



SMOKE AND HEAT EXHAUST VENTILATION SYSTEMS

SAFETY DUE TO APPROVED SMOKE OUTLET DEVICES – EN COMPLIANT AND ECONOMICAL

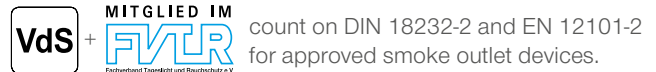
APPROVED SMOKE OUTLET DEVICES

- ... save **LIVES**
- ... protect **PROPERTY**
- ... reduce **COMPANY RISKS**
- ... offer **ADDED VALUE**

and ensure **SAFETY!**

Experts in fire service associations, insurance associations and the German Daylight and Smoke Protection Trade Association (FVLR) all agree: Only approved smoke outlet devices ensure real safety in case of fire.

- They are designed in line with DIN 18232-2 and certified as per EN 12101-2.
- They prevent rooms filling with smoke.
- They reliably ensure a smoke-free layer.
- They contain the fire scenario and minimise its consequences.



SHEV SYSTEMS – ESSENTIAL FOR SURVIVAL

Approved smoke outlet via natural smoke and heat exhaust ventilation systems (SHEVS) is only guaranteed to be safe and efficient if it complies with specifications in DIN 18232-2 or is designed based on suitable engineering procedures.

These systems use thermal buoyancy to channel smoke, heat and toxic gases into the open air. As fresh air is drawn in, a smoke-free layer forms near the ground,

- enabling people to escape to the outside.
- providing clear view for rescue services to help captured people and extinguishing the fire.



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:

Customized Intelligence - Serving the customer is our first priority:

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

- **Leader in quality** – for the highest customer benefit
- **Leader in innovation** – for always being ahead in technology
- **Leader in service** – for fast, straightforward, reliable and friendly communication
- **Leader in expertise** – for the best technical and commercial advice on the market
- **Leader in problem solving** – for custom made solutions



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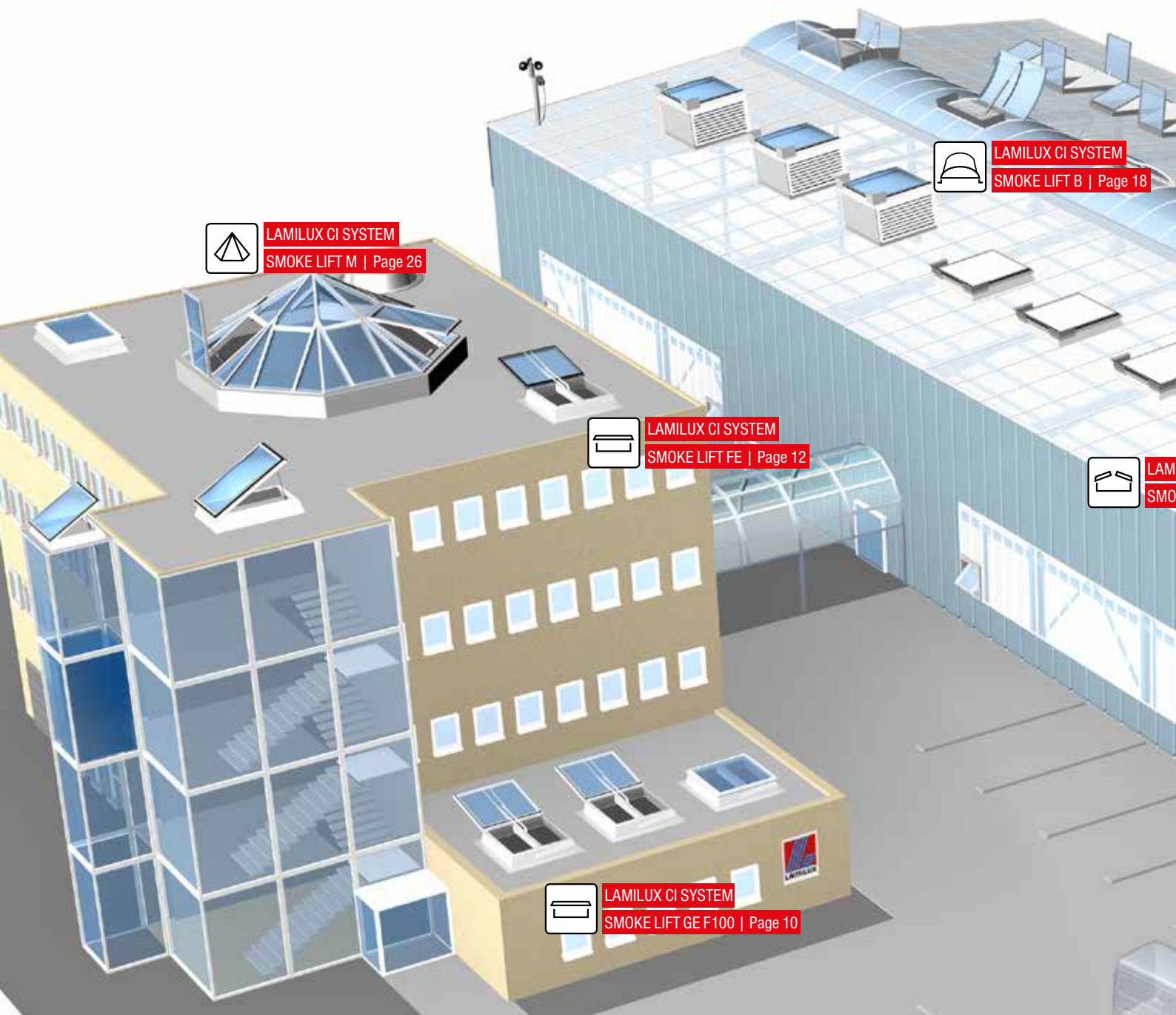
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APPROVED SMOKE OUTLET DEVICES FOR YOUR DAYLIGHT SOLUTION



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DRIVE FOR SHEV AND VENTILATION

■ SMOKE AND HEAT VENTILATION

■ VENTILATION

PNEUMATIC

■ CO₂ ■ bar

ADVANTAGES:

