is subject to statutory work safety requirements when installing the flat roof window.

In addition to the work safety instructions in this instruction manual, the safety, accident prevention and environmental protection regulations applicable to the installation and operation of the LAMI-LUX Glass Skylight.

Note the following points:

- Find out about the applicable occupational health and safety regulations and carry out a risk assessment to determine any additional hazards resulting from the special working conditions at the installation site of the flat roof window. These must be implemented in the form of operating procedures for the installation and operation of the flat roof window.
- Secure any danger points which arise from the installation of the flat roof window (e.g. proximity to edges from which there is a drop, etc.).
- During the entire assembly and operating period of the flat roof window, check whether the operating instructions drawn up correspond to the current status of the regulations and adjust them if necessary.
- Clearly regulate and define the responsibility of personnel for installation, operation, maintenance and cleaning.
- Ensure that all those who work with the flat roof window have read and understood the instruction manual. Furthermore, personnel must be trained and informed of hazards at regular intervals.
- Ensure safety- and hazard-conscious handling of the flat roof window in accordance with the instruction manual.
- Make the instruction manual and all other documents accessible to personnel at all times.
- Provide personnel with the necessary protective equipment.


Furthermore, the operator is responsible for ensuring that the flat roof window is always in flawless condition.

For this reason, the operator must ...

- ensure that the cleaning and maintenance intervals specified in this instruction manual are adhered to.
- Have all safety devices checked regularly to ensure they are functional and complete.

## 2.3 Personnel requirements

### 2.3.1 Personnel qualifications

<b>⚠WARNING</b>	
	<p><b>Risk of injury in case of insufficient qualifications!</b></p> <p>Improper handling can lead to considerable personal injury and damage to property.</p> <p>&gt;&gt; Only allow all tasks to be carried out by persons who are qualified for them.</p>


This instruction manual specifies the following qualifications for various fields of activities:

- Instructed person has been instructed by the operator about the work assigned to them and possible dangers in case of improper conduct.
- Qualified personnel is, due to their professional training, knowledge and experience as well as knowledge of the relevant regulations, able to carry out the work assigned to them and to independently recognise and avoid possible dangers.
- Qualified electrician is able to carry out work on electrical systems and to recognise and avoid possible dangers independently due to their technical training, knowledge and experience as well as knowledge of the relevant standards and regulations.


Qualified electricians are responsible for the specific location they are working at and trained for, and are familiar with the relevant local standards and regulations.

Only persons who can be expected to perform their work dependably are authorised as personnel. Persons whose reactions are affected by influences such as drugs, alcohol or medications are not authorised.

Personnel to be trained, taught, instructed or those placed in an apprenticeship may only be assigned installation and operation tasks while under the constant supervision of an experienced person!

<b>SAFETY INSTRUCTIONS</b>	
	<p>The applicable age and occupation-specific regulations at the installation and operation site must be observed when selecting personnel.</p>

### 2.3.2 Unauthorized persons

<b>⚠WARNING</b>	
	<p><b>Danger for and due to unauthorised persons!</b></p> <p>Unauthorised persons who do not fulfil the requirements described above are not aware of the dangers in the work area.</p> <p>&gt;&gt; Keep unauthorised persons away from the work area.</p> <p>&gt;&gt; If in doubt, approach the persons in question and escort them away from the work area.</p> <p>&gt;&gt; Stop work as long as unauthorised persons remain in the work area.</p>

### 2.3.3 Briefing

Installation personnel and operators must be briefed by the applicable responsible parties (construction supervisors, operators, etc.) on a regular basis.


SAFETY INSTRUCTIONS	
i	Keep a log of the briefings and record the participants by taking their signatures so that the performance of briefings can be better tracked.

### 2.4 Intended use

In this instruction manual, reference is made to the Glass Skylight FE for daily ventilation.

For the intended and safe use of the product, it is necessary that it is installed at least 2.5 m above the lower access level and on a roof that is not freely accessible, or that free access to the product from the roof is prevented by suitable structural measures. Access for the purpose of assembly, maintenance, troubleshooting or disassembly requires specific personnel and specific safety measures, which can be found in this instruction manual.

Any use other than or beyond this is considered to be improper.


SAFETY INSTRUCTIONS	
	<p><b>Danger due to improper use</b></p> <p>Any use of the LAMILUX Glass Skylight FE that goes beyond the intended use and/or is different can lead to dangerous situations.</p> <p>&gt;&gt; Only use the LAMILUX Glass Skylight FE as intended. Comply with all specifications in this instruction manual.</p>

Any claims due to damages resulting from improper use are excluded.

The operator assumes sole responsibility for any risks.


