

LAMILUX
GLASSYSTEME

Roofs of light



LAMILUX CI systems – Maximum efficiency

You benefit from energy efficiency, comfort, design and safety.

» *The modern building is characterized by the topic of 'energy efficiency'. Daylight systems in industrial and administrative buildings, aesthetic prestige buildings, or private housing form an integral part of a premium, energy-saving building shell. At LAMILUX we focus on the continuous development of innovative daylight solutions for sustainable, energy-efficient and forward-looking building.* «

Dr. Heinrich Strunz,
Managing Partner, LAMILUX Heinrich Strunz GmbH



The LAMILUX CI Philosophy

Customer value is the reason for our existence and is the focus of our activities. This requires harmony, identity and a balance between customer value and company strategy.

These guiding ideas for our company's actions and our day-to-day relationship with our customers are described in LAMILUX's company philosophy:

'Customised intelligence – serving the customer is our mission.'

This requires outstanding performance and leadership in all areas relevant to customers, particularly in the role of:

- **Quality leader** – optimum benefits for customers
- **Innovation leader** – at the cutting edge of technology
- **Leader in service** – fast, uncomplicated, reliable and friendly
- **Leader in expertise** – best-in-class technical and commercial advisory services
- **Leader in solutions** – individual, tailor-made solutions

LAMILUX daylight systems – Roofs of light



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CI System
Rooflight Dome F100



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CI System
Glass element F



Page 18

CI System
Continuous rooflight



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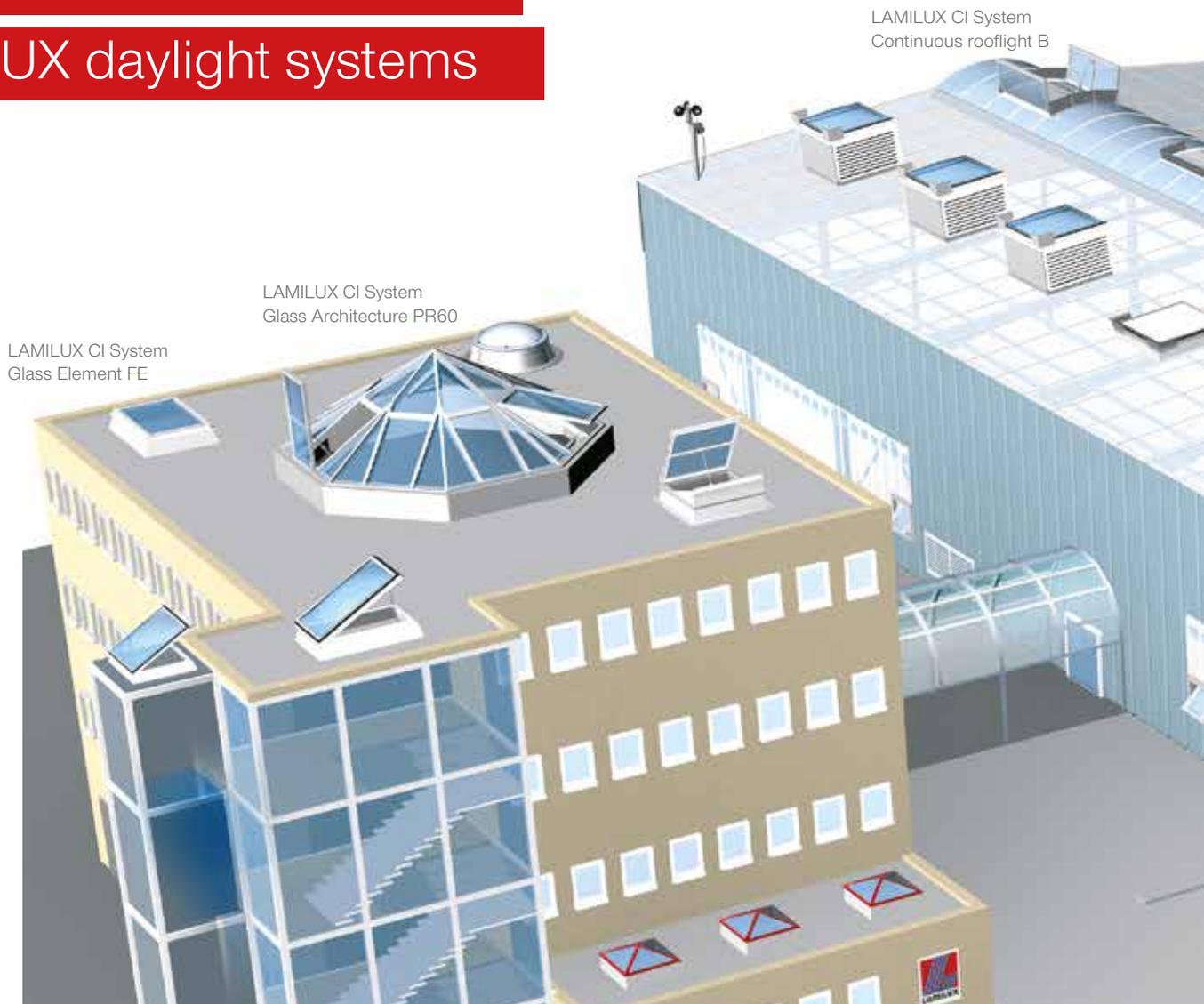
CI System
Glass Architecture PR60



Page 30

Smoke and heat
exhaust systems

How you can benefit from LAMILUX daylight systems



ENERGY EFFICIENCY

Thermally separated design

High level of air tightness

Generous daylight incidence

Controllable natural ventilation

COMFORT

Product variants as roof exits

Integration of intelligent comfort control units

Remote control for ventilation and sun protection

Good sound insulation

DESIGN

Modern, aesthetic shapes

Wide range of colours for profile coatings

Smooth and clean processing

Filigree appearance with narrow profiles

SAFETY

System designs as SHEVS systems

Certified stability and impact resistance

Storm safety and driving rain protection

Break-in protection



LAMILUX CI System
Smoke lift DK

LAMILUX photovoltaic systems

LAMILUX CI System
Continuous rooflight S

LAMILUX CI System
Smoke lift SW

LAMILUX CI System
Rooflight Dome F100

LAMILUX CI System
Smoke lift F100

LAMILUX CI System
Window walls

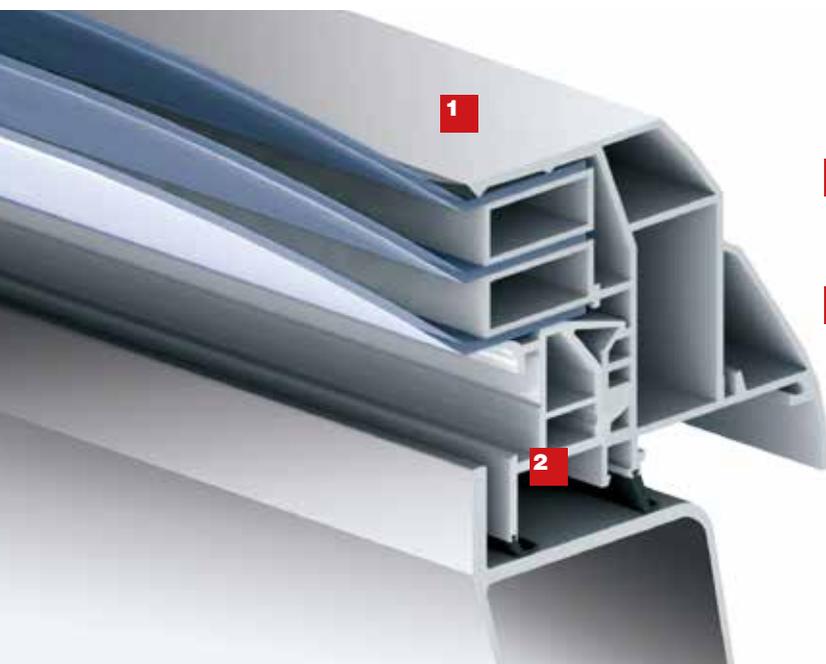
LAMILUX CI System Rooflight dome F100

See also page 31
LAMILUX CI System Smoke Lift F100



TECHNOLOGY AND DESIGN

With a view to sustainable building, LAMILUX has continually evolved many facets of the **LAMILUX CI System Rooflight Dome F100's** engineering. The function and design of the individual elements, and all the components of the overall system, form a compact unit for excellent energy efficiency and stability of this attractive rooflight dome, which ensures valuable daylight incidence in the flat roofs of production shops, warehouses, sports and trade fair venues.



