



# Kingspan Ecofeu DV 110 / DV 110 HPA Data Sheet

Double-flap pneumatically-operated smoke exhaust vent  
for waterproofed roofs



Daylighting Solutions  
Natural Ventilation Solutions  
Smoke Management Solutions  
Service & Maintenance  
Building Automation





# Ecofeu DV 110 / DV 110 HPA

## Description

Smoke & heat ventilation system (SHEV), double flaps, CE-certified according to EN 12101-2, and NF-certified according to NFS 61937-1 and 61937-7, with pneumatic control system, designed to be installed in "waterproofed support" roofs.

DV 110 HPA version:  
High-Performance Aeraulic Wind baffles



## Standard description

The building's natural smoke exhaust will be provided by ECOFEU DV 110 smoke exhaust vents from Kingspan Light + Air, CE-certified compliant with standard EN 12101-2, NF certified SHEV, and in accordance with the Machinery Directive. Performance categories meeting requirements of French legislation, including the 10,000-cycle ventilation function. Galvanised, insulated 400 mm high kerb, 110° double-flap opening frame with high-strength locking mechanism integrated into the height, opalescent multiwall polycarbonate lid with fire rating B-s1. d0 (M1) and thermofuse rated at 93°C and, in the DV 110 HPA version, aluminium wind baffles.

## iSO+ range

The ISO+ reinforced insulation range provides better airtightness and reduces heat loss.



## Advantages

- Unique patented locking system offering high resistance to winds.
- Pneumatic ventilation as standard, at no extra cost.
- The ISO+ solution optimises exhaust vent insulation: 30% better than a standard fixture. Urc: 1.9 W/m<sup>2</sup>.K for a 32 mm MWPC lid.
- Enhanced seal on lid: aluminium F frame with patented, factory-mounted seal.
- Complementary soundproofing.
- Compliant with CETIM Machinery Directive to ensure the best possible operational safety.
- It is fitted with metal wind baffles for better smoke ventilation (HPA version).
- The equipment is supplied ready to install with factory-mounted wind baffles (HPA version).
- Control systems installed by our teams.
- CE-marked smoke exhaust vent compliant with NF EN 12101-2 (CE compliance certificate no.: 0333-CPR-219013).
- NF-SHEV-approved smoke exhaust vent compliant with NF S 61937-1.

## Description

## iSO+ range

The ISO+ reinforced insulation range limits heat loss: 30% gain compared to a standard fixture.

### Glazing

Opalescent multiwall polycarbonate (MWPC), thickness 10 mm for the standard version. It is integrated into a fully sealed aluminium F frame. Fire rating: B-s1,d0(M1). (Different types of glazing available)

### The opening lids

Each frame is made of galvanised steel. In the safety position, it is opened at 110° and driven by a pneumatic drive. In the stand-by position, it locks under the fixed frame using its unique patented system.

### The kerb

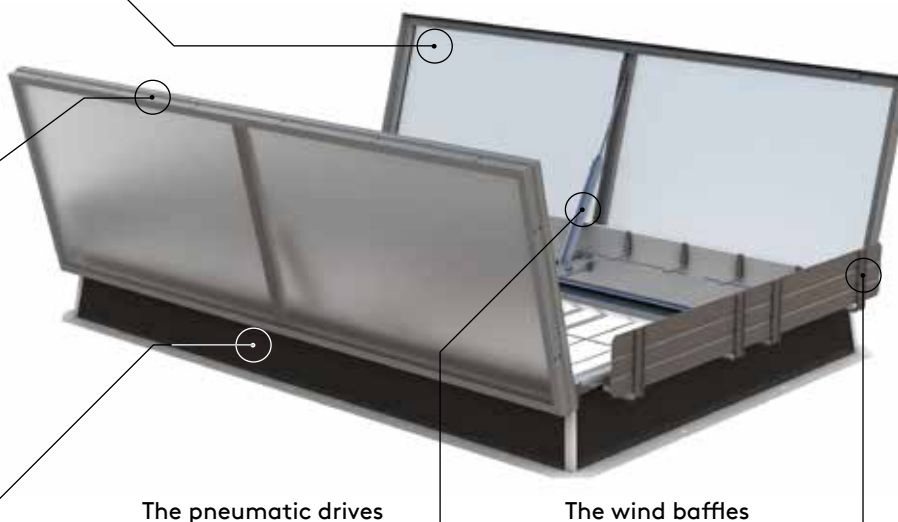
The kerb is made from galvanised sheet steel. It is 400 mm in height. Thermal insulation is provided by a 15 mm thick rock-wool insulation.

### The pneumatic drives

Both pneumatic drives are equipped with stroke end cushioning.