## 2.5 Special hazards

### 2.5.1 Electrical system


⚠ DANGER	
	<p><b>Risk of electric shock!</b></p> <p>If contact is made with live lines or components, there is a risk of fatal injury!</p> <p>&gt;&gt; Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.</p> <p>&gt;&gt; Any faults detected in electrical systems/component assemblies/equipment must be rectified without delay. If there is an acute danger, then the system/component assembly/equipment in defective condition cannot be used.</p> <p>&gt;&gt; Parts on which inspection, maintenance and repair work is carried out must - if prescribed - be disconnected from the power supply and secured against being switched on again. The disconnected parts must first be checked to make sure they are not under power, then ground and short them and isolate any live neighbouring parts!</p>

<b>⚠ DANGER</b>	
	<p>&gt;&gt; If it is necessary to conduct work on live parts, then a second person must be called in to pull the emergency power shut-off in case of emergency. Block off the work area with a red and white safety chain and a warning sign. Only use electrically insulated tools!</p> <p>&gt;&gt; Do not repair or bypass any fuses. Only use original fuses with the specified amperage!</p>

### 2.5.2 Mechanical system


<b>⚠ WARNING</b>	
	<p><b>Risk of crushing!</b></p> <p>There is a risk of injury when opening and closing the flat roof window.</p> <p>&gt;&gt; Do not stay in the danger zone when opening and closing the device</p> <p>&gt;&gt; Do not reach into moving parts</p>

### 2.6 Risk of falling



<b>⚠ WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The Glass Skylight FE and roof edges pose a risk of severe to fatal injury from falls.</p> <p>&gt;&gt; Do not step onto edges which could be fallen from.</p> <p>&gt;&gt; Cordon off danger zones</p> <p>&gt;&gt; Wear personal protective equipment</p>

<b>⚠ WARNING</b>	
	<p>&gt;&gt; Do not walk on Glass Skylights due to risk of break-through</p>

### 2.7 Personal protective equipment

<b>⚠ WARNING</b>	
	<p><b>Risk of injury from improper protective equipment or lack of protective equipment!</b></p> <p>At work, personal protective equipment must be worn to minimise health hazards.</p> <p>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</p> <p>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</p>


The following protective equipment must be worn during all work on the flat roof window:

	<p>Protective helmet to protect the head from falling objects or hitting one's head</p>
	<p>Steel-toed safety boots</p>

Special protective equipment is additionally required when performing specific tasks. These are specified separately in the individual chapters. The following protective equipment must additionally be worn during specific work on the flat roof window:

	<p>Work gloves to protect from injuries</p>
	<p>Harness for fall protection</p>

### 2.8 Safety devices


<p><b>⚠️WARNING</b></p>	
	<p><b>Danger due to missing/non-functioning safety devices!</b></p> <p>Missing or non-functional safety devices can cause very serious injuries.</p> <p>&gt;&gt; Only operate flat roof windows if all safety devices are in place and are functional.</p>

The LAMILUX Glass Skylight FE has been manufactured in accordance with the legal requirements applicable in the European Union.

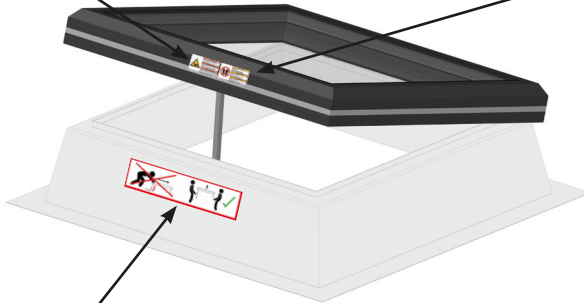
### 2.9 Signage on the flat roof window

<p><b>SAFETY INSTRUCTIONS</b></p>	
<p><b>i</b></p>	<p>Warning/danger signs are attached to the flat roof window to protect the installation and operating personnel. Note these signs.</p> <p>Renew damaged or illegible warning/danger signs immediately.</p>

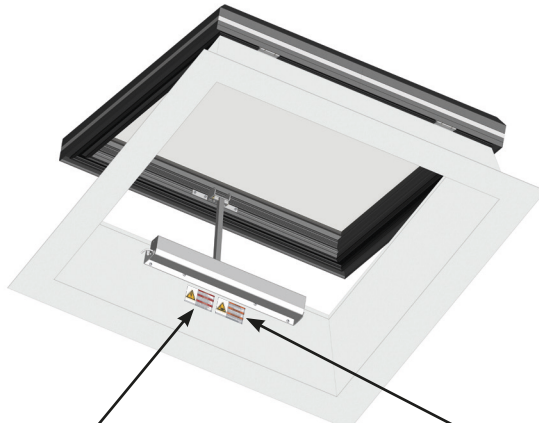
The design shown in the following images for the signage on the flat roof window is chosen as an example. The signage applies to all design variants.

	<b>⚠ WARNING</b>
	<b>Risk of crushing and amputation</b> Severe injuries can result. Do not touch the skylight or the opening mechanism. Stay away while the skylight is operating.
	<b>⚠ ADVERTENCIA</b>
	<b>Riesgo de aplastamiento y amputación</b> Se pueden provocar lesiones graves. No toque el tragaluz ni el mecanismo de apertura. Manténgase alejado mientras el tragaluz está funcionando.
	<b>⚠ AVERTISSEMENT</b>
	<b>Risque d'écrasement et d'amputation</b> Des blessures graves pourraient survenir. Ne touchez pas à la lucarne ou au mécanisme d'ouverture. Restez à distance lorsque la lucarne est en fonction.