1 STABILITY AND SAFETY
Thanks to partial long-fibre reinforcement



JEC
Innovation
Award

2 ENERGY EFFICIENCY
Heating cost savings and minimised risk of condensation
due to a design that avoids thermal bridges
with a multi-layered, double sealing system

The new **LAMILUX CI System Rooflight Dome F100** already complies with all EnEV 2009 requirements and the future EnEV 2014 requirements thanks to a pioneering multi-layered seal system, the option to integrate up to four layers of composite glazing, an innovative, buckle-resistant border frame profile and a heat-insulated, fibre-reinforced composite upstand.



ENERGY EFFICIENCY

Multi-layer sealing system between the upstand and the upper part

Overall construction avoids thermal bridges

Upstand thermally insulated across full surface with a U value = $0.9 \text{ W}/(\text{m}^2 \text{ K})$

Installation of quadruple glazing possible

COMFORT

Rooflight dome opens for natural ventilation

Integration of sun protection elements

Sound insulation glazing

DESIGN

Aesthetic rooflight element thanks to elegant frame profiles

Clean and smooth processing

No visible butt joints on the inner sides of the upstand

SAFETY

Tested and classified as per EN 1873 (European product standard for rooflight domes)

Preventive fire protection complies with DIN 18234 (prevention of fire spread on the roof) without additional measures

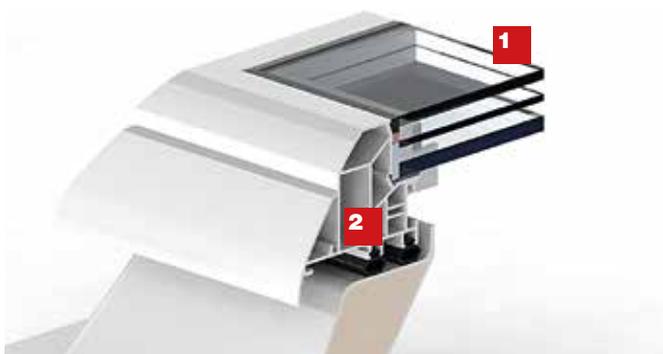
Stability thanks to surround profiles with fibreglass reinforcement

Eyelets for personal protective equipment (PPE)



LAMILUX CI SYSTEM GLASS ELEMENT F100

The **LAMILUX CI System Glass Element F100** achieves a very high level of energy efficiency in daylight systems for flat roofs. The daylight element with its genuine glass top section has a U value of 0.62 W/(m² K). Beyond these energetic qualities, the **LAMILUX CI System Glass Element F100** also ensures generous daylight incidence and thus very bright, energy-saving illumination for an attractive interior ambience.



1 NEW: Triple glazing
for greater energy efficiency

2 ENERGY EFFICIENCY
thanks to high air tightness with flexible balloon seals

ENERGY EFFICIENCY
Heating cost savings and minimised risk of condensation
due to a design that avoids thermal bridges

Available sizes

Upper edge of roof size

70/135	90/145
80/80	100/100
90/90	120/120
90/120	150/150

This daylight element can also provide natural ventilation using a lift system conveniently operated with a remote control. This makes it ideal for integration into flat roofs on industrial, office and residential buildings.



RECARO Marktleugast

Project

Illumination of large-scale shop floor areas with natural light, creating aeration and ventilation options, and implementing smoke and heat extraction in line with the fire protection concept.

Systems:

- **Rooflight domes (LAMILUX CI System Rooflight Dome F100) thermally separated** and free of thermal bridges as a seamless thermally insulated system, completely pre-assembled on a GRP upstand with an insulating core
- **SHEVS fittings** with CO₂ remote and thermal triggering
- **Aeration control** for actuating electric drives, digital and time-controlled aeration function, night-time cooling and intensive airing function, text display and navigation key

GROB Mindelheim

Project:

Construction of a new manufacturing shop. The intent was to achieve daily aeration and ventilation via cylinders with spring force closing, SHEVS and ventilation function control via a single pipe.

Systems:

- 493 LAMILUX CI System Rooflight Dome F100
- Implementation of **rooflight domes as Smoke Lift F100** type including GRP upstand
- **SHEVS centres**



CUBE Waldershof

Project:

Energy-saving, large-area illumination of a new building with natural light, safe smoke and heat extraction and energy-efficient natural ventilation of the hall.

Systems:

- **Rooflight domes as SHEVS systems;** thermally isolated and free of thermal bridges, with double-glazing (translucent, 70% light transmittance and 70% solar heat gain)
- **Upstands made of fibre-reinforced plastic,** seamless and with thermal insulation core
- **SHEVS fittings (DIN EN 12101-2)** with CO₂ remote and thermal triggering
- **CO₂ alarm stations and SHEVS centres** control the actuators for ventilation and smoke extraction

IDH Glauchau

Project:

LAMILUX flat roof windows offer the ideal approach to combining generous daylight incidence and ideal heat protection in administrative building renovation projects.

Systems:

- **LAMILUX CI System Glass Element F100** in the dimensions 120 x 120 cm with a U_g value of 1.1 W/(m² K)
- **GRP upstands** in mono-pitched roof geometry
- **Motor opener as opening and closing drive** for natural aeration and ventilation



LAMILUX CI System
Glass Elements F

ONE SYSTEM FOR MANY PERSPECTIVES

Attractive design and a great deal of architectural charm, generous light incidence and exceptional heat insulation values – these are the trademarks of the **LAMILUX CI System Glass Architecture F**. The big benefit of daylight elements from the CI System Glass Architecture F series is their versatile use: The light elements are suitable for administrative and prestige buildings, but also for private housing.



- 1 NEW: Varied glazing in all versions**
3-pane insulated glass is possible in the versions flat element/pyramid/hipped roof
- 2 ENERGY EFFICIENCY**
By increasing the temperature on the inside. Thermo Active Design (TAD) minimises the risk of condensation.
- 3 ENERGY EFFICIENCY**
NEW: improved thermal insulation in the aluminium profiles

The flat, pyramid or hipped roof shape daylight systems provide attractive individual elements for the flat roof. In all three product variants they combine exacting requirements in terms of aesthetics, energy efficiency and convenience in daylight systems with modern, energy-efficient and design-oriented construction. Premium workmanship, versatile glazing options with a high level of light transmittance and fully thermally-insulated constructions are the hallmarks.



ENERGY EFFICIENCY

Optimum thermal insulation with a smooth isothermal characteristic thanks to an overall system that avoids thermal bridges

Airtight as per EN 12207 Class 4

High daylight incidence with a variety of genuine glass glazing systems

Controllable energy load with intelligent control systems for natural ventilation, sun protection, and shading blinds

COMFORT

Pleasant indoor atmosphere thanks to natural ventilation and regulation of solar heat load

High level of protection against condensation on the insides of the glazing and the frame and bar profiles

Excellent sound insulation of glazing options (EN ISO 140-3) up to 45 dB

Roof exit variant both single- and double-leaf in large dimensions for the CI System Glass Element FE

DESIGN

Filigree appearance inside and out with elegant and narrow bar profiles (CI System FP/FW)

Dimensions and geometry in many different versions

Variety of colours can be chosen individually as per RAL card

SAFETY

Permanent fall-through protection (GSBAU 18) for all elements up to upper edge of roof surface 150/180

Break-in protection Resistance class 2 tested according to DIN V ENV 1627 'opportunist offender' (optional for CI System Glass Element FE)

Driving rain protection as per EN 12208 Class E1500



LAMILUX CI SYSTEM GLASS ELEMENT FE_{energysave}

The Passive House Standard is internationally recognised as one of the most demanding energy efficiency standards. LAMILUX supports architects and planners in the implementation of passive houses with an innovative, Passive House-certified daylight element: The **LAMILUX CI System Glass Element FE_{energysave}** has been certified by the Passivhaus-Institut Darmstadt as the world's first passive house-capable rooflight dome, thus achieving the highest efficiency rating with the phA Advanced Component classification.