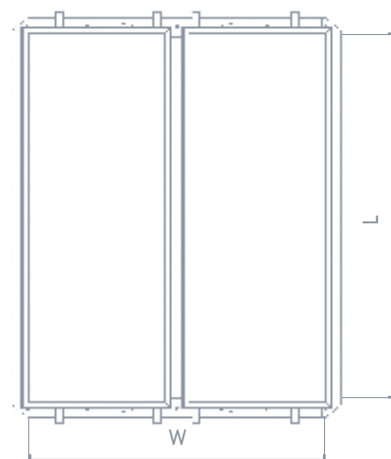
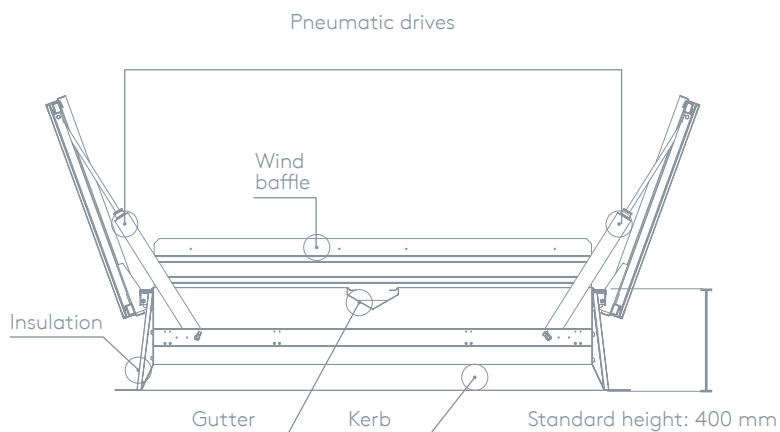
### The wind baffles

(for the HPA version)  
Fitted with metal wind baffles for better smoke ventilation efficiency and resistance to outdoor elements..



## Operating system

A Manually Initiated Device (DCM) controls the system, opening and closing using a copper cable that complies with NF S 61-938. The exhaust vent is equipped with a factory-installed multiplied fuse, set at 93°C, that commands opening.



## Ecofeu DV 110 | Aeraulic performance



Dimensions & aeraulic performance				
SUE (usable smoke exhaust ventilation area) = Aa in m <sup>2</sup> / SGO (geometric smoke ventilation surface area) = width (W) x Length (L) = Av in m <sup>2</sup>				
L (cm) \ w (cm)	160	180	200	220
160	1.28			
170	1.37			
180	1.46	1.58		
190	1.56	1.68		
200	1.65	1.78	1.92	
210	1.75	1.89	2.01	
220	1.85	2.00	2.12	
230	1.95	2.11	2.21	
240	2.05	2.22	2.30	
250	2.15	2.33	2.40	
260	2.26	2.43	2.50	
270	2.36	2.53	2.59	
280	2.47	2.62	2.69	
290	2.58	2.71	2.78	
300	2.69	2.81	2.88	3.50

SL500 - Aa Standard (m<sup>2</sup>) with or without anti-burglary grid (m<sup>2</sup>)

## Ecofeu DV 110 HPA | Aeraulic performance with wind baffles



Dimensions & aeraulic performance				
SUE (usable smoke exhaust ventilation area) = Aa in m <sup>2</sup> / SGO (geometric smoke ventilation surface area) = width (W) x Length (L) = Av in m <sup>2</sup>				
L (cm) \ w (cm)	160	180	200	220
160	1.61			
170	1.71			
180	1.84	2.07		
190	1.95	2.19		
200	2.05	2.34	2.60	
210	2.15	2.46	2.73	
220	2.25	2.57	2.86	
230	2.39	2.69	2.99	
240	2.50	2.81	3.17	
250	2.60	2.93	3.30	
260	2.70	3.04	3.43	
270	2.81	3.21	3.56	
280	2.91	3.33	3.75	
290	3.02	3.45	3.89	
300	3.12	3.56	4.02	4.59

SL500 - Aa Standard (m<sup>2</sup>) with or without anti-burglary grid (m<sup>2</sup>)



## Performance and classification (according to EN 12101-2)\*

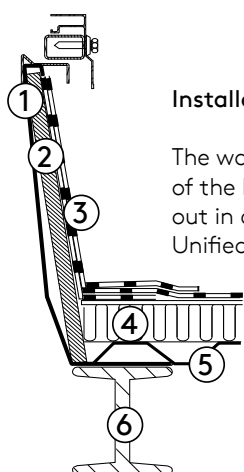
Name	Class	Meanings / Observations
Functioning	Type B	Opening and closing from the ground
Useful surface area	Aa	See "Dimensions and aeraulic performance" table
Reliability	RE 300 (10,000 cycles in ventilation)	Number of open/close smoke extraction test cycles
Snow load	SL250 to SL500	Permissible load in N/m <sup>2</sup> in the smoke extraction test
Wind load	WL 1500	Resistance to wind suction force (in N/m <sup>2</sup> )
Low temperature	T (00)	Unit meets French requirements
Resistance to heat	B300	Operating test at a temperature of 300°C

## Terms and conditions of use

Name	Class
Minimum opening pressure (smoke extraction)	10 bar*
Minimum opening pressure (ventilation)	6 bar*
Minimum reclosing pressure	8 bar*
Maximum inclination and orientation for the kerb bearing plane	45° hinge pin perpendicular to the ridge beam

\* The exact technical specifications depend on the dimensions of the units. To be checked on a case-by-case basis.