	<b>⚠ CAUTION</b>
	<b>Fall Hazard</b> Risk of mild or serious injury. Do not step onto the skylight.
	<b>⚠ ATTENCIÓN</b>
	<b>Peligro de caída</b> Riesgo de lesiones leves o graves. No se pare sobre el tragaluz.
	<b>⚠ ATTENTION</b>
	<b>Danger de chute</b> Risque de blessures légères ou graves. Ne montez pas sur la lucarne.




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	<b>⚠ DANGER</b>
	<b>Risk of electric shock</b> Contact may lead to serious or fatal injury. Disconnect all sources of supply prior to servicing.
	<b>⚠ PELIGRO</b>
	<b>Riesgo de descarga eléctrica</b> En caso de contacto se pueden provocar lesiones graves o mortales. Desconecte todas las fuentes de alimentación antes de dar mantenimiento.
	<b>⚠ DANGER</b>
	<b>Risque de décharge électrique</b> Un contact peut entraîner des blessures graves ou mortelles. Débranchez toutes les sources d'alimentation avant d'effectuer l'entretien.

	<b>⚠ WARNING</b>
	<b>Risk of crushing and amputation</b> Severe injuries can result. Do not touch the skylight or the opening mechanism. Stay away while the skylight is operating.
	<b>⚠ ADVERTENCIA</b>
	<b>Riesgo de aplastamiento y amputación</b> Se pueden provocar lesiones graves. No toque el tragaluz ni el mecanismo de apertura. Manténgase alejado mientras el tragaluz está funcionando.
	<b>⚠ AVERTISSEMENT</b>
	<b>Risque d'écrasement et d'amputation</b> Des blessures graves pourraient survenir. Ne touchez pas à la lucarne ou au mécanisme d'ouverture. Restez à distance lorsque la lucarne est en fonction.

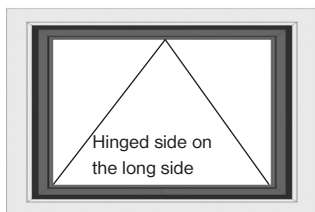
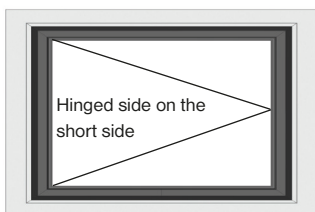
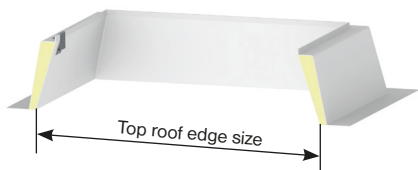
## 3. TECHNICAL DATA

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### 3.1 Data sheet

Detailed information on the product and its variants can be found in the separate installation instructions.

### 3.2 Dimension sheet



### 3.3 Type plate


The type plate is located on the frame profile (inside).


The type plate has the following information:


- Manufacturer
- Type
- Year of manufacture


# 4. TRANSPORT, INSTALLATION AND CONNECTION

## 4.1 Safety


<b>⚠ WARNING</b>	
	<p><b>Risk of injury!</b></p> <p>Lifting loads poses the risk of severe to fatal injury from falling or uncontrollably swinging parts.</p> <ul style="list-style-type: none"> <li>&gt;&gt; Never step under suspended loads.</li> <li>&gt;&gt; Observe the specifications on the intended anchor points.</li> <li>&gt;&gt; Do not anchor on protruding parts of the flat roof window. Make sure that the slings are fastened securely.</li> <li>&gt;&gt; Only use approved lifting gear and slings with sufficient carrying capacity.</li> <li>&gt;&gt; Do not use damaged ropes and/or slings.</li> <li>&gt;&gt; Do not place ropes and belts on sharp edges and corners, and do not tie them into knots or twist them.</li> </ul>

<b>⚠ WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The Glass Skylight FE and roof edges pose a risk of severe to fatal injury from falls.</p> <ul style="list-style-type: none"> <li>&gt;&gt; Do not step onto edges which could be fallen from.</li> <li>&gt;&gt; Cordon off danger zones</li> <li>&gt;&gt; Wear personal protective equipment</li> <li>&gt;&gt; Do not walk on Glass Skylights due to risk of breakthrough</li> </ul>

<b>⚠ WARNING</b>	
	<p><b>Risk of injury from improper protective equipment or lack of protective equipment!</b></p> <p>At work, personal</p> <p>The use of personal protective equipment is necessary to minimise health hazards.</p> <ul style="list-style-type: none"> <li>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</li> <li>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</li> </ul>


<b>⚠️WARNING</b>	
	<p><b>Risk of injury in case of insufficient qualifications!</b></p> <p>During assembly and servicing there is a risk of injury for those performing work in the danger zone. Incorrect assembly or servicing can cause hazards for subsequent operation.</p> <p>&gt;&gt; Installation and servicing work may only be carried out by qualified personnel.</p>

#### 4.2 Transport

<b>NOTICE</b>	
	<p><b>Damage due to improper transport!</b></p> <p>Improper transport can cause property damage resulting in great expenses.</p> <p>&gt;&gt; Proceed with caution when unloading packages upon delivery and during in-house transport and observe the symbols and instructions on the packaging.</p> <p>&gt;&gt; Only remove packages shortly before installation.</p> <p>&gt;&gt; Never place the flat roof window directly on the ground! Place square timbers under the product in order to prevent electrical lines from being shorn off.</p> <p>&gt;&gt; Do not expose the uninstalled flat roof window to the effects of weathering (moisture).</p>

#### 4.2.1 Transport inspection

Check the delivery for transport damage and make sure it is complete immediately upon delivery.