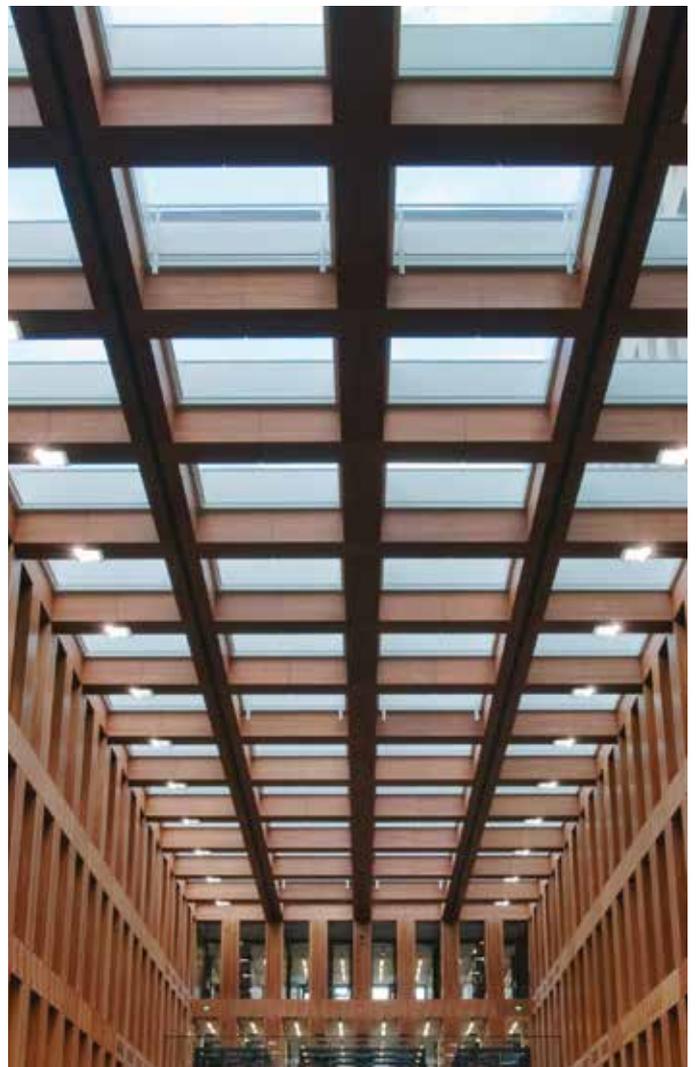


- 1 ENERGY EFFICIENCY**
NEW: 'Warm Edge' with the SuperSpacer using triple glazing as standard
- 2 ENERGY EFFICIENCY**
thanks to further improvements in thermal insulation and a three-layer sealing system
- 3 PASSIVE HOUSE CERTIFICATION**
in the highest class, phA



Triple glazing is always used for the **LAMILUX CI System Glass Element FE_{energysave}** for compliance with Passive House requirements. The frame offers excellent air tightness and insulation. The Passivhaus-Institut Darmstadt determined a U_{SL} value of $0.84 \text{ W}/(\text{m}^2 \text{ K})$ for the entire daylight element on the normative basis of DIN EN ISO 10077-1 and 10077-2.

Top variant: Implemented as a **LAMILUX CI System Glass Element FE_{energysave+}** for the 'cold' climate region (Scandinavia, the Alpine region, etc.) with a U value = $0.65 \text{ W}/(\text{m}^2 \text{ K})$ and 4x glazing.



Best Practices

APARTMENT Berlin

Project:

Creation of a luxurious living space with an exclusive ambience thanks to substantial natural light incidence with controlled aeration and ventilation and convenient access to the roof-top terrace.

Systems:

- **LAMILUX CI System Glass Element FE** as a two-part, **horizontally-opening flat roof element** (automated opening and closing)
- Compact, **maximum energy-efficiency overall design**, mounted on an upstand of fibre-reinforced plastic with an integrated core insulating block
- Sliding, **electric motor-powered glass element** with very low-noise; sliding on telescopic rails made of stainless steel

HUMBOLDT UNIVERSITY Berlin

Project:

Large-area illumination of the central library and reading area of the new building thanks to a high incidence of daylight, at the same time imposing strict thermal insulation requirements on the daylight systems.

Systems:

- 92 flat glass roof elements **LAMILUX CI System Glass Element ME** with a slightly inclined installation position of 3°, in the dimensions 250 x 250 cm
- Implemented in part as a **SHEVS sash** for a **natural aeration and ventilation, and SHEVS function**
- **Upstand constructed of fibre-reinforced plastic** with an inner liner of sheet metal
- **Sun protection glazing** with 50% light transmittance and 17% solar heat gain



SCHOOL Norrköping (Sweden)

Project:

Conversion of a former industrial building into a school building. Thanks to the pyramid-shaped glass elements, the underlying area is also generously illuminated with daylight in winter.

Systems:

- **LAMILUX CI System Glass Elements FP** in the dimensions 180 x 180 cm with a U_g value of 1.1 W/(m² K), and a noise insulation value of 35 dB
- **Upstands of fibre-reinforced plastic**, 50 cm height
- **Condensate detector**

SVG Ötisheim

Project:

In the construction of an administrative building, the building owner sets great store by aesthetic, natural lighting. A logistics building also needs to meet the strictest fire protection requirements.

Systems:

- 17 **LAMILUX CI System Smoke Lift F100**
- 6 **LAMILUX CI System Glass Element FE of round, ventilation-capable type**
- 17 **SHEVS fittings** and **servo-motorised openers**
- 6 **Custom motor design** for the glass elements
- **Wind and rain sensor kit**
- **SHEVS centres** and **CO₂ alarm stations**



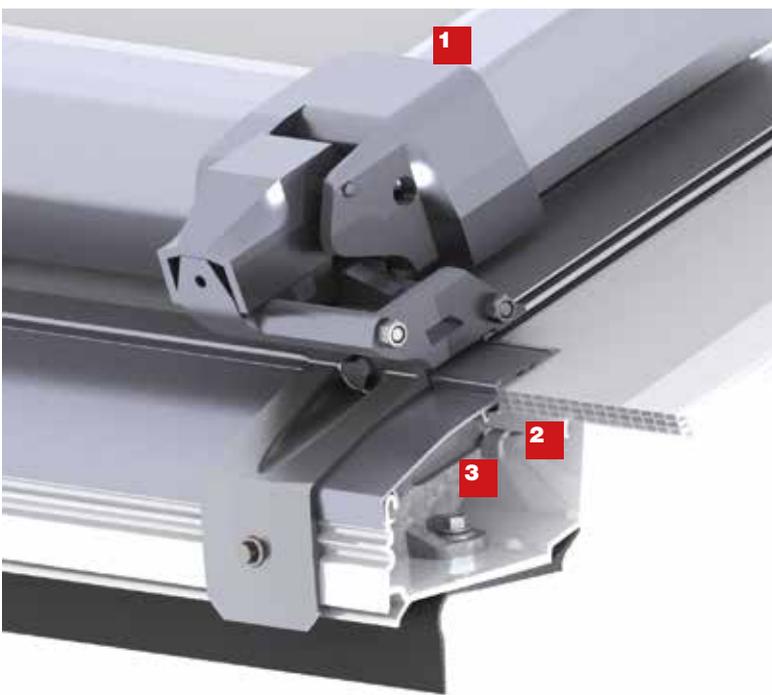
LAMILUX CI System Continuous Rooflight

See also page 33
LAMILUX CI System Smoke Lift B

LAMILUX CI SYSTEM CONTINUOUS ROOFLIGHT B

ENERGY-EFFICIENT AND SUPERIOR STATICS

Continuous rooflights are a classic element in industrial building and unit design. The function it primarily provides in the building is to direct daylight into the building, and to ensure natural ventilation as well as a safe smoke and heat extraction (SHEVS) through integrated lift systems. For these rooflights, too, one criterion takes the highest priority: energy efficiency



1 SAFETY
thanks to safe bearing of the glazing in the lift system with dynamic torque control (DMR)

2 SAFETY
thanks to linear burn-through protection (LDS).
Prevention of fire propagation.

3 ENERGY EFFICIENCY
thanks to perfect thermal decoupling with isothermal load converters (ITL)

NEW: Extra equipment Blower Door
for increased air tightness class 3 in accordance with
DIN EN 12207 at 50 Pa pressure difference

In the form of the **CI System Continuous Rooflight B**, LAMILUX launched the first daylight design with tested and certified thermal insulation values on the market. This means: The **CI System Continuous Rooflight B** rules out all thermal bridges. Depending on the version it reaches a U_w value of up to $1.7 \text{ W}/(\text{m}^2 \text{ K})$. In addition, the continuous rooflight system has European Technical Approval (ETA), in which LAMILUX demonstrated excellent values for thermal protection.