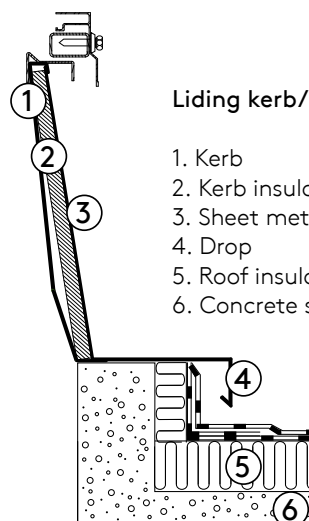
## Installation examples



### Installation of kerb - weathering

The waterproofing and the fastening of the kerb to the support must be carried out in accordance with the applicable Unified Technical Document (D.T.U.)

1. Kerb
2. Kerb insulation
3. Waterproofing
4. Roof insulation
5. Steel roof deck
6. Joist



### Liding kerb/upstand

1. Kerb
2. Kerb insulation (optional)
3. Sheet metal laminate (optional)
4. Drop
5. Roof insulation
6. Concrete slab

## Options | Kerb and equipment

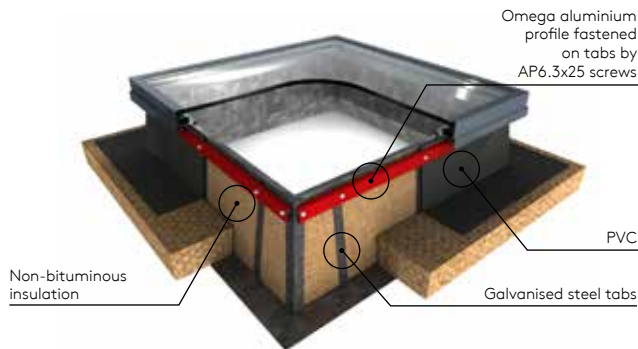
### 1. 1,200 Joule Anti-Burglary Grid (RE)

The anti-burglary grid complies with CRAM recommendations for the protection of personnel working on roofs, and is compliant with the French Labour Code. It passed the standardised test for resistance to a person tripping and falling over: dynamic 1,200 Joule test. (see datasheet)



### 2. Kerb equipped for PVC sealing

The insulation is laid upside down during manufacture, with the non-bituminous side facing outwards to allow the PVC membrane to be reassembled and fixed with the omegas supplied.



### 3. Limit switches

Two position contacts (safety position / standby position) can be connected to a control panel. This system allows the positions of all the installation's exhaust vents to be checked without climbing on the roof. This option is required when installing SHEV in a Category A or B Fire Safety System.



### 4. Reinforced thermal insulation

The ISO+ reinforced insulation range provides better airtightness and reduces heat loss thanks to more efficient MWPC glazing (16 or 32 mm), an insulating seal between the lid and the kerb, and improved kerb insulation (30 mm). I.e. a 30% gain in heat efficiency compared to a standard fixture.  $U_{rc} = 1.9 \text{ W/m}^2\cdot\text{K}$ .

## ISO+ range

### 5. Without thermofuse

The useful option, for example, when regulations require the fire detection system to control smoke ventilation.

### 6. Painting

Inside of the kerb and the bar laquered by us: all RAL colours available on request.

## Options | Special Renovation

### 1. The Upstand for DV 110

It is a liding upstand for smoke exhaust vents, CE and NF-approved, type DV 110, opening at 110°, intended for renovation and compliance.



Laquered upstands



Upstand in arcade rooflight

It is made of galvanised sheet steel, height: 400 mm (350 mm minimum), standard flange: 100 mm and drop of 50 mm.

The lengths of the heel and the drop are modifiable to obtain a perfect fit on an existing kerb. The upstand can be double insulated on request. (see datasheet)

The upstand for the DV 110 can also be integrated into the Ecofil arcade rooflights as a smoke extraction opening.