<b>SAFETY INSTRUCTIONS</b>	
	<p>Failure to follow the following instructions may relieve the insurer from its obligation to provide coverage in the event of damage.</p>

Proceed as follows if externally visible transport damage:

- If there is any suspicion of damage, only acknowledge receipt with reservation (e.g. on the freight document), stating the suspected damage.
- With goods in containers, make sure that the containers and locks or seals have been inspected by responsible parties from the shipping company or freight carrier. If a container is damaged, locks or seals have been broken or are missing or differ from the shipping documents, only receive the delivery conditionally and certify it specifying the suspected damage and keep the damaged or improper locks and seals.
- Ensure compensation claims against third parties.

Request the shipping company, other carriers, forwarders, warehouse keepers, customs and port authorities

- to inspect the damage together, request
- certification of the damage,
- hold them liable in writing and describe the damage in detail.

If there is externally visible damage, this must be done before the goods are accepted. If the damage is not externally visible, this must be done immediately after the damage is detected.

- Determine the claim periods and comply with them.

SAFETY INSTRUCTIONS	
i	A complaint must be filed for any fault as soon as it is discovered. Damage compensation claims can only be asserted within the applicable claims period.

- Ensure that any damage that has occurred is reduced and further damage is prevented.
- Immediately consult the insurance adjuster specified in the insurance documents, who will determine the damage and provide advice on securing compensation claims against third parties and on damage control measures.
- Do not alter the condition of the consignment and its packaging until the arrival of the insurance adjuster, unless this is necessary to minimise and prevent further damage.
- Immediately inform the insurer of the insurance case and provide it with complete damage documentation to expedite claims processing without delay (at the latest, in good time before any term of exclusion and/or statute of limitations for compensation claims against third parties)

#### 4.2.2 Packaging/storage

The flat roof window is largely pre-assembled at the factory and packaged accordingly.

- Leave the flat roof window in the packaging until installation.
- Store the flat roof window in a dry place and cover it.

#### 4.2.3 Transport options

For safe transport, the flat roof window must remain on the roof until installation, and must remain and be transported in its unopened transport crate.

The flat roof window may be transported with a forklift or crane.

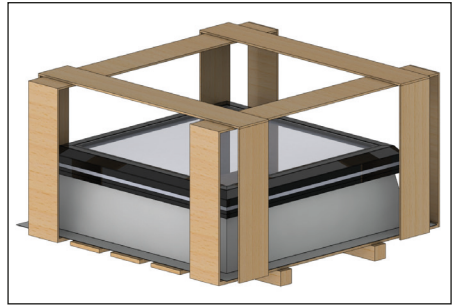


Fig.1: Glass Skylight FE

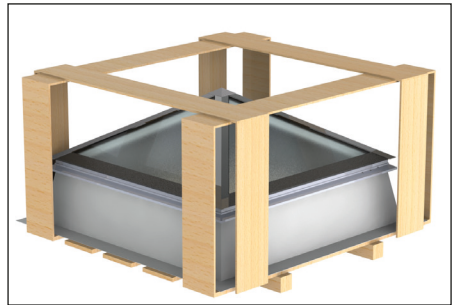


Fig.2: Glass Skylight FP

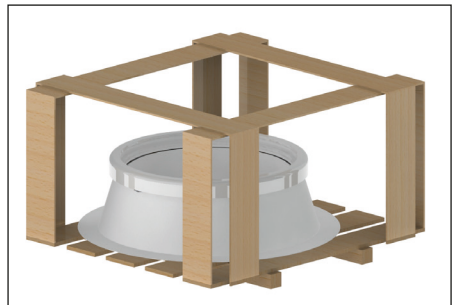


Fig.3: Glass Skylight FE Circular

### 4.3 Installation

Note: The installation is described in detail in the separate installation instructions.

Only the fastening material listed in the installation instructions is permitted for installation. Installation, connection and commissioning may only be carried out by qualified personnel. After the installation of the flat roof window, the initial commissioning must

be carried out by a competent person by means of the technical safety inspection.

⚠ <b>WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The Glass Skylight FE and roof edges pose a risk of severe to fatal injury from falls.</p> <p>&gt;&gt; Do not step onto edges which could be fallen from.</p> <p>&gt;&gt; Cordon off danger zones</p> <p>&gt;&gt; Wear personal protective equipment</p> <p>&gt;&gt; Do not walk on Glass Skylights due to risk of break-through</p>

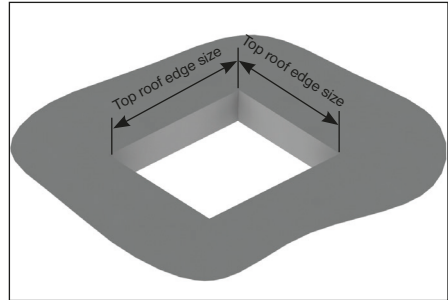
#### 4.3.1 Preparation

Before beginning work, a risk analysis must be conducted to systematically determine how to ensure compliance with state work safety regulations and trade unions' accident prevention regulations.