LAMILUX CI SYSTEM CONTINUOUS ROOFLIGHT S

CONSTRUCTIVE – ENERGY EFFICIENT – AESTHETIC

As a continuous gable roof form rooflight for flat roofs, the **LAMILUX CI System Continuous Rooflight S** sees LAMILUX present an innovative solution for industrial and administrative buildings. Numerous intelligent components ensure an extremely stable and thermal bridge-free design, capable of spanning up to six metres (depending on the snow load). Thermally decoupled lift systems for smoke and heat extraction (SHEVS) and natural aeration and ventilation can be combined in a variety of sizes and arranged in the rooflight as part of a modular system – ideally suited to the required smoke extraction area.



Plastic glazing with panel thicknesses from 10 to 32 mm (made of polycarbonate or innovative fibre-reinforced plastic) can be integrated into the modular jamb and transom system, in which the internal and external metallic components are thermally isolated for perfect thermal insulation. The choice of glazing depends on the building-specific energy requirements. The **LAMILUX CI System Continuous Rooflight S** sees LAMILUX fulfil its promise of making a major contribution towards optimised energy performance of the building shell with the daylight system.



ENERGY EFFICIENCY

Complete thermal separation of all metallic components in the support structure and the lift systems, as well as excellent air tightness

Use of materials with excellent heat-insulating properties in the anchor point

Plastic glazing with a very low heat-transmission coefficient

High daylight incidence

COMFORT

Controlled and automated lift systems for natural ventilation

Integration of sun protection elements

Sound insulation glazing

DESIGN

Clean and smooth processing

Aesthetic overall impression on the flat roof

SAFETY

Integration of effective smoke and heat exhaust ventilation systems in line with DIN EN 12101-2

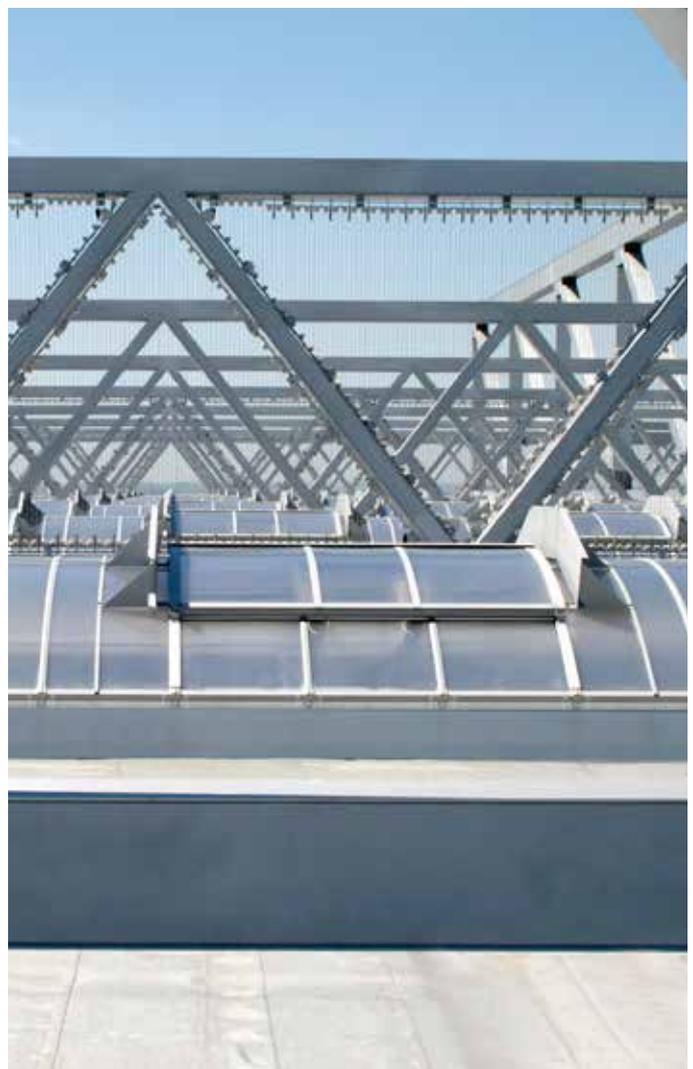
Rapid lift opening in case of fire through tested triggering and drive systems

Great durability and stability in conditions with high wind and snow loads

Secure anchoring of the lift systems even in open state



Best Practices



SCHNEIDER Regensburg

Project:

Energy renovation of the roof and old light bands due to very poor thermal insulation values. All works were completed without interrupting on-going production.

Systems:

- Construction and installation of 37 new, thermal bridge-free continuous rooflights of the **LAMILUX CI System Continuous Rooflight B** type.
- **Adapter frames** for installing the new continuous rooflight systems on the existing subconstruction
- **Multi-layered glazing** in translucent, glare-reducing design
- **SHEVS double lifts** with CO₂ remote and thermal triggering
- **Wind and rain sensors** with optical display
- **PLC units**

A380 hangar Frankfurt

Project:

Bright, glare-free illumination of the unit interior as well as integration of a combined SHEVS and ventilation function for long-term, safe use.

Systems:

- Construction and installation of a total of 600 linear metres of continuous rooflights of the type **LAMILUX CI System Continuous Rooflight B**
- **Multi-layer, polycarbonate glazing** in a clear, glare-free version with surface enhancement
- **SHEVS double lift systems** with wind deflectors
- Safe, pneumatic **tandem closures**
- **Facility automation system connectivity for the entire control and triggering technology** for the smoke and heat ventilation system and aeration function



SPORTS COMPLEX Adorf

Project:

Urban redevelopment project implemented as part of Germany's Economic Stimulus Package II: new building after demolition of the old gym as a modern two-field sports complex.

Systems:

- **LAMILUX CI System Continuous Rooflight B** including ventilation sash with a length of 34 metres
- **Glazing** UV-resistant, **surface enhancement**, translucent and glare-free
- **LAMILUX shed roof** with a surface inclination of 25° and a length of 36 metres, divided into 72 glass panels; RAL-coated design
- **Connection of the controls to the facility automation** with numerous convenience features

REITHELSHÖFER Roth

Project:

Construction of a new workshop building with a high incidence of daylight at the workplaces. Great emphasis was placed on particularly reliable preventive fire protection using SHEVS systems.

Systems:

- Construction and installation of three continuous rooflights in pitched roof form of the type **LAMILUX CI System Continuous Rooflight S**
- **Completely thermally insulated designs** with opening widths of 2.50 meters and a length of 20 metres
- **Multi-layered, translucent polycarbonate glazing** featuring a light transmittance of 38 percent
- Integration of 12 **lift systems for SHEVS and aeration function**
- 12 servo-motorised openers as **power opening units**
- **Implementation** of the complete **SHEVS and ventilation control**



LAMILUX CI System

Glass Architecture PR60

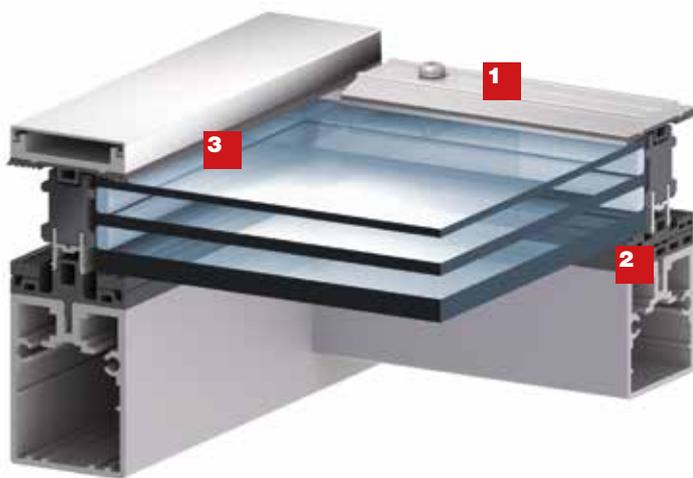
See also page 33
LAMILUX CI System Smoke Lift M





SUPERIOR PROFILE SYSTEMS CI SYSTEM GLASS ARCHITECTURE PR60

LAMILUX glass roofs are an integral part of energy-efficient building shells. Freedom of design for achieving a perfect balance between daylight incidence and light control, sun protection and heat insulation, as well as sound insulation and glare protection. In the energy-related consideration of a thermal isolated design, the focus is on all of the components: from the glazing, through the profiles, to the lift systems for natural aeration and ventilation.