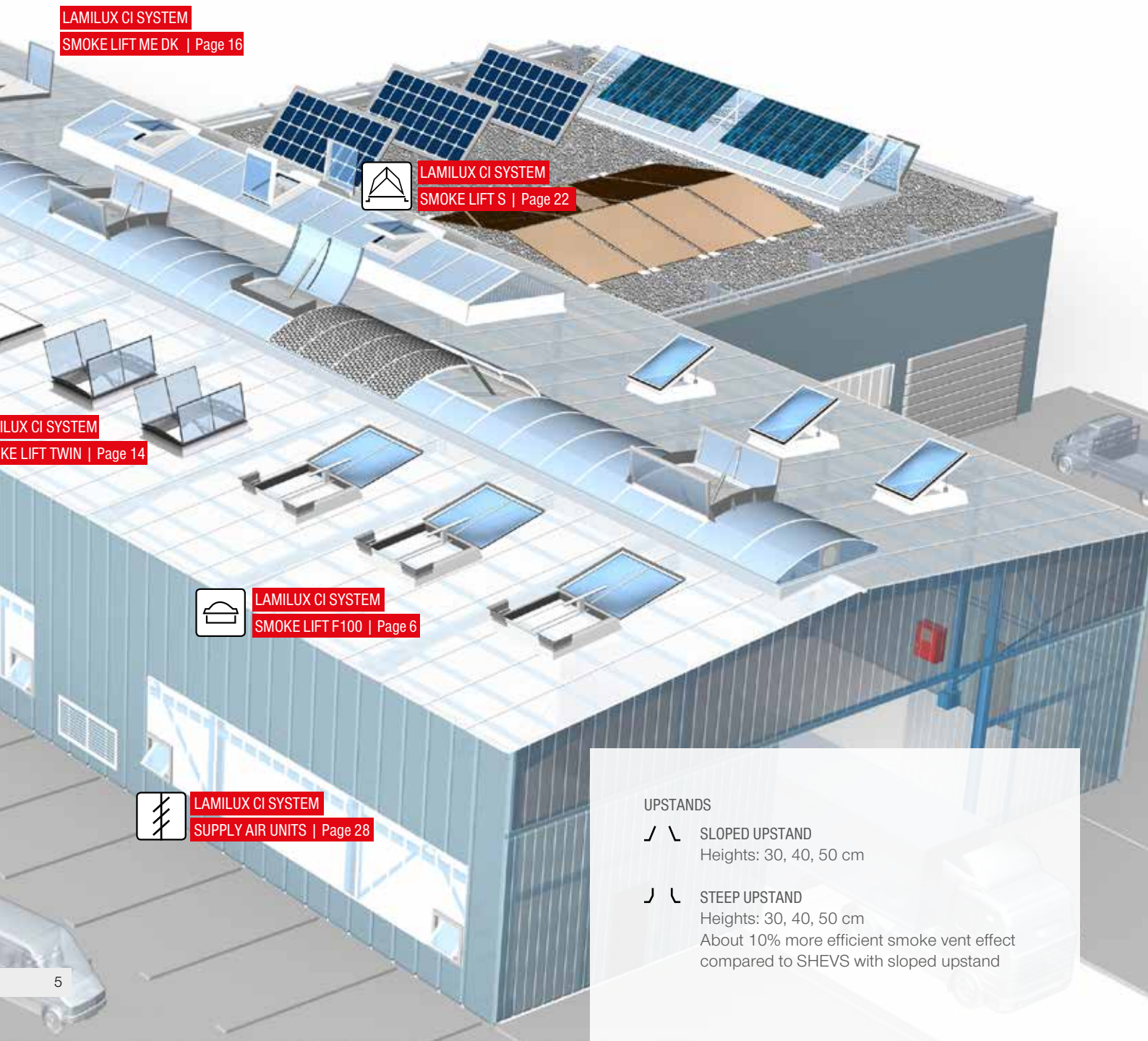
- Fast opening speeds

ELECTRIC


■ 24V ■ 48 V ■ 230V ■ 24V ■ 48 V ■ 230V

ADVANTAGES:

- Drive available for ventilation and SHEV
- Circuit monitoring
- Control switches on smoke and heat exhaust systems offer simple display of system status



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
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SUPPLY AIR UNITS | Page 28

UPSTANDS

 SLOPED UPSTAND
Heights: 30, 40, 50 cm

 STEEP UPSTAND
Heights: 30, 40, 50 cm
About 10% more efficient smoke vent effect compared to SHEVS with sloped upstand

LAMILUX CI SYSTEM
SMOKE LIFT F100





VERSATILE AND COST-EFFECTIVE

LAMILUX Smoke Lifts meet fire service requirements for fast, efficient smoke and heat ventilation. However, they also satisfy the constructor's or client's need for an efficient solution.

LAMILUX CI System Smoke Lift F100 consists of an upstand for the roof mount and a glazed upper section. The smoke and heat exhaust ventilation system is much more than an 'off-the-rack product' and offers great diversity and flexibility: Our extensive selection of accessories helps us to match LAMILUX Smoke Lift F100 to individual requirements, customer wishes and structural conditions.

Optimum safety and reliability in extreme situations offered by our natural SHEV systems (NSHEVS).

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...



... and ensure high smoke outlet volumes

Flow rate coefficient C_v between 0.60 and 0.75 - Aerodynamically effective opening surface A_w between 0.6 m² and 4.05 m²



... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position

RE 50/1000
+ 10,000 ventilation opening activations



... under snow load

SL 500 - 2400



... down to an indoor temperature of -15 °C

T(-15)



... after exposure to wind suction (up to 150 kg/m²)

WL 1500



... when exposed to fire

B300

HOW YOU BENEFIT

LAMILUX CI System Smoke Lift F100

- Tested in line with DIN EN 12101-2
- Does not strike against the roof when triggered during testing or by false alarm
- CO₂ cartridges in the heat exhaust unit are not damaged during central triggering
- Complies with DIN 18234 at no extra cost or effort (see page 8)



DIN 18234 – EASILY ACHIEVED WITH LAMILUX

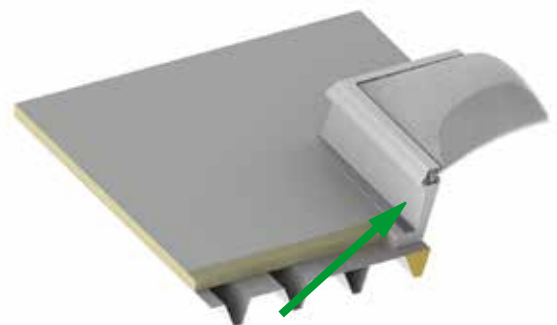
DIN 18234 is fast becoming the established standard for flat roofs. In recent years, its scope of application has expanded considerably. It is no longer limited to exclusively industrial buildings. Moreover, roofs can also be tested and classified regarding preventive fire protection in terms of limiting fire spread on roofs.

Heavy surface protection



Heat insulation in compliance with
DIN 18234-3, 4.1

LAMILUX SOLUTION



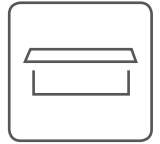
Upstand with heat-insulated base
flange and hard PVC connecting rail

| SIZES | A _w VALUES (m ²) SLOPED UPSTAND | | | | A _w VALUES (m ²) STEEP UPSTAND WITH SPOILER | | | |
|---------|---|------|------|------|---|------|------|------|
| | | | / | \ | | | / | \ |
| | CO ₂ | 24 V | 48 V | 230V | CO ₂ | 24 V | 48 V | 230V |
| 100/100 | 0.60 | 0.60 | | | 0.75 | 0.71 | 0.75 | |
| 100/150 | 0.90 | 0.90 | | | 1.13 | 1.08 | 1.13 | |
| 100/200 | 1.30 | 1.24 | | | 1.50 | 1.44 | 1.50 | |
| 100/240 | 1.56 | 1.51 | | | 1.80 | 1.73 | 1.80 | |
| 100/250 | 1.63 | 1.58 | | | 1.88 | 1.80 | 1.88 | |
| 100/300 | 1.95 | 1.83 | | | 2.25 | 2.07 | 2.25 | |
| 120/120 | 0.94 | 0.88 | 0.94 | | 1.08 | 1.02 | 1.08 | |
| 120/150 | 1.17 | 1.12 | 1.17 | | 1.35 | 1.30 | 1.35 | |
| 120/180 | 1.40 | 1.36 | 1.40 | | 1.62 | 1.56 | 1.62 | |
| 120/240 | 1.87 | 1.87 | 1.87 | | 2.16 | 2.10 | 2.16 | |
| 120/300 | 2.34 | 2.23 | 2.34 | | 2.70 | 2.56 | 2.70 | |
| 125/125 | 1.02 | 0.97 | 1.02 | | 1.17 | 1.11 | 1.17 | |
| 125/250 | 2.03 | 2.03 | 2.03 | | 2.34 | 2.28 | 2.34 | |
| 150/150 | 1.46 | 1.42 | 1.46 | | 1.69 | 1.62 | 1.69 | |
| 150/180 | 1.76 | 1.73 | 1.76 | | 2.03 | 1.97 | 2.03 | |
| 150/200 | 1.95 | 1.95 | 1.95 | | 2.25 | 2.19 | 2.25 | |
| 150/210 | 2.05 | 2.05 | 2.05 | | 2.36 | 2.30 | 2.36 | |
| 150/240 | 2.34 | 2.34 | 2.34 | | 2.70 | 2.63 | 2.70 | |
| 150/250 | 2.44 | 2.44 | 2.44 | | 2.81 | 2.74 | 2.81 | |
| 150/300 | 2.93 | 2.84 | 2.93 | | 3.38 | 3.20 | 3.38 | |
| 180/180 | 2.11 | 2.11 | | | 2.43 | 2.37 | | |
| 180/240 | 2.81 | 2.81 | | | 3.24 | 3.15 | | |
| 180/250 | 2.93 | 2.93 | | | 3.38 | 3.33 | | |
| 180/270 | 3.16 | | | | 3.65 | 2.92 | | |
| 180/300 | 3.51 | | | | 4.05 | | | |
| 200/200 | 2.60 | 2.60 | | | 3.00 | | | |

LAMILUX CI SYSTEM
SMOKE LIFT GE F100



Please note; The SHEV fitting can be supplied in white for an additional charge.