During the risk assessment, it must also be determined which risks could arise from the function of the flat roof window in connection with the installation location and which technical or organisational measures must be taken, if necessary. For installation, the necessary distances according to the flat roof guideline must be observed. When installing several flat roof windows, a distance of 0.5 m must be maintained from element to element.

#### Roof opening


For work preparation:



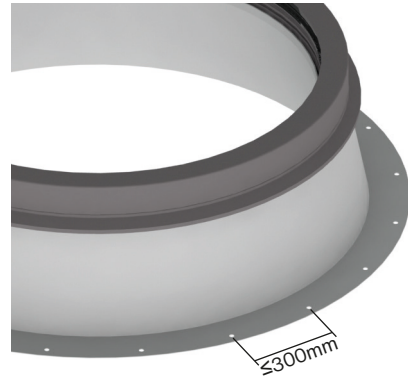
Create the roof opening according to the specifications (see sketch above). The dimensions depend on the order.

#### Transport and storage at the installation site

Bring the flat roof window onto the roof using suitable aids (hoist, etc.) (see chapter "Transport"). Never place the flat roof window directly on the roof, but leave it on the transport pallet until installation. This prevents the cables from shearing off. The cable routing is customised, depending on the order.

⚠ <b>NOTICE</b>	
	<p><b>Improper storage at the installation site can cause damage!</b></p> <p>Improper storage can cause considerable material damage at the installation site.</p> <p>&gt;&gt; Proceed with caution when unloading packages upon delivery and during in-house transport and observe the symbols and instructions on the packaging.</p> <p>&gt;&gt; Only remove packages shortly before installation.</p>

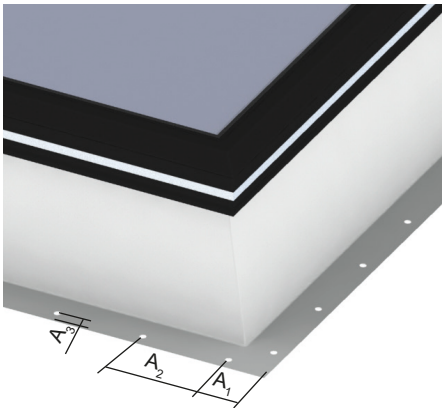
<b>NOTICE</b>	
	<p>&gt;&gt; Never place the flat roof window directly on the ground! Place square timbers under the product in order to prevent electrical lines from being shorn off.</p> <p>&gt;&gt; Do not expose the uninstalled flat roof window to the effects of weathering (moisture).</p> <p>&gt;&gt; Store the flat roof window well ventilated and avoid heat accumulation.</p> <p>&gt;&gt; Do not lift the flat roof window with glass suction cups.</p>



Fix the flat roof window with suitable fixing material for the respective supporting surface. Observe the specified edge distances for the fixing holes (see images above).

### 4.3.2 Installation

Place the flat roof window on the roof opening.



$A_1 = 100\text{mm}$  (distance hole - frame corner)

$A_2 = 300\text{mm}$  (distance hole - hole)

$A_3 = 30\text{mm}$  (distance hole - outer edge of frame)

### 4.3.3 Connection


<b>⚠ DANGER</b>	
	<p><b>Risk of electric shock!</b></p> <p>If contact is made with live lines or components, there is a risk of fatal injury!</p> <p>&gt;&gt; Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.</p> <p>&gt;&gt; Before starting work, the safety rules of electrical engineering must be followed and applied.</p>

## 5. DESCRIPTION


### Cable connections on the flat roof window

The connections of the flat roof window are customised, depending on the order. The associated connection diagrams can be found in the separate installation instructions.

- Install the terminal box for drives and sensor on the ceiling coving of the upstand.

<b>NOTICE</b>	
	<p><b>Malfunctions!</b></p> <p>Changing the connection lines to the drives (motors) can cause malfunctions or even total failure of the flat roof window.</p> <p>&gt;&gt; Combine the connecting cables of the drives belonging to a drive pair in a terminal box provided by the customer without changing the supply cables (shorten/extend).</p>

- Connect the flat roof window according to terminal diagram

<b>SAFETY INSTRUCTIONS</b>	
	<p>The power supply of the flat roof window must be a separate circuit.</p>

### 5.1 Description of Functions


The flat roof window consists of an upstand and a glazed opening flap. The flap can be moved to different opening angles, depending on which motor is installed. Rigid solutions that do not have an opening option are also possible.


The opening flap is attached to the upstand via hinges and opened from there with a rotary motion.


The control can be carried out via several triggers.