- 1 STYLING AND SAFETY**
Cover strips with surge-water management (optionally with a cover profile)
- 2 ENERGY EFFICIENCY**
NEW: optimised insulating core
- 3 ENERGY EFFICIENCY AND SAFETY**
Continuous EPDM-seal

Freedom of design and excellent thermal insulation

The profiles in the **LAMILUX CI System Glass Architecture PR60** form the basis for a highly adaptable system that allows almost unlimited freedom of design. The supporting structure consists of high quality aluminium. The profile systems feature highly efficient thermal insulation (optionally Passive House standard).

Integrated lift systems for natural aeration and ventilation contribute significantly to optimising the building climate. For the purposes of preventive fire protection they make a major contribution to building safety as smoke and heat exhaust ventilation systems (SHEVS).



ENERGY EFFICIENCY

Thermally isolated and thermally insulated profile system – optionally with the highest Passive House efficiency class

Building-specific, energetically optimised glazing with a ‘warm edge’

Integration of highly airtight lift systems for natural aeration and ventilation

Integration of pane-integrated PV systems

COMFORT

Integration of controllable and permanent sun protection systems

Integration of programmed controllers and sensor-dependent automation for the ventilation lifts and sunshade control
High level of sound insulation

DESIGN

Individual freedom of design

Adaptable system for large-scale structures

Premium and filigree appearance

Smooth and clean processing

SAFETY

Actuation of the lift systems as a SHEVS system

Excellent system stability

Permanent fall-through proofing

Tight against driving rain (class E 1200 EN 12208) and high air tightness



HIGHEST EFFICIENCY CLASS LAMILUX CI SYSTEM GLASS ARCHITECTURE PR60_{energysave}

LAMILUX CI System Glass Architecture PR 60_{energysave} sets energy standards for sloped glazing and embodies LAMILUX's high energy efficiency promise.

- First sloped glazing certified in line with the Passive House standard
- Highest Passive House energy efficiency class – phA advanced component
- Heat-transmission coefficient (U_{CWf}) of just 0.81 W/(m² K)
- High solar gain
- Thermal characteristics calculated on the basis of DIN EN ISO 10077-1 and 10077-2

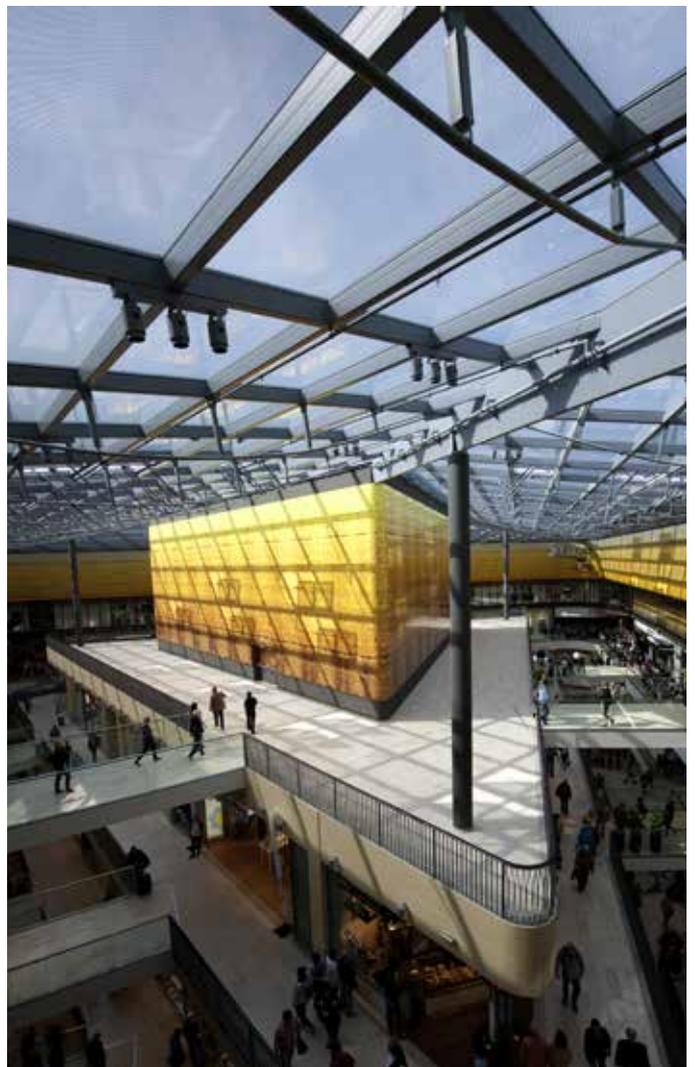
PASSIVE HOUSE CERTIFICATION

in the highest class, phA





Best Practices



ACADEMY OF MUSIC Munich

The Munich Academy of Music clearly shows the energy-savings that LAMILUX glass roof structures offer, when it comes to energy-saving refurbishment of existing buildings:

To achieve a significant reduction in the primary energy requirements for the representative, public building, two hipped roofs, each 22 metres long and 14 metres wide, were fitted with a 20° inclination on the support structure which was revitalised with strengthening measures and visual refinements.

The new systems replace two old glass roof structures with wired glass. Additionally, 24 lift systems for ventilation and SHEVs were integrated (CI system ventilation flap M type). The result: Two highly-insulated daylight systems for high level of daylight incidence.

The integration of ventilation lifts ensures a controllable indoor climate.

THIER GALLERY Dortmund

The ‘Thier Gallery’ is located the heart of Dortmund’s inner city. The most impressive architectural feature in the building, which cost 300 million euros to construct, is a large-scale, triangular glass roof by LAMILUX which spans the central public area with a glazed area of 2,300 square metres.

Due to the high levels of incident daylight combined with variably controllable and conveniently actuated lift systems for natural ventilation, the central roof contributes significantly to building management that is characterised by energy efficiency and sustainability.

LAMILUX planned and also implemented all the SHEVS systems and technical control facilities in the mall and stairwells.



FORUM MITTELRHEIN Koblenz

LAMILUX designed and manufactured five glass roofs for the light openings in the roofs for developer ECE who built the shopping mall. The individually designed jamb and transom structures are designed as warm facades with thermally insulated system profiles and a roof inclination of 10°.

ECE is known for strict sustainability requirements in the numerous shopping mall projects it has developed in Germany and Europe. The five glass roofs thus provide bright natural light over a large area.

In this free design, the supporting structure in each case is a supporting grid of rectangular hollow aluminium profiles that rests at regular intervals on the supporting traverses. The subdivision has axial dimensions of 3 metres by 1 metre.

High energy efficiency and building safety

The glazing consists of double panes of ceramic-printed heat insulation glazing with a U_g value of 1.1 W/(m² K). In order to reduce solar heat intake, the panes have a uniform dot matrix with a flat printing scope of 20 percent, so that the light transmission is 61 percent. The total energy permeability is 47 percent.

In total there are 238 panes (65 of them sashes) measuring 3 metres by 1 metre and 103 special panes with a freely designed shape in the five supporting structures, as well as 70 fixed panes which were used in the outline contours. For smoke and heat extraction and energy-efficient natural ventilation of the shopping mall, a total of 60 **LAMILUX CI System Smoke Lift M** type lift systems are integrated in the five glass roofs. They are each driven by two pneumatic cylinders.