PERFECT COMBINATION: GLASS ELEMENTS WITH SHEV FUNCTION

The newly developed CI System Smoke Lift GE F100 combines the advantages of CI System Glass Element F100 with those of an electric SHEV as per EN 12101-2. In addition to exceptional thermal insulation and an appealing design with white composite frames, this NSHEV (either in 24 V or 48 V) offers **safety and comfort** for living and work spaces.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|--|--|--|
| | ... and ensure high smoke outlet volumes | Flow rate coefficient C_v between 0.60 and 0.65 - Aerodynamically effective opening surface A_w between 0.6 m ² and 1.42 m ² |
| | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 1000 Ventilation 10,000 + + 10,000 ventilation opening activations |
| | ... under snow load | SL 1000 to SL 2000 |
| | ... down to an indoor temperature of -15 °C | T (-15) |
| | ... after exposure to wind suction (up to 150 kg/m ²) | WL1500 |
| | ... when exposed to fire | B 300 |

HOW YOU BENEFIT

LAMILUX CI System Smoke Lift GE F100

- Fall-through-proof in line with GS BAU18
- Multi-stage ventilation fitted as standard
- Easy to close after false signal release
- Hard roofing, non-flammable
- Open/close function as standard
- Available with double or triple thermal insulation glazing with U_g values between 1.1 to 0.7 W/(m²K)
- Structure completely free of thermal bridges with a U_w value between 1.3 and 1.0 W/(m²K), depending on the glazing (as per EN ISO 10077-1 for a reference element measuring 120 x 120 cm)
- Thermally insulated, joint-free GRP upstand, 30, 40 or 50 cm in height, with U values between 0.5 W/(m²K) and 0.9 W/(m²K)

| SIZES | A _w VALUES (m ²) | |
|-----------|---|------|
| | 24V | 48 V |
| 100/100 | 0.60 | |
| 100/150 | 0.90 | |
| 120/120 | 0.88 | |
| 120/150 | 1.12 | |
| 125/125 | 0.97 | |
| 150/150* | 1.42 | |
| 150/150** | 1.35 | |

* for double glazing

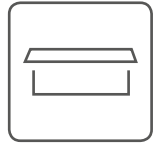
** for triple glazing



LAMILUX CI SYSTEM

SMOKE LIFT FE

Please note: The SHEV fitting can be supplied in white for an additional charge.



PERFECT COMBINATION: GLASS ELEMENTS WITH SHEV FUNCTION

Customised lighting and smoke outlet elements **in larger dimensions** – The CI System Smoke Lift FE offers **added scope for architectural design** in **high-end residential and administration buildings**. **Excellent thermal insulation and soundproofing values** ensure that this heat exhaust unit impresses as does the **freely selectable RAL colour of the aluminium frame**.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|--|--|---|
| | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v between 0.60 and 0.65 - Aerodynamically effective opening surface A_w between 0.60 m ² and 2.84 m ² |
| | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 1000 Ventilation 10,000 + + 10,000 ventilation opening activations |
| | ... under snow load | SL 1000 to SL 2000 |
| | ... down to an indoor temperature of -15 °C | T (-15) |
| | ... after exposure to wind suction (up to 150 kg/m ²) | WL1500 |
| | ... when exposed to fire | B 300 |

HOW YOU BENEFIT

LAMILUX CI System Smoke Lift FE

- Available in a flat version (0°) or with a 3° pitch
- Easy to close after false signal release
- Variety of glazing types: double or triple
Heat insulation glazing [U_g up to 0.6 W/(m²K)]
- Multi-stage ventilation fitted as standard
- Fall-through-proof in line with GS BAU18
- Optionally available as a roof exit hatch
- Open/close function as standard
- 24 V/48 V
- Numerous glazing types available
[$U_g = 1.1$ to 0.6 W/(m²K)]
- Thermally insulated, joint-free GRP upstand, 30, 40 or 50 cm in height, with U values between 0.5 W/(m²K) and 0.9 W/(m²K)
- Comfortable remote control available as an option

| SIZES 0°/3° | A_w VALUES (m ²) | SIZES 0°/3° | A_w VALUES (m ²) |
|----------------|--------------------------------|----------------|--------------------------------|
| | 24 V 48 V | | 24 V 48 V |
| 100/100 | 0.60 | 120/250 | 1.86 |
| 100/150 | 0.90 | 120/300 | 2.23 |
| 100/200* | 1.24 | 125/125 | 0.97 |
| 100/200** | 1.20 | 125/250 | 1.94 |
| 100/240 | 1.44 | 150/150* | 1.42 |
| 100/250 | 1.53 | 150/150** | 1.35 |
| 100/300 | 1.83 | 150/180 | 1.65 |
| 120/120 | 0.88 | 150/200 | 1.86 |
| 120/150 | 1.12 | 150/210 | 1.98 |
| 120/180* | 1.36 | 150/240 | 2.27 |
| 120/180** | 1.30 | 150/250 | 2.36 |
| 120/240 | 1.79 | 150/300 | 2.84 |

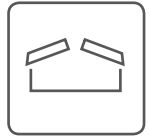
* for double glazing

** for triple glazing

NEW: LAMILUX CI SYSTEM SMOKE LIFT TWIN



Variable flange design for installation on all substructures and integration into continuous rooflights.



DOUBLE THE SAFETY FOR INDUSTRIAL BUILDINGS WITH CERTIFIED FULL VENTILATION

The CI System Smoke Lift TWIN combines a SHEV function (smoke outlet as per EN 12101-2), optimum daylight intake and natural ventilation in a single system. With its wide range of composite glazing types and numerous sizes, this daylight system is eminently suitable for use in industry.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|--|--|---|
| | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v between 0.49 and 0.69 - Aerodynamically effective opening surface A_w between 0.47m ² and 6.03m ² |
| | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 1000 Ventilation 10,000 |
| | ... under snow load | SL 300 to SL 1100 |
| | ... down to an indoor temperature of -15 °C | T (-5) and T (-15) |
| | ... after exposure to wind suction (up to 300 kg/m ²) | WL1000 to WL3000 |
| | ... when exposed to fire | B 300 |