# 6. OPERATION

## 6.1 Safety

<b>⚠️WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The Glass Skylight FE and roof edges pose a risk of severe to fatal injury from falls.</p> <p>&gt;&gt; Do not step onto edges which could be fallen from.</p> <p>&gt;&gt; Cordon off danger zones.</p> <p>&gt;&gt; Wear personal protective equipment.</p> <p>&gt;&gt; Do not walk on Glass Skylights due to risk of break-through</p>

<b>⚠️WARNING</b>	
	<p><b>Risk of crushing!</b></p> <p>There is a risk of injury when opening and closing the flat roof window.</p> <p>&gt;&gt; Do not stand in the exit area when opening and closing the device.</p> <p>&gt;&gt; Do not reach into moving parts.</p>

<b>⚠️WARNING</b>	
	<p><b>Risk of injury from improper protective equipment or lack of protective equipment!</b></p> <p>The use of personal protective equipment is necessary to minimise health hazards.</p> <p>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</p> <p>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</p>

<b>SAFETY INSTRUCTIONS</b>	
i	<p>In the event of a power failure, the system is not functional!</p> <p>In the event of imminent severe weather, close the flat roof window in good time.</p>

## 6.2 Commissioning

The following steps must be followed before commissioning:

- Check the electrical connections.
- Proper installation of the flat roof window.
- Check the degree of freedom of the opening flaps.
- Check whether the opening flap is free of mechanical tensions.

**Safety acceptance**

After completion of the above tests, a safety acceptance test must be carried out. The inspector certifies compliance with all requirements for the installation and operation of the flat roof window. If there are special conditions

If additional hazards than those mentioned in this instruction manual exist at the installation site, the inspector shall assess the sufficiency of any additional protective measures taken and the safety of operation.

The safety inspection may only be carried out by qualified personnel. The safety inspection protocol must be completed (see chapter 10).

The safety approval refers to the function as a flat roof window.

**Ready-for-operation handover**

After the functional and safety checks, the flat roof window can be handed over ready for operation.

These include:

- Handing over the documents for the safety approval.
- Assembly instructions and instruction manual
- Instruction of operators


**6.3 Ventilation mode**

The flat roof window can be operated by means of the push-button installed on site.

To this end:

- Actuate the button function for the desired direction of travel (OPEN/CLOSE).

SAFETY INSTRUCTIONS	
i	<p>The profiles are thermally separated. However, during unfavourable climate conditions (e.g. high level of humidity indoors and low outside temperatures), condensation may form temporarily on the aluminium and glass surfaces. This does not constitute a deficiency. (See also DIN 4108 Condensation on surfaces).</p> <p>We recommend thorough ventilation at regular intervals and adequate heating in rooms to prevent the build-up of condensation.</p>

⚠ DANGER	
	<p><b>Risk of electric shock!</b></p> <p>To operate the emergency control button, the housing of the control unit must be opened. Live cables or components are not protected against access, there is thus a danger to life!</p> <p>Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.</p>

# 7. SERVICING


## 7.1 Safety


Maintenance and upkeep work may only be performed by persons who:


- are, on the basis of their education and qualifications, authorised and qualified personnel.
- are commissioned by the operator of the flat roof window to perform such work.


SAFETY INSTRUCTIONS	
i	Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.


- Perform servicing work in accordance with the instruction manual.
- During servicing work, secure the area of the flat roof window and prevent against by third parties.
- Unlock the control unit and secure it against a restart (put up a warning sign according to VDE).


	⚠ DANGER
	<p><b>Risk of electric shock!</b></p> <p>If contact is made with live lines or components, there is a danger of death!</p> <p>&gt;&gt; Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.</p> <p>&gt;&gt; Before starting work, the safety rules of electrical engineering must be followed and applied.</p>


	⚠ WARNING
	<p><b>Risk of injury in case of insufficient qualifications!</b></p> <p>During assembly and servicing there is a risk of injury for those performing work in the danger zone. Incorrect assembly or servicing can cause hazards for subsequent operation.</p> <p>&gt;&gt; Installation and maintenance work may only be carried out by qualified personnel.</p>

<b>⚠ WARNING</b>	
	<p><b>Risk of injury!</b></p> <p>Opening and closing the flat roof window poses the risk of injuring third parties.</p> <p>&gt;&gt; Only instructed operators are permitted to operate the flat roof window.</p> <p>&gt;&gt; When carrying out maintenance, repair or cleaning work, always ensure that operation is suspended. If necessary, disconnect the power supply.</p>

<b>⚠ WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The Glass Skylight FE and roof edges pose a risk of severe to fatal injury from falls.</p> <p>&gt;&gt; Do not step onto edges which could be fallen from.</p> <p>&gt;&gt; Cordon off danger zones</p> <p>&gt;&gt; Wear personal protective equipment</p> <p>&gt;&gt; Do not walk on Glass Skylights due to risk of breakthrough</p>

<b>⚠ WARNING</b>	
	<p><b>Risk of injury from improper protective equipment or lack of protective equipment!</b></p> <p>At work the use of personal protective equipment is necessary to minimise health hazards.</p> <p>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</p> <p>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</p>

<b>⚠ WARNING</b>	
	<p><b>Risk of crushing!</b></p> <p>There is a risk of injury when opening and closing the flat roof window.</p> <p>&gt;&gt; Do not stand in the exit area when opening and closing the device.</p> <p>&gt;&gt; Do not reach into moving parts.</p> <p>&gt;&gt; Secure the area around the flat roof window and block it off from third parties during servicing work.</p> <p>&gt;&gt; Disconnect the control unit and secure it to prevent it from being turned back on (hang up a warning sign in accordance with VDE).</p>

	<p>Harness for fall protection</p>
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**After an upkeep work:**


- inspect safety systems.
- Check for faultless functioning of the flat roof window.