LAMILUX smoke

and heat exhaust ventilation systems





LAMILUX CI SYSTEM SMOKE LIFT F100

Natural smoke and heat exhaust devices (NSHED) save lives and protect property. LAMILUX SHEVS systems stand for safety compliance with EN 12101-2, DIN 18232, industrial building regulations (IndBauR) and various VdS rules.

SHEVS systems are today important components of fire protection concepts. They are prescribed as fire prevention measures.

CI System Smoke Lift Open/Closed

The smoke and heat exhaust ventilation system is opened and closed with CO₂ or compressed air.

The optional closing system is used for simple, pneumatic closing after a functional test or inadvertent triggering via the alarm box. The advantage: no need to close domes via the roof – a time-consuming operation. Thermal actuation with CO₂ cylinders – no damage caused by tests or false alarms.

CI System Sandwich Lift/Smoke Lift SW

Smoke lift required! – Light incidence not desired? This is where LAMILUX sandwich flaps are used.

Their benefits: high level of soundproofing and heat insulation. Perfectly suited for extreme climatic conditions.

- GRP material, white pigmented throughout
- Hard-foam heat insulated and with weatherproof external sealing
- SHEVS design identical to **LAMILUX CI System Smoke Lift F100** as per EN 12101-2.



LAMILUX CI SYSTEM SMOKE LIFT DH

This SHEVS drive system was specially designed for use with LAMILUX rooflight domes.

The power unit electrically opens rooflight domes up to a size of 150 x 150 cm to 172° in less than 60 seconds. The 24 V or 230 V gear rack drive in combination with a rooflight dome is tested for a service life of 11,000 double strokes.

- Rooflight dome fittings with integrated 24 V or 230 V opening device
- Large opening width of 172°
- Fast opening within 60 seconds
- Can be used for SHEVS and ventilation
- Low power consumption

LAMILUX CI SYSTEM SMOKE LIFT ME

CI System Double Flap ME combines a SHEV function (smoke extraction as per EN 12101-2), high daylight intake and natural ventilation in a compact system.

Double lifts can be provided in very large formats, thus featuring a highly effective, aerodynamic smoke extraction area. This daylight system is also designed to incorporate the frequently used fair weather ventilation system.

Driven by a pneumatic system or an electrical motor (24 V in compliance with EN 12101-2 or 230 V), ventilation flaps can be opened up to an angle of 90°.

- Smoke evacuation acc. to EN 12101-2
- Watertight against driving rain (Class E, 1200 EN 12208)
- Resistance against wind load (Class C4/B5 EN 12210)
- Excellent heat insulation (U_g values of 1.1 to 0.6 W/(m² K) as per EN 673)
- Total energy permeability g of between 18 and 78 percent
- High air impermeability (Class 4 EN 12207)
- Adverse weather ventilation optional



LAMILUX CI SYSTEM SMOKE LIFT B AND S

LAMILUX continuous rooflights are fitted with smoke and heat exhaust ventilation systems that fulfil the requirements of EN 12101-2 for preventive fire protection.

Single or double lifts, which can be actuated for normal and fair weather ventilation, are integrated to provide a smoke and heat ventilation system.

Just like the overall design of the continuous rooflights, the lift systems are also thermally decoupled and thus meet the highest standards of energy efficiency.

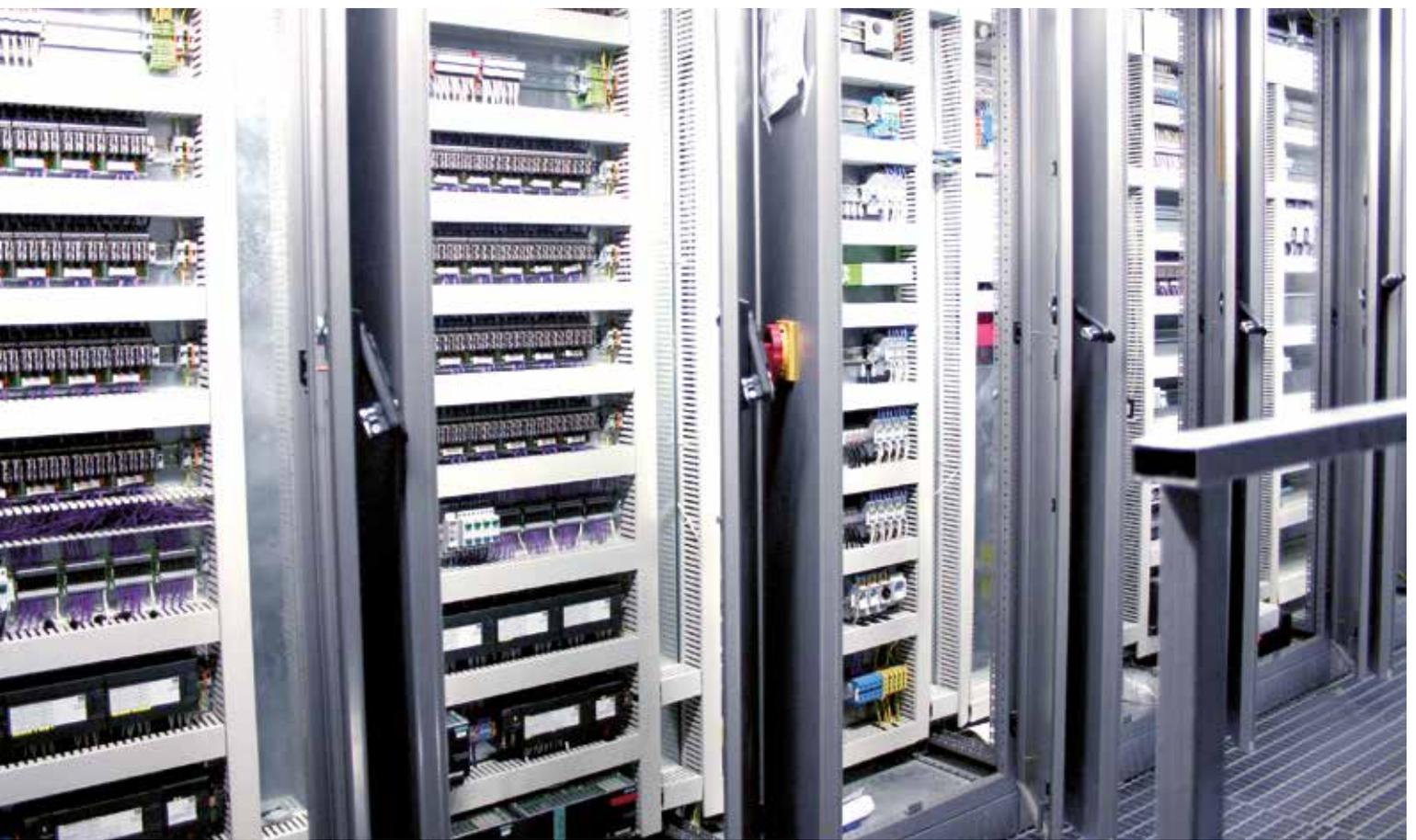
- Suitable as a melt-out roof surface in accordance with DIN 18230, and available as 'hard roofing' upon request; in accordance with DIN 4102 Part 7, resistant to flying sparks and radiated heat
- Excellent heat-insulation values
- Thermal actuation with CO₂ cylinders – no damage caused by tests or false alarms.
- SHEVS and ventilation with double or single lift

LAMILUX CI SYSTEM SMOKE LIFT M

This smoke and heat extraction unit is the perfect complement for the safe SHEVS function in freely designable glass roofs of the LAMILUX CI System Glass Architecture PR60 type.

The sash system can be continuously integrated into the glass roof structures at inclinations of 0 ° to 90 °.

- Custom leaf width and height
- Complies with EN 12101-2
- Variable opening and drive systems that can be combined with daily ventilation and exhaust ventilation with CO₂ or 24 V types
- Ideally complements **CI System Glass Architecture PR 60**
- Perfectly suited for retrofitting as it can be installed in other systems



LAMILUX BUILDING CONTROLS SAFETY – ENERGY EFFICIENCY – BUILDING CONVENIENCE

The safety, energy efficiency and convenience of a building are significantly determined by the building controls. They are the key to sustainable, value-oriented, forward looking building.