HOW YOU BENEFIT

LAMILUX CI System Smoke Lift TWIN

- Exceptional ratio between opening size and smoke outlet surface (available in 1,600 sizes)
- Available in very large dimensions, up to 3 x 3 m
- Installation on all substructures possible
- Full and partial ventilation possible
- Pneumatic or electric (24 V) SHEV function
- Thermal actuation with CO₂ cylinders is not damaged during tests or due to false signal release
- Customised frame colour based on RAL system
- Resistance against high wind load (WL 3000)
- Optional anti-fall grid or deciduous tree sheeting
- U_g value up to 1.2 W/(m²K)
- Options:
 - 'Hard roofing' B, roof (t1)
 - Building Material Class s1-d0

| SIZES (EXTRACT) | A _w VALUES (m ²) STRAIGHT UPSTAND | | A _w VALUES (m ²) STEEP UPSTAND | | A _w VALUES (m ²) SLOPED UPSTAND | |
|-----------------|--|------|---|------|--|------|
| | CO ₂ | 24V | CO ₂ | 24V | CO ₂ | 24V |
| 120/80 | 0.61 | - | - | - | - | - |
| 120/120 | 0.92 | - | - | - | - | - |
| 150/150 | 1.44 | 1.31 | 1.31 | 1.17 | 1.17 | 1.17 |
| 150/240 | 2.30 | 2.23 | 2.23 | 2.02 | 2.02 | 2.02 |
| 180/180 | 2.07 | 1.94 | 1.94 | 1.78 | 1.78 | 1.78 |
| 180/260 | 3.00 | 2.95 | 2.95 | 2.76 | 2.76 | 2.76 |
| 200/200 | 2.56 | 2.48 | 2.48 | 2.28 | 2.28 | 2.28 |
| 220/140 | 1.94 | 1.88 | 1.88 | 1.69 | 1.69 | 1.69 |
| 230/250 | 3.74 | 3.68 | 3.68 | 3.51 | 3.51 | 3.51 |
| 240/150 | 2.23 | 2.23 | 2.23 | 2.02 | 2.02 | 2.02 |
| 250/120 | 1.86 | 1.86 | 1.86 | 1.65 | 1.65 | 1.65 |
| 250/180 | 2.84 | 2.84 | 2.84 | 2.61 | 2.61 | 2.61 |
| 300/200 | 3.78 | 3.90 | 3.90 | 3.72 | 3.72 | 3.72 |
| 300/300 | 5.94 | 5.94 | 5.94 | 6.03 | 6.03 | 6.03 |

LAMILUX CI SYSTEM
SMOKE LIFT ME DK









DOUBLE THE SAFETY FOR OFFICE AND ADMINISTRATION BUILDINGS

CI System Smoke Lift ME DK combines a SHEV function (smoke outlet as per EN 12101-2), optimum daylight intake and natural ventilation in a compact system. This daylight element with high-performance soundproofing impresses due to its effective heat insulation properties.

The CI System Smoke Lift ME DK can be supplied in a very large format and thus features a highly effective, aerodynamic smoke outlet surface. This daylight system is also designed to incorporate the frequently used fair weather ventilation system. Driven by a pneumatic system or an electrical motor (24V in compliance with EN 12101-2 or 230V), ventilation flaps can be opened up to an angle of 90°. Intelligent control of the ventilation function enables users to adjust individual air exchange rates perfectly to their needs.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|---|--|--|
|  | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v 0.68 - Aerodynamically effective opening surface A_w between 0.90 m ² and 2.59 m ² |
|  | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 50/1000 + 10,000 ventilation opening activations |
|  | ... under snow load | SL 500 to SL 1000 |
|  | ... down to indoor temperature of -15 °C | T(00) T(-05) T(-15) |
|  | ... after exposure to wind suction (up to 150 kg/m ²) | WL 1500 |
|  | ... when exposed to fire | B300 |

HOW YOU BENEFIT

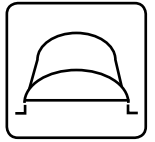
LAMILUX CI System Smoke Lift ME DK

- Tightness against driving rain (Class E, 1200 EN 12208)
- Resistance against high wind load (Class C4/B5 EN 12210)
- Excellent heat insulation (U_g values of 1.1 to 0.6 W/(m²K) EN 673)
- Total energy permeability g between 18 and 78 per cent
- High air impermeability (Class 4 EN 12207)
- Bad weather ventilation optionally available

| SIZES | A_w VALUES (m ²) | |
|---------|--------------------------------|-----|
| | CO ₂ | 24V |
| 120/120 | 0.90 | |
| 120/180 | 1.37 | |
| 120/240 | 1.84 | |
| 150/150 | 1.43 | |
| 150/210 | 2.02 | |
| 150/240 | 2.32 | |
| 180/180 | 2.08 | |
| 180/250 | 2.92 | |
| 200/200 | 2.59 | |

LAMILUX CI SYSTEM
SMOKE LIFT B





HIGHLY ENERGY-EFFICIENT SMOKE VENTILATION







The CI System Continuous Rooflight B can be equipped with smoke and heat exhaust units that fulfil all EN 12101-2 requirements. Single or double flaps are integrated as a SHEV unit and can be activated for normal and fair weather ventilation.

Energy efficiency: The blower door test on a thermally controlled flap frame/glazing with a similar design to a continuous rooflight demonstrates optimum airtightness in the continuous rooflight system with closed flaps.

Safety and stability: Open SHEV flaps are able to withstand very strong wind loads even if flap dimensions are large. This is guaranteed by spring-loaded multiple joint traverses connected directly to the flap construction.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|---|--|---|
|  | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v between 0.60 and 0.65 - Aerodynamically effective opening surface A_w between 0.59 m ² and 7.40 m ² |
|  | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 1000 + 10,000 ventilation opening activations RE 11000 |
|  | ... under snow load | SL 500 to SL 1100 |
|  | ... down to an indoor temperature of -5°C | T(-5) |
|  | ... after exposure to wind suction (up to 300 kg/m ²) | WL 1500 to SL 3000 |
|  | ... when exposed to fire | B300 |

HOW YOU BENEFIT

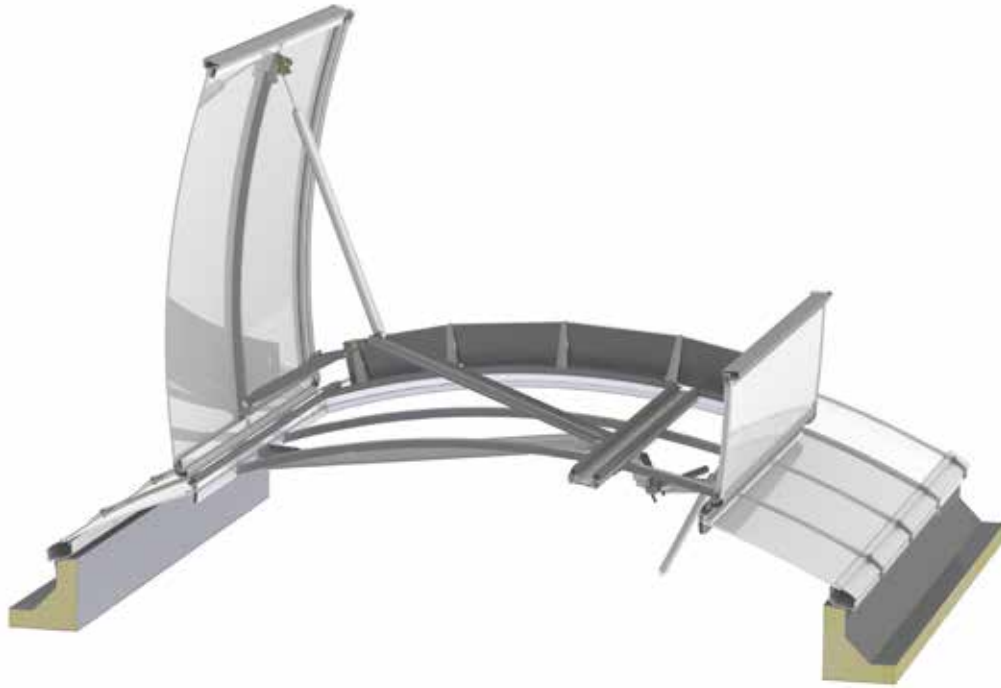
LAMILUX CI System Smoke Lift B

- No spreading of flames as the patented Linear Burn-Through Protection (LBP) ensures compliance with DIN 18234, even with no gravel fill
- Thermal actuation with CO₂ cylinders is not damaged during tests or due to false signal releases
- Excellent heat-insulation values without thermal bridges
- Suitable as a melt-out roof surface as per DIN 18230, and available as 'hard roofing' as per DIN 4102 -7 on request, resistant to flying sparks and radiated heat