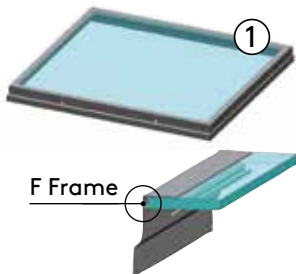
## Pneumatic ventilation

It is included with the unit and without modifications, at no additional cost. Simply connect the unit to a comfort pneumatic control panel, which enables smoke exhaust and ventilation. CE certification is also valid in this configuration.

## Types of glazing

### 1. MWPC lid

Our proposals for multi-wall polycarbonate. Other characteristics on request.



Type of multiwall polycarbonate	Light transmission (in %)	Thermal transmittance coefficient Ug (in W/m <sup>2</sup> .K)*	Solar factor (in %)	Fire rating
MWPC - Opalescent - 10 mm - 4 walls	57	2.5 - 2.7	60	B-s1,d0 (M1)
MWPC - Opalescent - 16 mm - 5 walls	46	1.9 - 2.1	47	
MWPC - Opalescent - 16 mm - 7 walls	54	1.9 - 2.0	55	
MWPC - Opalescent - 32 mm - 5 walls	38	1.2 - 1.3	40	
MWPC - Translucent - 10 mm - 4 walls	69	2.5 - 2.7	65	
MWPC - Translucent - 16 mm - 5 walls	66	1.9 - 2.1	63	
MWPC - Translucent - 16 mm - 7 walls	59	1.9 - 2.0	56	
MWPC - Translucent - 32 mm - 5 walls	50	1.2 - 1.3	49	
MWPC - Heat reduction - 10 mm - 4 walls	50	2.6 - 2.8	48	
MWPC - Heat reduction - 16 mm - 5 walls	33	1.9 - 2.1	32	
MWPC - Heat reduction - 16 mm - 7 walls	54	1.9 - 2.0	48	
MWPC - Heat reduction - 32 mm - 5 walls	30	1.2 - 1.3	30	
MWPC - Grey opaque - 10 mm - 4 walls	0	2.55 / 2.7	/	
MWPC - Grey opaque - 16 mm - 7 walls	0	1.9 - 2.0	/	

\* 1st value given for an inclination of  $\geq 60^\circ$  and 2nd value for inclination  $< 60^\circ$ .  
For any other requirements, please contact us.

### 2. Polyester lid

Completely opaque lid with black interior to avoid any light reflection. It is suitable for use on sites where overhead lighting is to be avoided: cellar, chemical sites, cinemas, etc. Also for sites exposed to aggressive chemical products. Thickness: 25 mm.

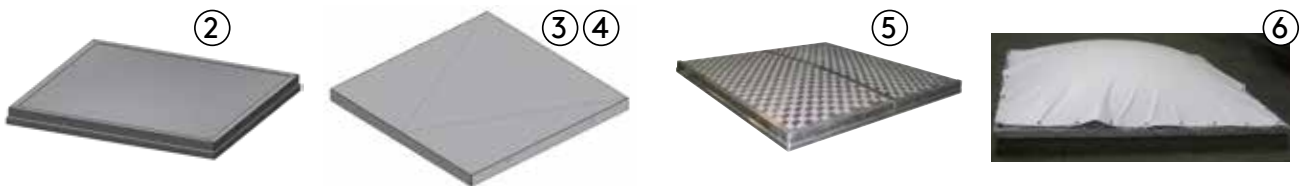
Light transmission: 0%. Thermal transmittance coefficient:  $U = 0.8 \text{ W/m}^2\cdot\text{K}$ .

### 3. Aluminium lid

This lid has the best fire rating. Thickness: 50 mm. Light transmission: 0%. Thermal transmittance coefficient:  $U = 0.8 \text{ W/m}^2\cdot\text{K}$ . Fire rating: A2 - s1, d0 (M0). Not combustible.

### 4. Sound-proofing

Insulated aluminium lid 50 mm thick. According to CSTB tests, 29 dB Rw sound attenuation.



## Solar protection

### 5. Ecosun Sunshade

The Ecosun Sunshade provides a sustainable and economical solution to the problem of overheating in buildings. It is a high performance aluminium system, combined with the multi-wall polycarbonate glazing in our rooflights. CSTB tests show that the energy transmission factor is only 15%. (see datasheet)

### 6. Detachable external sun screens

Made to measure tarpaulin, PVC coated for better ageing, with strengthened edges and eyelets. These screens are delivered ready to be installed, and are secured using a bungee cord threaded through the eyelets.

## Kingspan Light + Air at your service

Kingspan Light + Air is a manufacturer as well as a service provider with a network of service engineers and in-house CFD and fire engineering expertise. Proper, preventative, pre-emptive maintenance of Smoke & Heat Exhaust Systems undertaken by qualified specialists will not only ensure the highest levels of safety and security but also mean savings in time and money.

The comfort of a partner who takes care of everything: ask your local representative for more information about the services available in your country.



## Certifications



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## INTERNATIONAL

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