LAMILUX plans and implements the technical equipment for buildings with complex and functionally networked building controls. As a specialist with many years' experience in projects of small to the largest dimensions, we ensure intelligent controls and automation, fire safety, energy efficiency and building convenience.

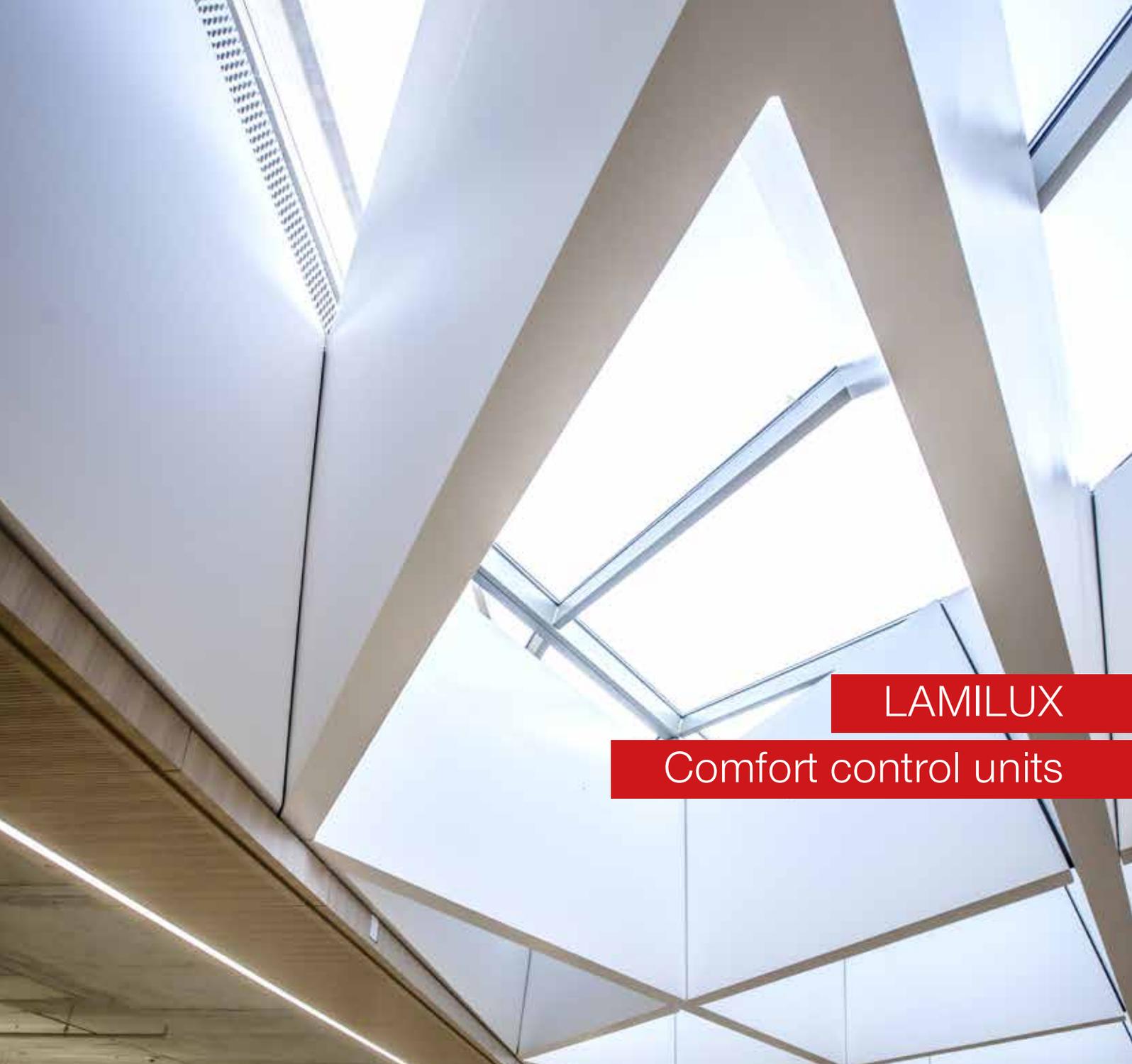
From a single source in all phases of your project

From the small control solution to complex building automation in large buildings – LAMILUX's offers a full range of services from a single source, even across maintenance groups, thus ensuring reliable implementation: from the planning and design of the electrical or pneumatic control systems and components, to installation, commissioning and maintenance.

Our systems let you control

- Smoke and heat exhaust systems
- Lift systems for natural aeration and ventilation
- Sun protection and light control
- Sensor-controlled electric lighting circuits
- Temperature-dependent circuits for mechanical air-conditioning units

and **you also benefit from intelligent networking of building safety, energy efficiency and building convenience.**



LAMILUX

Comfort control units



LAMILUX Wireless Professional

The intelligent, automated remote control for natural ventilation, which in the basic version already monitors the outside temperature, the wind speed and precipitation.



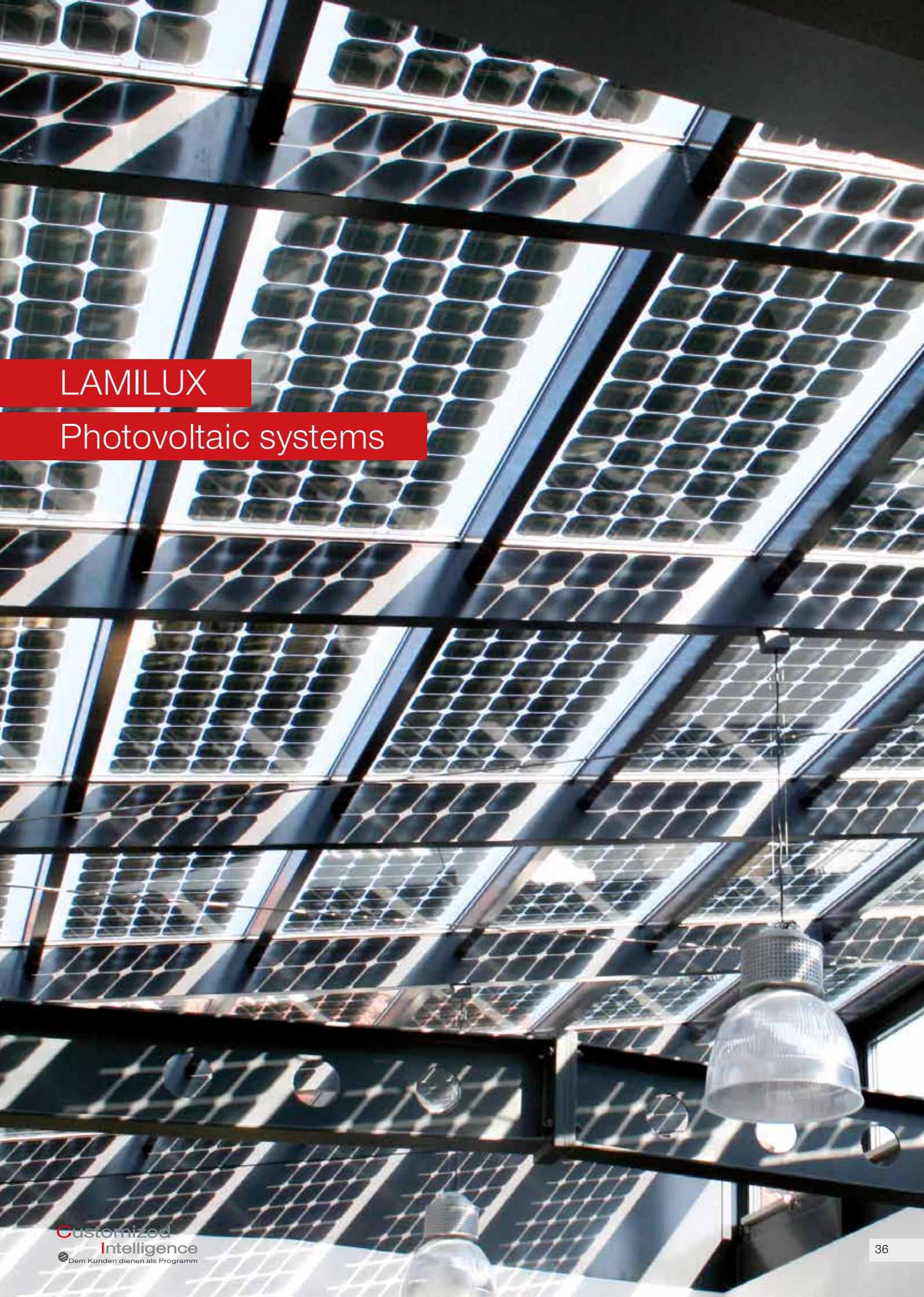
LAMILUX Plus Standard

The intelligent system with intuitively usable control panels and numerous sensor and time-dependent automation options for ventilation and sun protection.