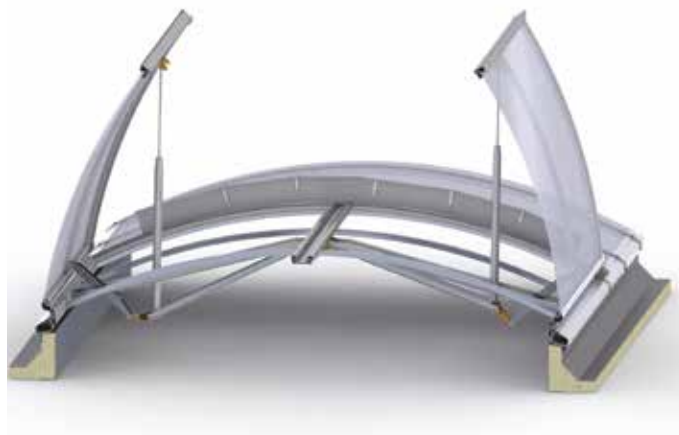
MANY FLAP COMBINATIONS TO ENSURE MARKET-LEADING SMOKE AND HEAT VENTILATION VALUES

Unprecedented heat exhaust unit dimensions have been achieved due to a new technology. The CI System Smoke Lift B can be integrated into the continuous rooflight structure in a double or single flap design in numerous combinations to achieve an optimum smoke outlet surface. In the event of fire, flaps are quickly opened due to thermal actuation, thermal and CO₂ remote triggering or electric remote triggering. Activated electrically/pneumatically, heat exhaust unit flap systems can be used to provide ventilation.

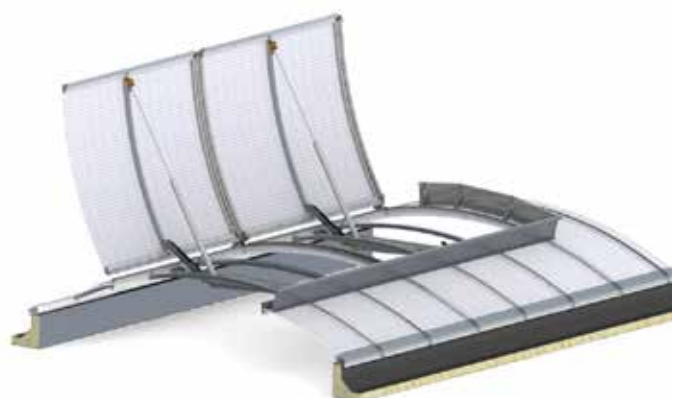
LAMILUX CI SYSTEM SMOKE LIFT B AS AN ASYMMETRIC DOUBLE FLAP SYSTEM






LAMILUX CI SYSTEM SMOKE LIFT B AS A SYMMETRIC DOUBLE FLAP SYSTEM



LAMILUX CI SYSTEM SMOKE LIFT B AS A TANDEM-SERIAL FLAP SYSTEM



| | | | UNOBSTRUCTED OPENING SURFACE A_{GEO} VALUES (m ²) | AERODYNAMICALLY EFFECTIVE OPENING SURFACE A_w IN m ² |
|---|-----|----|--|--|
|  CI SYSTEM SMOKE LIFT B WITH A SINGLE FLAP | | | | |
| 100 | 100 | | 0.93 | 0.59 |
| 100 | 200 | | 1.96 | 1.27 |
| 100 | 210 | TS | 1.96 | 1.24 |
| 100 | 420 | TS | 4.01 | 2.53 |
| 125 | 100 | | 1.17 | 0.74 |
| 125 | 200 | | 2.46 | 1.60 |
| 125 | 210 | TS | 2.46 | 1.53 |
| 125 | 420 | TS | 5.04 | 3.18 |
| 150 | 100 | | 1.43 | 0.90 |
| 150 | 200 | | 3.01 | 1.96 |
| 150 | 210 | TS | 3.02 | 1.87 |
| 150 | 420 | TS | 6.17 | 3.83 |
|  CI SYSTEM SMOKE LIFT B AS AN ASYMMETRIC DOUBLE FLAP SYSTEM | | | | |
| 175 | 100 | | 1.67 | 1.04 |
| 175 | 200 | | 3.51 | 2.28 |
| 175 | 210 | TS | 3.52 | 2.18 |
| 175 | 420 | TS | 7.20 | 4.68 |
| 200 | 100 | | 1.91 | 1.18 |
| 200 | 200 | | 4.01 | 2.61 |
| 200 | 210 | TS | 4.02 | 2.49 |
| 200 | 420 | TS | 8.22 | 5.34 |
|  CI SYSTEM SMOKE LIFT B AS A SYMMETRIC DOUBLE FLAP SYSTEM | | | | |
| 250 | 100 | | 2.39 | 1.48 |
| 250 | 200 | | 5.02 | 3.26 |
| 250 | 210 | TS | 5.02 | 3.12 |
| 250 | 420 | TS | 10.28 | 6.37 |
| 300 | 100 | | 2.87 | 1.78 |
| 300 | 200 | | 6.02 | 3.91 |
| 300 | 210 | TS | 6.04 | 3.74 |
| 300 | 420 | TS | 12.34 | 7.40 |

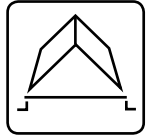
TS = tandem-serial heat exhaust unit

HOW YOU BENEFIT

- Extensive aerodynamic smoke outlet surface up to 7.40 m² with a NSHEV available
- Up to four flaps which open and close separately for optimum functional reliability
- High snow/wind loads (SL 1000) available with aerodynamic smoke outlet surfaces up to 3.74 m²
- Extensive full ventilation using NSHEVS available with geometric ventilation surfaces up to 12.34 m²
- Large smoke outlet surfaces available in short continuous rooflights

LAMILUX CI SYSTEM SMOKE LIFT S











A MODULAR SMOKE AND HEAT EXHAUST VENTILATION SYSTEM

If needed, you can equip the LAMILUX CI System Continuous Rooflight S with smoke and heat exhaust ventilation devices that fulfil EN 12101-2 requirements.

Thermally decoupled flap systems for natural ventilation and smoke and heat exhaust ventilation (SHEV) can be integrated into the extremely sturdy and thermal-bridge free structure, which can span a width of up to six metres. They can be designed in different sizes combined in a modular system in the continuous rooflight – ideally matched to provide the required smoke outlet surface.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|---|--|---|
|  | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v between 0.60 and 0.65 - Aerodynamically effective opening surface A_w between 0.32 m ² and 6.50 m ² |
|  | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 1000 + 10,000 ventilation opening activations RE 11000 |
|  | ... under snow load | SL 500 to SL 1100 |
|  | ... down to an indoor temperature of -5°C | T(-5) |
|  | ... after exposure to wind suction (up to 300 kg/m ²) | WL 1500 to SL 3000 |
|  | ... when exposed to fire | B300 |

HOW YOU BENEFIT

LAMILUX CI System Smoke Lift S

- Suitable as a melt-out surface
- Good heat-insulation values
- The solution for architectural required ridged roof shapes
- Thermal actuation with CO₂ cylinders is not damaged during tests or due to false signal release
- Many flap combinations – the perfect solution for every need

| MEASUREMENT X | OPENING SURFACE A_{GEO} | AERODYNAMICALLY EFFECTIVE OPENING SURFACE | MEASUREMENT Y |
|---------------|---------------------------|---|---------------|
|---------------|---------------------------|---|---------------|

EACH MEASUREMENT X (FLAP LENGTH) CAN BE COMBINED WITH ANY MEASUREMENT Y (FLAP WIDTH), DEPENDING ON THE REQUIRED WIDTH OF THE CONTINUOUS ROOFLIGHT.



