



CI System Continuous Rooflight S

Cutting edge technology constructive - energy efficient - aesthetic



LAMILUX CI System Continuous Rooflight S

The first thermally separated continuous gabled rooflight with plastic glazing as standard

NEW: complete thermal separation

Using new materials means we can provide a completely thermally separated design, ensuring the highest energy efficiency standards in modern industrial and office buildings.

NEW: a wide range of glazing

The high level of energy-saving incident daylight can be perfectly adapted to the building's use thanks to a wide range of available glazing.

NEW: even more robust and stable

The continuous rooflight design can withstand the strongest winds and heaviest snowfall thanks to innovative system components such as the Bionic Dynamic Tension technology (BDS).

With the LAMILUX CI-System Continuous Rooflight S, we have developed a continuous daylight system designed for gabled roofs on industrial and office buildings using cutting edge technology. Our aim as one of the most experienced manufacturers? A stable and aesthetic design for the energy-efficient and sustainable construction of the future! <</p>

Dipl. Ing. Joachim Hessemer, Technical Director LAMILUX daylight elements



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





ENERGY EFFICIENCY

- NEW: thermally separated, self-supporting post and beam design and thermally separated lift systems
- NEW: Isothermal Load Converter (ITL) a component for the use of highly heat-insulating materials at the base point
- plastic glazing (plate thickness 10 to 32 millimetres) adapted to the building's specific energy requirements with excellent heat transfer coefficients up to 1.2 W/(m²K)
- high levels of energy-saving incident daylight and controllable solar heat input
- energy-efficient, natural ventilation

DESIGN

- architecturally attractive design for gable roofs
- modern overall impression of future-oriented building

SAFETY

- NEW: Bionic Dynamic Tensioning technology (BDS) in the ridge area for flexible force/stress equalisation in the case of strong winds and heavy snow
- **NEW:** Active Expansion Absorber (ADA) for absorbing expansion between seals and tension belts in the support mullions
- NEW: Dynamic Torque Control (DMR) for stress-optimised and safe positioning of the glazing in the lift systems
- NEW: modular lift systems available in various sizes for ideally sized smoke outlet surfaces
- NEW: Linear Burn-Out Protection (LDS) to prevent fire spreading on the roof
- Integration of smoke and heat exhaust ventilation systems (SHEVS) and SHEVS controls

LAMILUX CI-System Continuous Rooflight S

High-quality components for the energy-conscious and sustainable construction of the future





Optimised thermal properties for consistent heat insulation zones with no weak spots provide superior heat protection in all sections throughout the structure: evidence of optimum energy efficiency. LAMILUX calls this thermal bridge-free product concept
TIP: Total Insulated Product. (in line with ISO 14021)

You can find more detailed technical information on our website at http://www.lamilux.de



For flexible force/stress equalisation in the overall system

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LAMILUX CI System Continuous Rooflight S

The variants

С

Flexibility for modern buildings and renovations

Energy efficiency and modern design, as well as the use of sustainable building elements, dominate new builds and renovations of industrial, sports and exhibition halls. The three variants of the LAMILUX CI-System Continuous Rooflight S provide architectural flexibility in both aesthetic and functional planning.

LAMILUX CI-System Continuous Rooflight S30

The gable roof continuous rooflight is designed with an inclination of 30 degrees at the base point. This variant harmonises well with the roofscape. There are no limits to the integration of modular lift systems for SHEVS and ventilation.



LAMILUX CI-System Continuous Rooflight S₄₅

The 45 degree variant provides a high level of flexibility when integrating SHEVS devices. The steeper shape creates a larger surface for installing lift systems, and therefore also extra smoke and heat exhaust surface.



LAMILUX CI-System Continuous Rooflight S30/60

The design of the continuous rooflight in the shape of a saw-tooth roof enables the integration of photovoltaic systems. Photovoltaic modules can be affixed to the wide saw-tooth ridge thanks to the very supportive framing construction.





The Bionic Dynamic Tensioning Technology - BDS

The Bionic Dynamic Tensioning technology (BDS) is a completely new building principle for the ridges of gable roof-shape continuous rooflight designs. The mode of action is based on the ability of nature to produce integrated form and function, and creates flexible force/stress equalisation in the case of heavy loads on the overall structure.

The principle

In a hybrid structure, there are rigid, elastic and semi-elastic areas in the ridge in zones made up of several materials. In addition to clamp and static interlocking connectors, components are also connected using friction-weld seals, for example. This creates an elastic and simultaneously resistant flush structure.