LAMILUX Plus Professional

The versatile system for centralised control of up to 32 ventilation groups: the ideal solution for central management of natural aeration and ventilation in many rooms of office and administrative buildings.

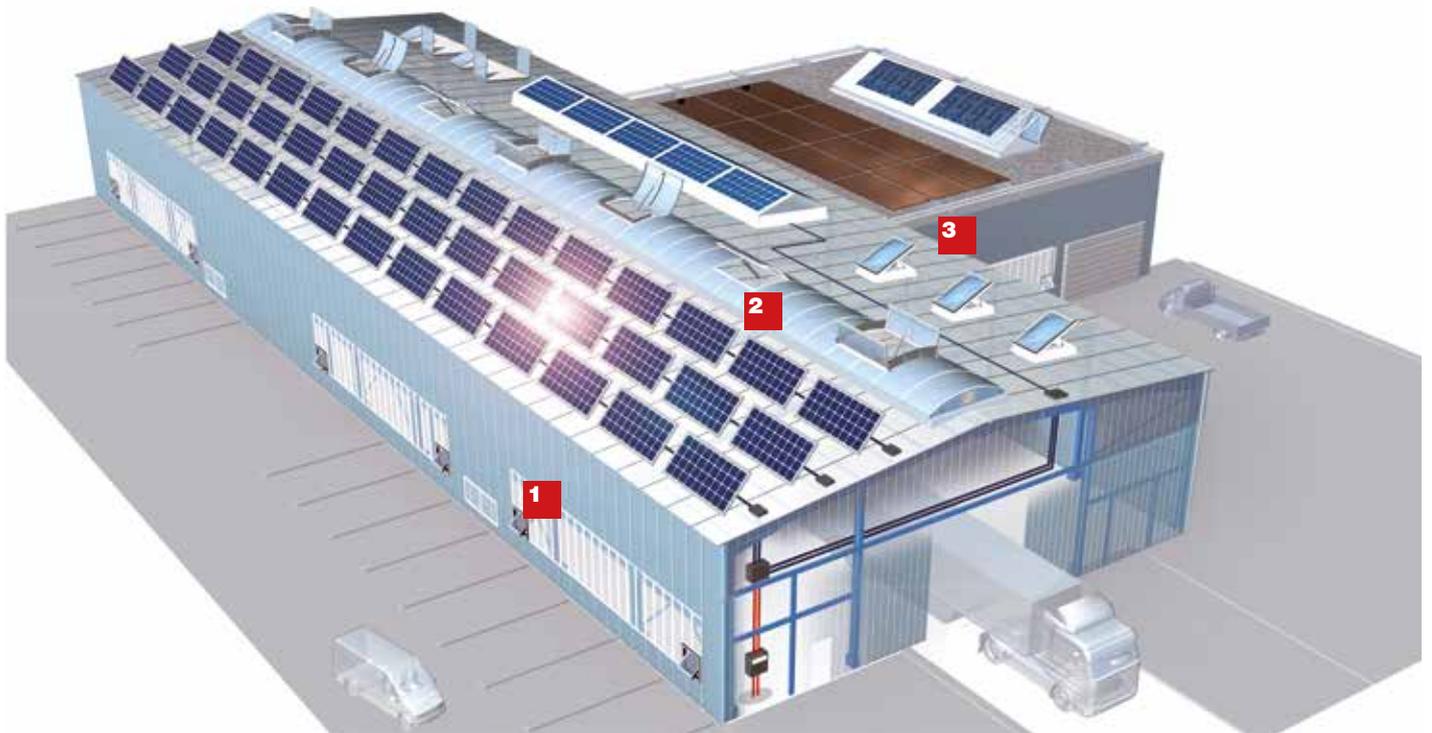


LAMILUX

Photovoltaic systems

INTELLIGENT USE OF SOLAR POTENTIALS

By integrating photovoltaic modules into our daylight elements or installing them as a separate system on flat roofs, we are able to actually provide energy gain. Generate electricity without harming the environment – and benefit from attractive power purchase prices.



1 Flat roof photovoltaics

2 Shed roof photovoltaics

3 Pane-integrated photovoltaics

Comprehensive: We have a great deal of knowledge about the structural requirements for integrated components on flat roofs: wind load, snow load, stability.

Matched: We combine all solar potentials: daylight incidence, controlled solar heat load, solar energy production.

Individual: We have our own energy consultants. This means that we perfectly dimension the PV system.

Expertise: We ensure smooth plant operation without system failure: thanks to our decades of experience.



LAMILUX

Maintenance and renovation

LAMILUX CI SYSTEM CONTINUOUS ROOFLIGHT WALLS OF LIGHT THAT SAVE POWER

The window walls system from LAMILUX enables energy-optimised, break-proof glazing of lateral light surfaces. Non-supporting walls can thus be used as lighting, ventilation, and smoke and heat extraction surfaces.

Our **CI System Window Walls** make optimum use of daylight through lateral light incidence. This allows an architecturally clear arrangement of the facade and can be implemented in two ways: on the one hand as a shed glazing, on the other hand, as a front-wall façade or as a window light in the reveal.

- Various window types and glazing with a wide variety of opening options available
- Natural smoke and heat exhaust device as per EN 12101-2 upon request
- Casements with appropriate actuation as fresh air openings according to DIN 18232-2
- Option: Power-saver panel (6 layers) with a U value of 1.3 W(m² K)
- Clear or translucent panels
- Cost-cutting, fast installation
- Low maintenance requirement
- Thermally isolated frame systems as an option



LAMILUX REDEVELOPMENT

Retrofitting of daylight systems with LAMILUX means: All processes flow transparently in with a customer-specific and results-oriented approach – from planning through to installation.

We record the many parameters involved in retrofitting using a detailed checklist and then practically implement the clearly defined steps in good time.

Due to our decades of experience, our product variety and a great degree of flexibility, we offer you the most technically convincing, sophisticated and yet most economical solution..

The LAMILUX complete package renovation:

- Survey by LAMILUX
- Clarification of the requirements, for example, in terms of daylight, smoke extraction, building use, etc.
- Drafting of a proposal
- Coordination of the agreed actions
- Installation, also including control technology
- Maintenance in line with the applicable guidelines
- Short renovation times
- Removal and installation without interrupting production
- High level of planning and cost assurance

LAMILUX MAINTENANCE

Smoke and heat ventilation systems must trigger and respond quickly and correctly in case of fire. This means: 100 percent reliability and functionality of the SHEV system.

Regular maintenance is a must for SHEV system operators, as you are legally required to take any necessary measures to keep people out of danger in case of fire.

Key maintenance items:

- Examination of complete system for modifications performed by owner
- Test deployment via CO₂ pipes
- Testing of electrical wiring and accumulators
- Determining the degree of filling of CO₂ cylinders
- Inspection of screw connections
- Checking of moving parts, such as plungers on pneumatic cylinders
- Cleaning of SHEVS to remove dust, oily deposits and corrosion
- Complete activation of the SHEVS system via a group triggering point (alarm box)
- Transparent documentation of the work performed



Scan this to discover more about
LAMILUX daylight systems!



ROOFLIGHT DOME F100



CONTINUOUS ROOFLIGHT B



LIGHT PANEL



GLASS ARCHITECTURE PR 60



CONTROL TECHNOLOGY



FRESH AIR SUPPLY DEVICES



GLASS ELEMENT F



CONTINUOUS ROOFLIGHT S



BUILDING UPGRADES



SMOKE AND HEAT
VENTILATION SYSTEMS



PHOTOVOLTAICS



FIBRE-REINFORCED PLASTICS

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 for technical specifications. This particularly applies to changes in installation locations, or if dimensions are re-measured on site.



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