LAMILUX CI SYSTEM SMOKE LIFT SE30 – SINGLE FLAP

| | | | |
|-----|---|---|-----|
| 100 | | | 53 |
| 120 | | | 82 |
| 200 | between 0.53 m ² and 5.82 m ² | between 0.32 m ² and 2.97 m ² | 111 |
| 210 | TS | | 140 |
| 240 | TS | | 169 |
| 420 | TS | | |



LAMILUX CI SYSTEM SMOKE LIFT SE45 – SINGLE FLAP

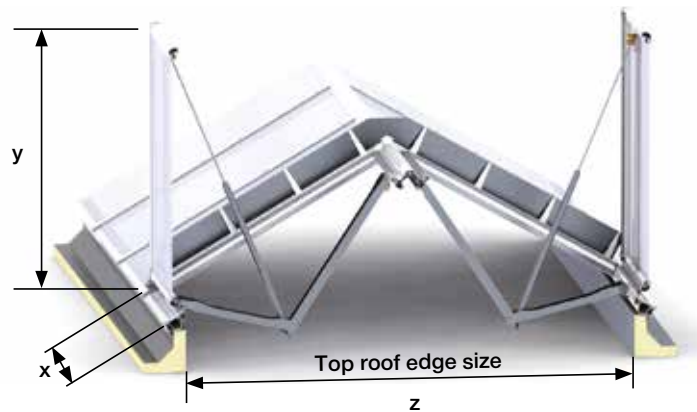
| | | | |
|-----|---|---|-----|
| 100 | | | 53 |
| 120 | | | 82 |
| 200 | between 0.53 m ² and 5.82 m ² | between 0.33 m ² and 2.97 m ² | 111 |
| 210 | TS | | 140 |
| 240 | TS | | 169 |
| 420 | TS | | |



LAMILUX CI SYSTEM SMOKE LIFT SE-SHED60 – SINGLE FLAP

| | | | |
|-----|---|---|-----|
| 100 | | | 53 |
| 120 | | | 82 |
| 200 | between 0.53 m ² and 5.82 m ² | between 0.32 m ² and 3.03 m ² | 111 |
| 210 | TS | | 140 |
| 240 | TS | | 169 |
| 420 | TS | | |

LAMILUX CI SYSTEM SMOKE LIFT S AS A SYMMETRIC DOUBLE FLAP SYSTEM



LAMILUX CI SYSTEM SMOKE LIFT S AS A TANDEM-SERIAL TS SINGLE FLAP SYSTEM



| MEASUREMENT X | OPENING SURFACE AGEO | AERODYNAMICALLY EFFECTIVE OPENING SURFACE | MEASUREMENT Y MEASUREMENT Z |
|---------------|----------------------|---|--------------------------------|
|---------------|----------------------|---|--------------------------------|

EACH MEASUREMENT X (FLAP LENGTH) CAN BE COMBINED WITH ANY MEASUREMENT Y (FLAP WIDTH), DEPENDING ON THE REQUIRED WIDTH OF THE CONTINUOUS ROOFLIGHT.



LAMILUX CI SYSTEM SMOKE LIFT SD30 - DOUBLE FLAP SYSTEM

| | | | | |
|-------|--|--|---------|-----|
| 100 | | | 2 x 53 | 100 |
| 120 | | | 2 x 82 | 150 |
| 200 | between 1.02 m ² and 10.48 m ² | between 0.64 m ² and 6.5 m ² | 2 x 111 | 200 |
| 210* | TS | | 2 x 140 | 250 |
| 240* | TS | | 2 x 169 | 300 |
| 420** | TS | | | |



LAMILUX CI SYSTEM SMOKE LIFT SD45 - DOUBLE FLAP SYSTEM

| | | | | |
|-------|---|---|---------|-----|
| 100 | | | 2 x 53 | 80 |
| 120 | | | 2 x 82 | 120 |
| 200 | between 0.81 m ² and 8.47 m ² | between 0.62 m ² and 5.08 m ² | 2 x 111 | 160 |
| 210* | TS | | 2 x 140 | 200 |
| 240* | TS | | 2 x 169 | 240 |
| 420** | TS | | | |

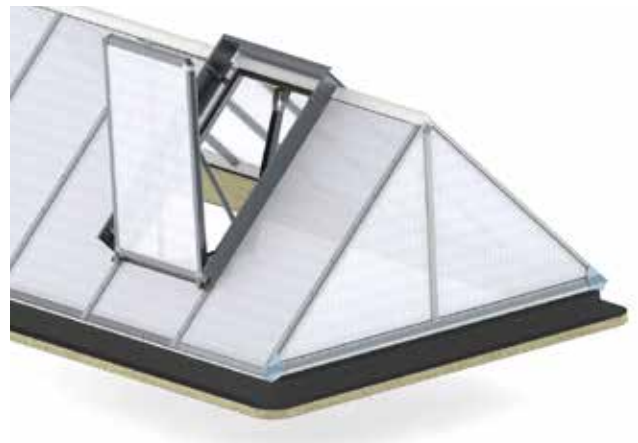
* HEAVY DUTY FLAPS, FOR HIGH SNOW LOADS

** LARGEST POSSIBLE AERODYNAMIC SMOKE OUTLET SURFACE AVAILABLE ON THE MARKET

LAMILUX CI SYSTEM CONTINUOUS ROOFLIGHT S 30°



LAMILUX CI SYSTEM CONTINUOUS ROOFLIGHT S 45°





LAMILUX CI SYSTEM
SMOKE LIFT M



LAMILUX CI SYSTEM SMOKE LIFT M

This smoke and heat exhaust ventilation unit is an ideal flap system for smoke and heat exhaust ventilation in LAMILUX glass roof structures, installed at angles between 0° to 90°.

TEST PARAMETERS AS PER DIN EN 12101-2 AND TEST RESULTS

Our NSHEVS reliably open into the SHEV position in less than 60 seconds...

| | | |
|--|--|---|
| | ... and ensure a high smoke outlet volume | Flow rate coefficient C_v between 0.56 and 0.70 - Aerodynamically effective opening surface A_w between 0.14 m ² and 6.00 m ² |
| | ... after endurance test – 1,000 times in SHEV position and 10,000 times in ventilation position | RE 50/1000 + 10,000 ventilation opening activations |
| | ... under snow load | SL 500 to SL 1000 |
| | ... down to an indoor temperature of -15°C | T(00) T(-05) T(-15) |
| | ... after exposure to wind suction (up to 150 kg/m ²) | WL 1500 |
| | ... when exposed to fire | B300 |

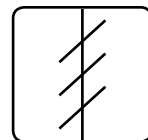
HOW YOU BENEFIT

LAMILUX CI System Smoke Lift M

- Flap widths and heights can be any size up to 2.50 m, covering a maximum flap size of 3.00 m² with real glazing, or up to 3.50 m² with polycarbonate glazing
- Complies with European standard EN 12101-2 for smoke and heat exhaust systems
- Variable choice of drive systems – pneumatic or 24 Volt electric version
- Perfectly suited for retrofitting to older roof structures as it can be integrated into other systems



LAMILUX CI SYSTEM
SUPPLY AIR UNITS



OPTIMUM EFFICIENCY

Supply of fresh air to the lower area of the building optimises smoke and heat ventilation efficiency. The draft creates a chimney effect (natural smoke outlet) and draws smoke upward more effectively. Supply air needs to be planned precisely and thus controlled in the same way as any other SHEV system.

LAMILUX CI SYSTEM G-AIR



MATERIAL

Extruded, thermally separated aluminium profiles

SIZES

Width: up to 1,800 mm without centre post
1,801 - 3,600 mm with centre post
Height: 300 mm or higher

LOUVRE PANEL

Aluminium panel ($U_g = 1.0$ to 1.3 W/m²K)
Insulation glass ($U_g = 0.7$ to 1.1 W/m²K)

DRIVES

Pneumatic cylinder
24 V electric motor

Tested to DIN EN 12101-2, the louvre vent G-Air is equally suitable for use in residential and administrative buildings as production facilities and warehouses.