## 7.2 Maintenance

Regular maintenance work is necessary in order to ensure flawless functioning of the flat roof window and its components.

Carry out maintenance according to the maintenance schedule. If damage to the flat roof window, the components or restrictions in the function are detected in the course of the maintenance:


- Disable functions.
- Commence repair work.


<b>NOTICE</b>	
	<p><b>Property damage!</b></p> <p>If any defects or impairments in function are detected, continued operation may seriously damage the flat roof window.</p> <p>&gt;&gt; In the case of defects or impairments in function, do not use the flat roof window. and remove it from operation.</p> <p>&gt;&gt; Commence repair work immediately.</p>

Interval*	Maintenance work
Min. 1x per year	Visual inspection of the flat roof window and all components
	General functional test
	Check the ease of movement of the linear guides of the opening flaps and lubricate if necessary. Use only acid-free grease for lubrication.
	Lightly oil the moving parts regularly so as not to impair their functionality. Use only acid-free oil.
	The surrounding lip seal must be rubbed with talcum powder at regular intervals in order to keep the rubber supple and prevent it freezing in winter.


\* Specified maintenance intervals are a recommendation!

The interval times depend on the prevailing environmental influences (e.g. humidity, temperature).

<b>SAFETY INSTRUCTIONS</b>	
	<p>The profiles are thermally separated. However, during unfavourable climate conditions (e.g. high level of humidity indoors and low outside temperatures), condensation may form temporarily on the aluminium and glass surfaces. This does not constitute a defect. (See also DIN 4108 Condensation on surfaces).</p> <p>- We recommend thorough ventilation at regular intervals and adequate heating in rooms to prevent the build-up of condensation.</p>


<b>⚠ WARNING</b>	
	<p><b>Risk of injury!</b></p> <p>Incorrect or faulty replacement parts can cause damage, malfunctions or total machine failure, and jeopardise safety.</p> <p>&gt;&gt; Only original spare parts from the manufacturer.</p>

Repairs to the flat roof window may only be carried out by authorised specialist companies.

<b>SAFETY INSTRUCTIONS</b>	
	<p>The Customer Service department of LAMILUX Heinrich Strunz GmbH will be available to assist you with any questions you may have on repairs.</p>

### 7.4 Cleaning

The flat roof window must be cleaned regularly (according to the degree of soiling).



<b>NOTICE</b>	
	<p><b>Property damage!</b></p> <p>Improper cleaning and impermissible cleaning agents may damage the flat roof window.</p> <p>&gt;&gt; Chemical cleaning agents and solvents may not be used under any circumstances.</p> <p>&gt;&gt; Follow cleaning instructions.</p>



Daylight elements are best cleaned as with glassware with water and one of the known washing-up liquids with a soft cloth. Glass elements in structural glazing design may only be cleaned with water. In the case of heavy soiling, including smearing with oil and grease, warm soapy water or soda water

usually helps. The lacquer surface may only be cleaned with mild cleaning agents and using a soft sponge with plenty of water. The circumferential sealing profiles must be rubbed with plastic and rubber care products at regular intervals to maintain the suppleness of the rubbers and prevent them from freezing in winter. Cleaning and care products based on organic solvents must not be used under any circumstances. These and also their aerosols and vapours lead to stress corrosion cracking! Daylight elements must be cleaned regularly to avoid increased wear of the surfaces and sealing materials. The user must ensure that, for example, drainage openings and/or water-draining cover strip drainage openings and/or water-draining cover strip joints are free of coarse dirt such as leaves.

# 8. TROUBLESHOOTING


## 8.1 Safety


	<p><b>⚠ DANGER</b></p> <p><b>Risk of electric shock!</b>          If contact is made with live lines or components, there is a danger of death!          &gt;&gt; Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.          &gt;&gt; Before starting work, the safety rules of electrical engineering must be followed and applied.</p>
	<p><b>⚠ WARNING</b></p> <p><b>Risk of crushing!</b>          There is a risk of injury when opening and closing the flat roof window.          &gt;&gt; When opening and closing the device, do not stand in the swivel area          &gt;&gt; Do not reach into moving parts.</p>

