

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction products

## Natural Smoke and heat exhaust ventilator

for fire safety use in natural smoke and heat exhaust systems, with specification and performance as specified on page 2-10 in this certificate.

### Product name: HV/RV

placed on the market under the name or trademark of

### VELUX Commercial Domex A/S

Neptunvej 6  
DK-9293 Kongerslev, Denmark

and produced in the manufacturing plant

same as above

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in annex ZA of the standard

### EN 12101-2:2003

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

### constancy of performance of the construction product.

This certificate was first issued on 2007-03-07 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Issued by notified body 0402

The validity of this certificate can be verified on our website.

Martin Tillander  
Director Product Certification

Certificate 0402-CPR-457502 | issue 9 | 2021-01-22

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## Specification

Dual purpose natural smoke and heat exhaust ventilator (NSHEV), intended for comfort ventilation as well as smoke and heat exhaust ventilation under fire conditions. The ventilator is part of a continuous roof-light.

The NSHEV is for roof mounting and is tested with and without side wind. The opening is Type B.

The ventilator can be equipped with single or double flaps, flaps is made of aluminium profiles with integrated hinges. Double flaps are made of polycarbonate, thickness  $\geq 10$  mm, either dome shaped with arrow height  $0 - 0.5 \times W$  (maximum 1 200 mm), or saddleback shaped (20-45°). Single flap are made of polycarbonate, thickness  $\geq 10$  mm, and is dome shaped with arrow height  $0 - 0.5 \times W$  (maximum 1 200 mm). The ventilator can be equipped with or without wind deflectors, having a height of 150 - 400 mm. Frame of wood, thickness  $\geq 35$  mm, with or without insulation.

	<b>Single flap</b>	<b>Double flap</b>
Length (throat):	1000 - 2400 mm	1000 - 2400 mm
Width (throat):	1000 - 1200 mm	1000 - 2400 mm
Frame height (above roof):	250 - 600 mm	250 - 600 mm
Opening angle (fire opening):	160°	90°
Opening angle (comfort opening):	45°	45°
Opening mechanism:	Pneumatic or electrical	
Opening mechanism, supplier and type:	<b>Pneumatic</b> Wintech A/S, type: BDST, cylinder $\varnothing 63$ mm	
	<b>Electrical</b> Wintech A/S, JM-DC2-LC-REED Wintech A/S, MTJ-01 with an electric linear actuator type JM-DC2-LC3 Actulux A/S, SA Power Single Actulux A/S, Rotary RA 100 (maximum ventilator size 1 000 x 1 000 mm, maximum flap weight 25,2 kg) Actulux A/S, SA Power double (double flap only) Actulux A/S, SA Power mini (maximum ventilator size 1 000 x 1 000 mm, maximum flap weight 37 kg)	

## Performance

	<b>SA Power Mini</b>	<b>SA Power double</b>
Aerodynamic free area:	See table 1	See table 2-7
Reliability:	Re 1000	Re 50
Snow load:	SL 800	SL 800
Low ambient temperature:	T(-15)	T(-15)
Wind load:	WL 1500	WL 1500
Resistance to heat:	B 300	B 300
<i>*See figure 1 for details</i>		
	<b>SA Power single</b>	<b>BDST, JM-DC2-LC-REED, MTJ-01 and Rotary RA 100</b>
Aerodynamic free area:	See table 1	See table 1-6
Reliability:	Re 50	Re 50
Snow load:	SL 800	SL 720
Low ambient temperature:	T(-15)	T(-05)
Wind load:	WL 1500	WL 1500
Resistance to heat:	B 300	B 300

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**Reaction to fire classification:**