The positive effect

Components are prevented from both excessively drifting apart or being pushed together under vertical and horizontal pressure and tension loads, so that they remain connected within specified motion and displacement tolerances. The continuous rooflight system remains torsionally stable, and thus tight and secure, even when subjected to strong winds and heavy snow.

BDS - flexible force/stress equalisation

- + flush connection of the ridge area made up of elastic, rigid and semi-elastic zones
- + bionic construction principle through the design integrating form and function
- + continuous rooflight system withstands very strong winds and heavy snow





The Active Expansion Absorber – ADA

Non-slipping seals even under high loads

The Active Expansion Absorber (ADA) ensures a permanently tightly-sealed connection between the cover strips and the glazing. It prevents the seals slipping in the support mullion area, even under strong wind suction forces and heavy snow.

The principle

The Active Expansion Absorber (ADA) compensates for the stresses and strains caused by loads. The seals are also firmly bonded with the cover strips all-round.

The positive effect

Optimal protection of the structure in snow, ice, wind and excessive heat.

AEA - Safety aspects in detail

- + The cover strips are equipped with integrated guide rails so that fittings, sun protection systems and maintenance equipment can be affixed.
- + Clamping reliability is increased through an extended adhesive area.







The Isothermal Load Converter – ITL

The perfect thermal isolation

The Isothermic Load Converter (ITL) is the essential component in the base section of the continuous rooflight that allows you to do away with heat-conductive metallic components.

The principle

The Isothermic Load Converter (ITL) channels the load on the continuous rooflight into the supporting structure. As this frees up the base section from loads and stresses, metallic material can be dispensed with and high-quality quality plastic with excellent thermal insulation values used for the base section.

The positive effect

ITL technology means that we are able to guarantee optimised temperature patterns and thus ensure a minimal risk of condensation on the base profile of the continuous rooflight.

ITL - Benefit from optimum energy efficiency

- + excellent U_f values in the base profile and even better thermal insulation
- + improved load bearing capacity in the base profile
- + significantly reduced risk of condensation
- + optimised rebate ventilation
- + smooth interior with few edges, which ensure less dirt and grime
- + torsion-resistant box profile cross section





Active energy management with daylight systems

The efficient use of energy also shapes modern and sustainable building methods in industrial, office and hall construction. LAMILUX daylight systems are streamlined for energy efficiency – in many different ways:

- saving energy through extensive natural incident light
- preserving energy through outstanding thermal insulation properties
- controlling energy through intelligently designed controls and automation of the lift systems for natural ventilation and for sun protection facilities
- yielding energy through integrated or affixed photovoltaic systems

The LAMILUX CI-System Continuous Rooflight S is the ultimate statement of our commitment to optimising energy performance standards for building skins, using daylight systems.



The LAMILUX CI-System Continuous Rooflight S is a Total Insulated Product (TIP). This means:

- The inner and outer metallic components, both in the supporting structure and the lift systems, are thermally isolated from one another.
- Use of the Isothermal Load Converter (ITL) a component for the use of highly heat-insulating materials at the base point
- Glazing with the lowest heat transfer coefficients in plastic glazing





Optimised isothermal lines to combat condensation

Isotherm lines describe lines of equal temperature. With the LAMILUX CI-System Continuous Rooflight S, the structurally relevant 10°C isotherm line runs at a constant throughout the structure. Our guarantee: a significantly minimised risk of condensate water (condensation) on the inside of the structure.

The isotherm lines are determined and defined as follows

- Standard conditions have been set out to better explain the condensation risk. According to DIN 4108-2, 'Thermal Protection and Energy Economy in Buildings', these are: 20°C internal temperature, -5°C ambient temperature, 50% relative humidity.
- Assuming the standard conditions are in place, condensate water (condensation) always occurs on the inside of the continuous rooflight where it becomes colder than 10°C.
- The better the design of the continuous rooflight, the less cold is allowed to enter the building, and the warmer the surface of the inside of the continuous rooflight.
- If this surface becomes colder than 10°C at any point, this is precisely where condensation occurs. Condensation means a risk of mould and hoarfrost, and therefore potential damage to the building.
- The temperatures inside the structure can be depicted by what are known as isotherms.
- The line of the 10°C isotherms (the red line in the diagram) provides information on where condensation may occur on the inside of the continuous rooflight, i.e. always where the 10°C isotherms exit the structure.
- The line of the 10°C isotherms is always inside the structure of the LAMILUX CI-System Continuous Rooflight S with corresponding glazing.



with corresponding glazing.