LAMILUX CI SYSTEM B-AIR



MATERIAL

Aluminium

SIZES

Width: 600 - 2400 mm
Length (height): 720 - 2920 mm

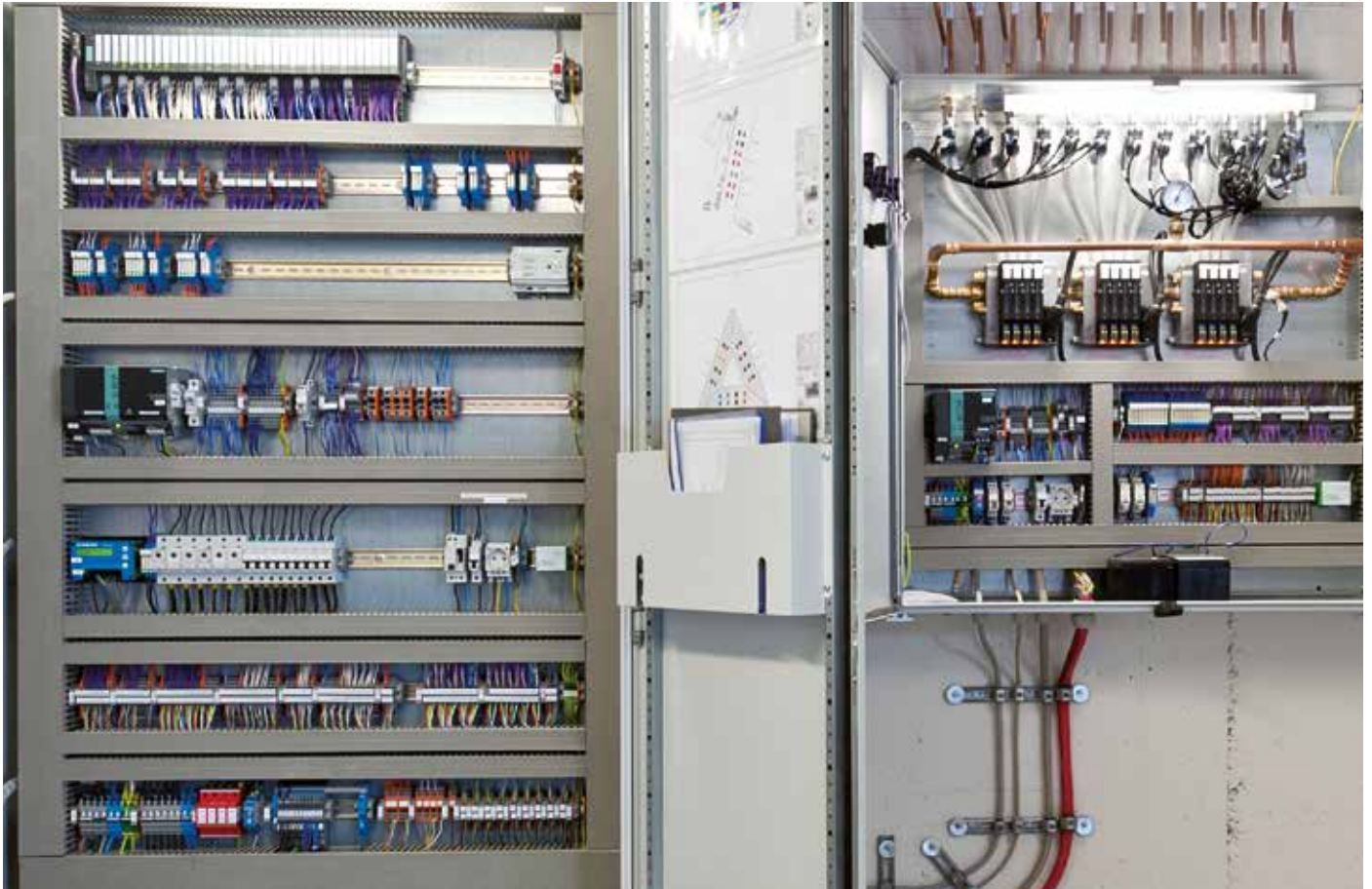
LOUVRE PANEL

Aluminium single or double skinned, heat-insulated
Polycarbonate opal or clear
Insulation glazing

DRIVES

Pneumatic cylinder
24 V electric motor

Tested to DIN EN 12101-2, the louvre vent B-Air excels as a rainproof ventilation system and is the ideal solution for industrial buildings.



LAMILUX BUILDING CONTROL SYSTEMS

SAFE – ENERGY-EFFICIENT – COMFORTABLE

Building control systems determine a building's safety, energy efficiency and comfort. They are key to ensuring sustainable, value-based construction of the future.

LAMILUX plans and realises the technical equipment on buildings with complex building control systems featuring networked functions. As a specialised company with many years of experience in small and large projects, we provide intelligent controls and automation for fire safety, energy efficiency and comfort in buildings.

PLAN – NETWORK – AUTOMATE

From small control solutions through to complex building automation on large premises, LAMILUX offers all services from a single source, including all different trades, to ensure reliable realisation: from planning and the design concept for electric or pneumatic control systems and components through to their installation, initial operation and maintenance.

CONTROL WITH OUR SYSTEMS

- Smoke and heat exhaust systems
- Flap systems for natural ventilation
- Solar protection and light control
- Sensor-controlled switching of electric light
- Temperature-sensitive switching of automatic air conditioners and benefit from **intelligent networking of building safety, energy efficiency and building comfort.**



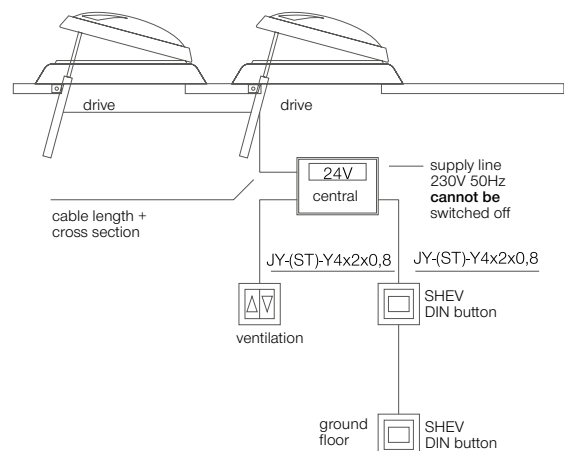
SMOKE REMOVAL FOR STAIRWAYS

NETWORK-INDEPENDENT – ELECTRIC

Many European countries have special rules for stairways. In most cases, constructors are required to fit electrically controlled, network-independent smoke evacuation systems. LAMILUX supplies smoke removal openings specially designed for stairways for this purpose, although they may also be installed in any type of building or structure.

OUR STANDARD SET COMPRISES:

- 1 electric motor, 500 mm stroke, 24 V, load disconnection
- 1 control unit for a maximum of 2 motors with control connectors for SHEVS, ventilation buttons, and various additional devices such as smoke detectors, thermal detectors or wind and rain sensors
- 2 SHEV control switches with visual display, surface mounted
- 1 ventilation switch UP for 55 back box
- Single item deliveries and upgrades are possible





RENOVATION OF SHEV SYSTEMS

A SINGLE PARTNER FOR MANY THINGS INSTEAD OF MANY PARTNERS

When smoke and heat exhaust systems start to age, customer advisory services and a professional renovation are often not only expensive, but also involve a great deal of work. Not if you work with LAMILUX, however.

Consulting service, tailor-made solutions, including control technology, and all work involved in the renovation from a single source: On request, LAMILUX will handle the whole renovation work package for you. We start with an initial survey to establish what the existing system contains, if the existing conditions comply with new statutory regulations and what the most cost-effective solution would be. We then draw up a design concept, arrange demolition and waste disposal, implement safety measures to protect your staff and property, and install the system in close cooperation with established partners in the roofing sector. Our specialists are responsible for installing complex control technology.