	<p><b>⚠ WARNING</b></p> <p><b>Risk of injury in case of insufficient qualifications!</b>          When working on the flat roof window, there is a risk of injury for the person carrying out the work by working in the danger zone. Incorrect work can cause hazards for subsequent operation.          &gt;&gt; Work on the flat roof window may only be carried out by qualified personnel.</p>
	<p><b>⚠ WARNING</b></p> <p><b>Risk of falling!</b>          The flat roof window and roof edges pose a risk of severe to fatal injury from falls          &gt;&gt; Do not step onto edges which could be fallen from.          &gt;&gt; Cordon off danger zones          &gt;&gt; Wear personal protective equipment          &gt;&gt; Do not walk on Glass Skylights due to risk of breakthrough</p>

## 9. DISMANTLING AND DISPOSAL

### 9.1 Safety

<b>⚠ WARNING</b>	
	<p><b>Verletzungsgefahr durch falsche oder fehlende Schutzausrüstung!</b></p> <p>At work, personal</p> <p>The use of personal protective equipment is necessary to minimise health hazards.</p> <p>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</p> <p>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</p>

<b>⚠ DANGER</b>	
	<p><b>Risk of electric shock!</b></p> <p>If contact is made with live lines or components, there is a danger of death!</p> <p>&gt;&gt; Work on electrical equipment may only be conducted by a qualified electrician or instructed persons under guidance and supervision of a qualified electrician in accordance with the rules of electrical engineering.</p> <p>&gt;&gt; Before starting work, the safety rules of electrical engineering must be followed and applied.</p>


### 8.2 Malfunction and troubleshooting


In the event of a malfunction, the table below should help to determine the cause of the malfunction and to initiate a remedy.

Error	Possible cause	Troubleshooting
Flat roof window does not open	Power supply interrupted	Power supply Check and restore if necessary


If the listed points do not eliminate the fault, then:

- Block the flat roof window for operation
- Initiate repair

<b>⚠ WARNING</b>	
	<p><b>Risk of crushing!</b></p> <p>There is a risk of injury when opening and closing the flat roof window.</p> <p>&gt;&gt; When opening and closing the device, do not stand in the swivel area</p> <p>&gt;&gt; Do not reach into moving parts.</p>

<b>⚠WARNING</b>	
	<p><b>Risk of injury in case of insufficient qualifications!</b></p> <p>During assembly and servicing there is a risk of injury for those performing work in the danger zone. Incorrect assembly or servicing can cause hazards for subsequent operation.</p> <p>&gt;&gt; Installation and servicing work may only be carried out by qualified personnel.</p>

<b>⚠WARNING</b>	
	<p><b>Risk of falling!</b></p> <p>The flat roof window and roof edges pose a risk of severe to fatal injury from falls</p> <p>&gt;&gt; Do not step onto edges which could be fallen from.</p> <p>&gt;&gt; Cordon off danger zones</p> <p>&gt;&gt; Wear personal protective equipment</p> <p>&gt;&gt; Do not walk on Glass Skylights due to risk of break-through</p>

<b>⚠WARNING</b>	
	<p><b>Risk of injury from improper protective equipment or lack of protective equipment!</b></p> <p>At work, personal</p> <p>The use of personal protective equipment is necessary to minimise health hazards.</p> <p>&gt;&gt; The protective equipment necessary for the task at hand must be worn at all times during work.</p>

<b>⚠WARNING</b>	
	<p>&gt;&gt; Follow the instructions on personal protective equipment provided in the work area.</p>

## 9.2 Disassembly


To disassemble the flat roof window:

- Establish freedom from tension
- Disconnect electrical connections
- Remove the flat roof window
- Transport the flat roof window away from the site

## 9.3 Disposal

If no return or disposal agreement has been made, take the disassembled components to be recycled:

- scrap metals
- take plastic elements to recycling facility
- sort and dispose of other components according to material properties.

<b>NOTICE</b>	
	<p><b>Improper disposal may harm the environment!</b></p> <p>Incorrect disposal can lead to environmental damage.</p> <p>&gt;&gt; Electronic waste, electronic components, lubricants and other auxiliary substances are subject to special waste treatment and may only be disposed of by approved specialized companies!</p>







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GLASS ARCHITECTURE



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SMOKE AND HEAT EXHAUST  
VENTILATION SYSTEMS



BUILDING CONTROL SYSTEMS



RODA LIGHT AND  
AIR TECHNOLOGY

The technical data printed in this brochure was accurate when this brochure went to press and is subject to change without notice. Our technical specifications are based on calculations and supplier specifications, or have been determined by independent testing authorities within the scope of applicable standards.

Thermal transmission coefficients for our composite glazing were calculated using the finite element method with reference values in accordance with DIN EN 673 for insulated glass. Based on empirical values and specific characteristics of the plastics, a temperature vector of 15 K was defined as the vector between the outer surfaces of the material. Functional values refer to test specimens and the dimensions used in testing only. We cannot provide any further guarantees of technical values. This particularly applies to changes in installation locations, or if dimensions are re-measured on site.



**LAMILUX Heinrich Strunz GmbH**

Zehstraße 2 · PO Box 1540 · 95111 Rehau · Tel.: +49 (0) 92 83 / 5 95-0 · Fax +49 (0) 92 83 / 5 95-29 0

E-Mail: [information@lamilux.de](mailto:information@lamilux.de) · [www.lamilux.com](http://www.lamilux.com)