Ridge profile





Gable wall profile



Gable base profile



The comprehensive thermal protection technology throughout the structure ensures the best U_w values. The energy efficiency properties have been verified. This ensures that the constant insulation properties in the continuous rooflight profile are documented.





The Linear Burn-Through Protection – LDS

Safely preventing fire spreading on roofs - in accordance with DIN 18234

Perfectly matched material components in the base profile of the continuous rooflight act against fire spreading on the roof in the case of a fire inside the building – verified in accordance with DIN 18234. With no costly gravel fill at all, the Linear Burn-Through Protection (LDS) prevents the dreaded 'wicking effect' around the skylight opening, and thus also the flames spilling out from the inside to the roof membrane.



The principle

Secured to a framing construction, the roof membrane is usually pulled up to the upstand and fed under the continuous rooflight's base section. In the case of a fire inside the building, the roof membrane often ignites on the inside of the upstand and tends to burn though to the outside of the roof like a wick.

Linear Burn-Through Protection (LDS) can be considered as an intelligent system for limiting the spread of fire by roof penetration. The continuous rooflight profile plays an essential role here: it consists of a thermoplastic material that softens around the upstand under high temperatures, placing itself directly over the burning roof rail edge. This seals off the burning joints, cuts off the oxygen supply and extinguishes the flames at this point.

The positive effect

The LDS prevents flames from spilling out onto the roof. Despite softening due to the high temperatures, the base profile remains stable during the fire, as it is cooled and reinforced by the metal profile of the glass bar.

Customized Intelligence



LDS - Well-engineered fire safety technology

- prevents fire from spreading onto the roof through roof penetration in accordance with specifications in DIN 18232 Part
 4
- + patented technology
- means there is no need to place gravel around the continuous rooflight

Phase 1



The roof membrane is burning like a 'wick' towards the exterior of the roof.

Phase 2



The LDS has now spread over the burning roof membrane and smothered the flames. This prevents burn-through to the exterior of the roof.



Lift Systems for SHEVS and Ventilation

Safety in case of fire, and energy-efficient ventilation

The newly developed LAMILUX CI-System Continuous Rooflight S lift systems offer a wide range of design options. They can be combined so that they form optimally sized surfaces for smoke and heat extraction and natural ventilation in various building-specific arrangements. In addition, they are designed to be thermally isolated and, in conjunction with a welded seal frame, provide a compact, closed sealing level.

Dynamic Torque Control – DMR

The glazing in the lift systems is positioned securely and optimised for tension thanks to another innovative component in the design of the LAMILUX CI-System Continuous Rooflight S – the Dynamic Torque Control (DMR). This results in high stability and reliability even in extreme weather conditions such as strong winds and heavy snow.

The principle

An integrated spring underneath the glass bar in the mounting frame (DMR spring) ensures the glass is well positioned and optimised for tension. This also means that it is secured in position with a specified retention force, even under load.

The positive effect

The glazing remains optimised for tension in all situations and is well secured, as the acting loads are ideally absorbed and taken up by the mounting frame.

DMR - Protection in the event of heavy wind loads

- + high lift stability even when open
- + even better anchorage for the glazing systems



Intelligence



CI-System Ventilation Lift S

The CI-System Ventilation Lift S can be integrated both as an individual lift on one side of the continuous rooflight, and as one on each side. Electric motors (24 volt/230 volt) with a spindle drive or pneumatic drive units with pneumatic cylinders provide manually triggered or control automated opening and closing.

Comfort and energy efficiency

The lift system controls can be automated for energy-efficient ventilation using a wind and rain sensor set as well as additional control components. For example, functions such as fair-weather ventilation and night cooling can be set up using the control matrix.

Optimal rain impermeability through 4-sided welded sealing frame

There is an all-round welded multiple seal system in the mounting frame of the lift systems, with a splash lip and an integrated balloon seal.

The advantages:

- + optimum insulation
- extra safety when installing the continuous rooflight as there is no need to weld separate sealing points, thus eliminating potential failures
- + guaranteed tight sealing for the lift system through dimensional tolerance alignment in the balloon seal



Triple-tiered sealing system

Smoke and heat exhaust ventilation systems in line with DIN EN 12101-2

Smoke and heat exhaust ventilation systems are an essential component of integrated building fire protection concepts.

They keep escape routes clear of smoke for a long time and allow fire personnel access to the interior of the building thanks to their effective extraction capabilities. The CI-System Smoke Lift S fulfils all requirements of DIN EN 12101-2 in its role as a smoke and heat extraction device.