SHEV SYSTEMS MUST WORK

FAILING TO MAINTAIN MAKES YOU LIABLE

Smoke and heat exhaust system owners are required by law to undertake all safety precautions to ensure that people are protected against danger in the event of fire. If you do not maintain your SHEV system, you may be in breach of building safety regulations, DIN 18232, state directives or other directly or indirectly applicable laws.

If you maintain your SHEV system on a regular basis, you will not only minimise the risk of damage and injury considerably, but also liability risks.

INADEQUATE MAINTENANCE WILL ALSO MAKE YOU LIABLE

VdS guidelines prescribe that maintenance work may only be carried out by companies which can provide a promise from the smoke and heat exhaust ventilation system installer to deliver original replacement parts. They are also required to receive a briefing on the systems concerned and need to have the necessary technical qualifications.



BENEFIT FROM OUR PRACTICAL EXPERIENCE

PROJECT-RELATED CONSULTATION

You are involved in the reconstruction or renovation of a building and wish to ensure an optimum preventive fire protection with SHEV systems?

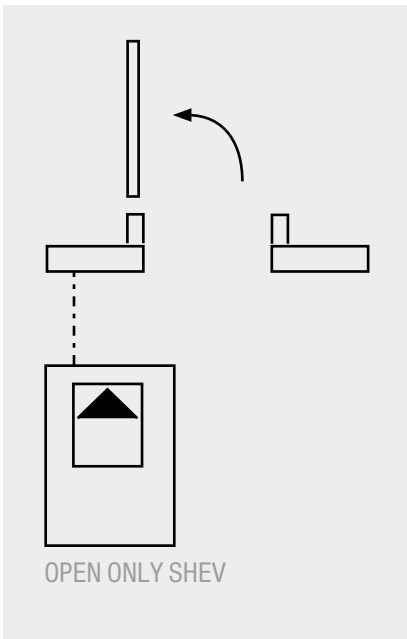
We will gladly provide you with a project-related consultation. We will assist you in building-specific project planning as well as the correct dimensioning of SHEV systems and find tailor-made, building-specific solutions together with you.

WE WILL GUIDE YOU THROUGH THE MAZE OF REGULATIONS

TRAINING PROGRAMMES ON SHEVS AND PREVENTIVE FIRE PROTECTION

The sheer number of rules, regulations and guidelines on structural preventive fire protection is daunting, especially when they relate to smoke and heat ventilation. But what exactly do industrial standards, industrial building guidelines or building codes and regulations say about planning and installing SHEV systems? Which regulation is required by law? Which one is open to interpretation and which one is merely a flexible guideline?

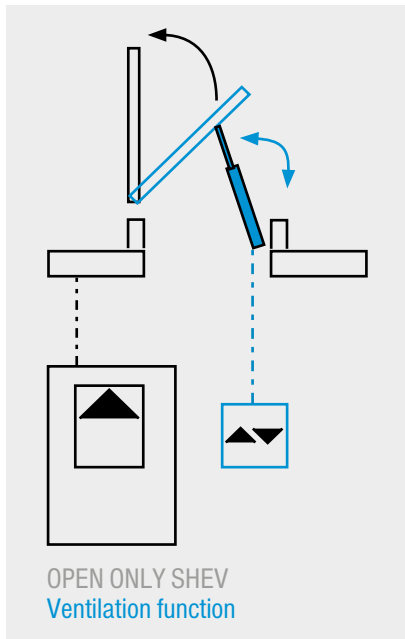
Our training programme will give you a clear perspective through the red tape of rules and regulations and their interpretation. This services is not only intended for our customers and technical planners, but also for public authorities and fire services.



PNEUMATIC SHEV:



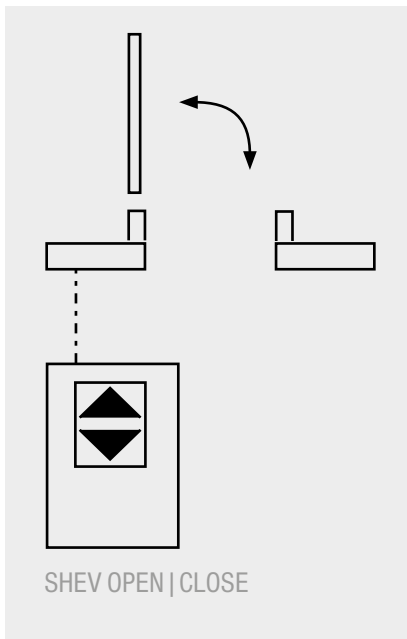
ELECTRIC SHEV:



PNEUMATIC SHEV:



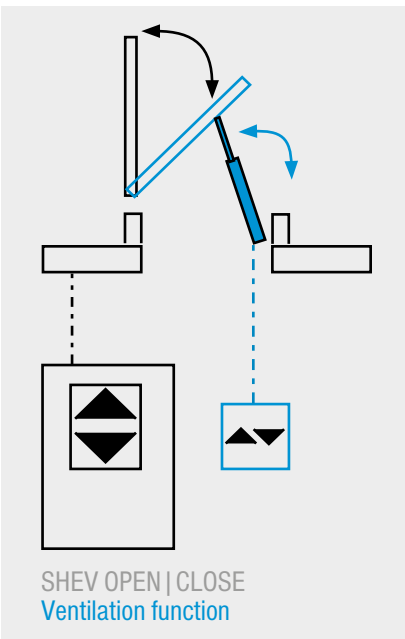
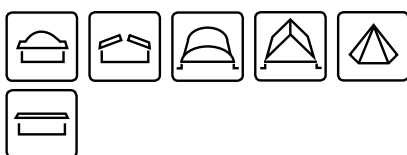
ELECTRIC SHEV:



PNEUMATIC SHEV:



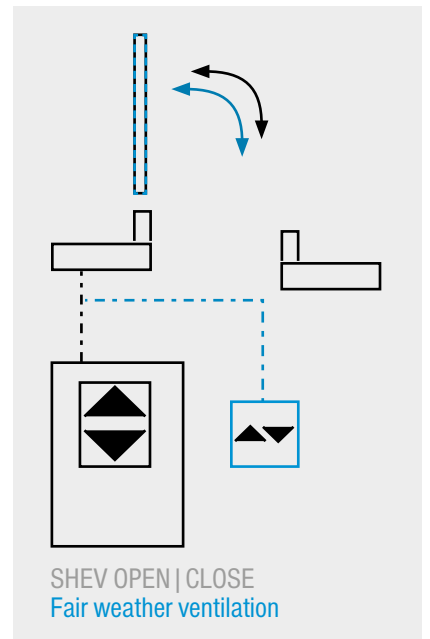
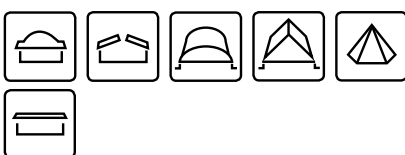
ELECTRIC SHEV:



PNEUMATIC SHEV:



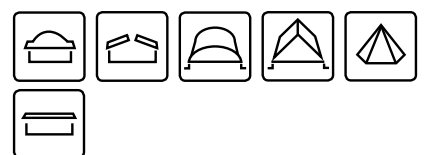
ELECTRIC SHEV:



PNEUMATIC SHEV:



ELECTRIC SHEV:





Scan this to discover more about
LAMILUX daylight systems!



ROOFLIGHT DOME F100



ROOFLIGHT DOME F100 ROUND
GLASS ELEMENT F100 ROUND



CONTINUOUS ROOFLIGHT B



GLASS ARCHITECTURE PR60



SMOKE AND HEAT EXHAUST
VENTILATION SYSTEMS



BUILDING CONTROL SYSTEMS



GLASS ELEMENT F



CONTINUOUS ROOFLIGHT W|R



CONTINUOUS ROOFLIGHT S



RENOVATION



SMOKE LIFT TWIN



FIBRE-REINFORCED
COMPOSITES

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.



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