A wide range of lift combinations for market-leading smoke and heat exhaust values

A new technology means that never before seen SHEVS measurements can be achieved in buildings.

Available in a wide range of combination options to create the ideal, building-specific smoke extraction area, the CI-System Smoke Lift S can be integrated as a double or single lift into the continuous rooflight design. In the case of fire, they can be quickly opened via the thermal trigger, thermal and CO₂ remote trigger or electrical remote trigger. The SHEVS lift systems can also be used for ventilation, and controlled electrically/pneumatically.



Smoke Lift SE30 Single Lift



Maximum stability when open

The SHEVS lifts have proven to be an incredibly stable overall system when open and subjected to strong winds, even in the larger sizes.

Smoke Lift SE30 tandem serial SHEVS Example 250/210

Ventilation function in SHEVS devices

All smoke and heat exhaust ventilators can also be combined with ventilation systems.





The Lift Systems

Sizes and technical figures



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CI-System Ventilation Lift SE30 Single Lift

(30° slope to the glazing surfaces)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo 0.53 m ²
100*	120	53	0.63 m ²
150	100	82	0.82 m ²
150*	120	82	0.97 m²
200	100	111	1.11 m ²
200*	120	111	1.31 m²
250	100	140	1.40 m ²
250*	120	140	1.65 m²
300	100	169	1.69 m ²
300*	120	169	1.99 m²



CI-System Smoke Lift SE30 Single Lift

(30° slope to the glazing surfaces)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo	aerodynami- cally effec- tive opening surface
100	100	53	0.53 m²	0.32 m²
100*	120	53	0.63 m²	0.38 m²
150	100	82	0.82 m ²	0.49 m ²
150*	120	82	0.97 m²	0.58 m²
200	100	111	1.11 m ²	0.64 m ²
200*	120	111	1.31 m²	0.76 m²
250	100	140	1.40 m ²	0.80 m ²
250*	120	140	1.65 m²	0.92 m²
300	100	169	1.69 m²	0.95 m ²
300*	120	169	1.99 m²	1.09 m ²



CI-System Ventilation Lift SE45 Single Lift

(45° slope to the glazing surfaces)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo
80	100	53	0.53 m²
80*	120	53	0.63 m²
120	100	82	0.82 m ²
120*	120	82	0.97 m²
160	100	111	1.11 m ²
160*	120	111	1.31 m²
200	100	140	1.40 m ²
200*	120	140	1.65 m²
240	100	169	1.69 m ²
240*	120	169	1.99 m²



CI-System Ventilation Lift SE-SHED60 Single Lift (On the 60° north light side)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo
100	100	53	0.53 m ²
100*	120	53	0.63 m²
150	100	82	0.82 m ²
150*	120	82	0.97 m²
200	100	111	1.11 m ²
200*	120	111	1.31 m²
250	100	140	1.40 m ²
250*	120	140	1.65 m²
300	100	169	1.69 m ²
300*	120	169	1.99 m ²

CI-System Smoke Lift SE45 Single Lift

(45° slope to the glazing surfaces)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo	aerodynami- cally effec- tive opening surface
80	100	53	0.53 m²	0.33 m²
80*	120	53	0.63 m ²	0.38 m²
120	100	82	0.82 m ²	0.51 m²
120*	120	82	0.97 m²	0.58 m²
160	100	111	1.11 m ²	0.67 m ²
160*	120	111	1.31 m²	0.77 m²
200	100	140	1.40 m ²	0.80 m ²
200*	120	140	1.65 m²	0.94 m²
240	100	169	1.69 m²	0.96 m ²
240*	120	169	1.99 m²	1.12 m ²



CI-System Smoke Lift SE-SHED60 Single Lift

(On the 60° north light side)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo	aerodynami- cally effec- tive opening surface
100	100	53	0.53 m²	0.32 m²
100*	120	53	0.63 m²	0.38 m²
150	100	82	0.82 m²	0.49 m²
150*	120	82	0.97 m²	0.58 m²
200	100	111	1.11 m ²	0.64 m ²
200*	120	111	1.31 m²	0.76 m²
250	100	140	1.40 m ²	0.80 m ²
250*	120	140	1.65 m²	0.92 m²
300	100	169	1.69 m ²	0.95 m²
300*	120	169	1.99 m²	1.09 m ²

CI-System Smoke Lift SE30 Double Lift

(30° slope to the glazing surfaces)



CI-System Smoke Lift SD45 Double Lift

(45° slope to the glazing surfaces)

Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo	aerodynami- cally effec-	Upper edge of roof size	Dimension x	Dimension y	Opening surface Ageo	aerodynami- cally effec- tive opening surface
100	100	53	1.02 m²	tive opening surface 0.64 m ²	120	100	82	1.22 m²	0.94 m²
100*	120	53	1.20 m ²	0.75 m²	120*	120	82	1.43 m ²	1.09 m ²
100	200	53	2.09 m ²	1.27 m ²	120	200	82	2.49 m ²	1.84 m ²
100 TS**	420	53	4.24 m ²	2.42 m ²	120 TS**	420	82	5.05 m ²	3.54 m²
150	100	82	1.52 m ²	0.96 m ²	160	100	111	1.63 m ²	1.25 m ²
150*	120	85	1.79 m²	1.11 m²	160*	120	111	1.92 m ²	1.46 m ²
150	200	82	3.12 m ²	1.90 m ²	160	200	111	3.33 m ²	2.47 m ²
150 TS**	420	82	6.32 m ²	3.48 m ²	160 TS**	420	111	6.76 m ²	4.39 m ²
200	100	111	2.02 m ²	1.25 m ²	200	100	140	2.04 m ²	1.51 m²
200*	120	111	2.38 m ²	1.48 m²	200*	120	140	2.40 m ²	1.68 m²
200	200	111	4.14 m ²	2.57 m ²	200	200	140	4.17 m ²	2.71 m ²
200 TS**	420	111	8.40 m ²	4.96 m ²	200 TS**	420	140	8.47 m ²	5.08 m²
250	100	140	2.52 m ²	1.54 m ²	240	100	169	2.45 m ²	1.71 m²
250*	120	140	2.97 m ²	1.84 m²	240*	120	169	2.89 m ²	1.90 m ²
250	200	140	5.17 m ²	3.21 m ²	240	210	169	5.03 m ²	3.02 m ²
250 TS**	420	140	10.48 m ²	6.50 m²	240*	240	169	5.92 m²	3.49 m²
300	100	169	3.02 m ²	1.84 m ²					
300*	120	169	3.56 m²	2.21 m ²					
300	210	169	6.21 m ²	3.85 m ²					
300*	240	169	7.31 m ²	4.53 m ²					

* Only in conjunction with glazing type 32-5 ply PC and 32-5 ply PC + GRP

** tandem serial SHEVS



A wide range of glazing

Whether it's thermal insulation, sound insulation, light transmission or fire behaviour – the LAMILUC CI-System Continuous Rooflight S can adapt beautifully to building-specific requirements with a wide range of glazing options. The standard glazing forms multi-layered, opal polycarbonate sheets in thicknesses of up to 32 millimetres. In addition, very sound-insulating and chemically-resistant glazing can be used.





Glazing made of glass fibre reinforced plastics

Composite 10 mm GRP cavity-resist

LAMILUX is again at the leading edge of the market with the CI-System Continuous Rooflight S wherever it comes to a product's thermal separation and longevity. A new kind of glazing, developed and produced in-house and made of polyester sandwich elements, supports trouble-free integration with the continuous rooflight system.



High level of resilience to weathering and UV

Glazing made of polyester shell elements is highly resistant to UV incidence and weathering due to its special material characteristics.

This continuous rooflight was developed especially for manufacturing environments with a high level of chemical aggressivity below the roof (for example, evaporating cooling lubricants in machining). Brittleness or cracks which chemically aggressive materials could cause in polycarbonates also do not occur in the material in the long term.

The blue translucent gelcoat guarantees an overall level of energy transmission of around 38 per cent.



The optimum, stable structural mount



Mounting on a steel sheet upstand



Mounting on wooden trusses

NOTE: The mounting systems shown in the diagrams are concept drawings for guidance purposes only. The roofing specialist must comply with technical standards for waterproofed roofs, such as flat roof guidelines, when planning and carrying out waterproofing work.

Proven stability

The LAMILUX CI-System Continuous Rooflight S provides roof connection options for steel sheet upstands, laminated timber or reinforced concrete upstands. Verified stability is our primary concern with LAMILUX's own steel sheet upstands. LAMILUX adheres rigidly to the requirements of the German Institute for Building Technology, according to which steel plate upstands such as S 280 GD + Z 275 or S 320 GD + Z 275 must be made out of high-quality steel.



CI-System Continuous Rooflight S – much more than standard



LAMILUX steel sheet upstands and all visible aluminium profiles can be custom coated in RAL colours on request.

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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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