Wooden frame	D-s2, d0
Polycarbonate	B-s1, d0

Figure 1

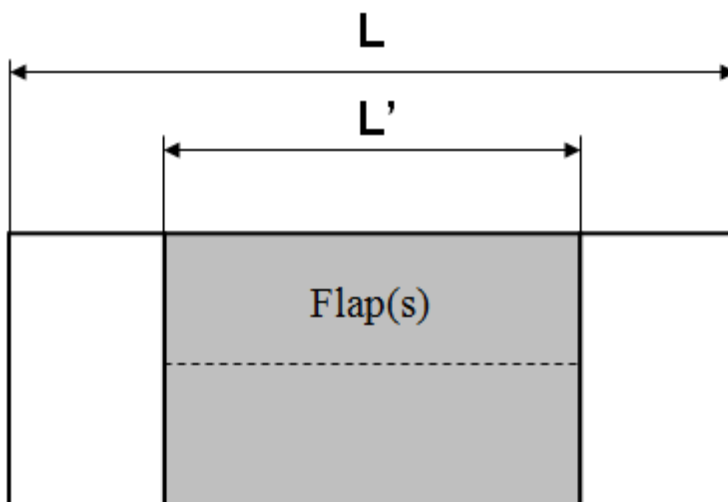


Figure 1, Relation between L and L' in a continuous or stand-alone roof light.

Table 1

Dome shaped single flapped NSHEV with opening angle 160° in continuous roof light

**C<sub>v</sub> value without wind deflectors**

The NSHEV has **no** function without wind deflectors.

**C<sub>v</sub> values with wind deflectors**

	C <sub>v</sub> with wind deflector	W / [mm]			height of wind deflector [mm]
		≥1000	≥1100	≥1200	
L' [mm]	≥1000	0,72	0,72	0,72	150
	≥1100	0,72	0,72	0,72	
	≥1200	0,71	0,71	0,71	
	≥1300	0,71	0,71	0,71	200
	≥1400	0,70	0,70	0,70	
	≥1500	0,69	0,69	0,69	
	≥1600	0,68	0,68	0,68	250
	≥1700	0,68	0,68	0,68	
	≥1800	0,67	0,67	0,67	
	≥1900	0,66	0,66	0,66	300
	≥2000	0,65	0,65	0,65	
	≥2100	0,64	0,64	0,64	
	≥2200	0,64	0,64	0,64	350
	≥2300	0,63	0,63	0,63	
	≥2400	0,62	0,62	0,62	

Table 2

Dome shaped double flapped NSHEV as standalone roof light with  $L = L' + 300$  mm

**$C_v$  values without wind deflectors**

$C_v$ without wind deflector		Length L' [mm] standalone								
		≥ 1600	≥ 1700	≥ 1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width W / mm	≥ 1600	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 1700	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 1800	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 1900	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2000	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2100	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2200	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2300	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
≥ 2400	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47	

**$C_v$  values with wind deflectors**

$C_v$ with wind deflector		Length L' [mm] standalone								
		≥ 1600	≥ 1700	≥ 1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width W / mm	≥ 1600	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 1700	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 1800	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 1900	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2000	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2100	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2200	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2300	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2400	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
Height of wind deflector	250 [mm]	300 [mm]			350 [mm]			400 [mm]		

Table 3

Dome shaped double flapped NSHEV as standalone roof light with  $L > L' + 300$  mm up to a total length of  $L = 4800$  mm

**$C_v$  value without wind deflectors**

The NSHEV has **no** function without wind deflectors.

**$C_v$  values with wind deflectors**

$C_v$ with wind deflector		Length $L'$ [mm] standalone								
		$\geq 1600$	$\geq 1700$	$\geq 1800$	$\geq 1900$	$\geq 2000$	$\geq 2100$	$\geq 2200$	$\geq 2300$	$\geq 2400$
$w$ / mm	$\geq 1600$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1700$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1800$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1900$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 2000$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2100$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2200$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2300$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2400$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
Height of wind deflector		300 [mm]		350 [mm]			400 [mm]			



Table 4

Dome shaped double flapped NSHEV in continuous roof light

**C<sub>v</sub> value without wind deflectors**

The NSHEV has **no** function without wind deflectors.

**C<sub>v</sub> value with wind deflectors**

C <sub>v</sub> with wind deflector		Length L' [mm] continuous rooflight								
		≥ 1600	≥ 1700	≥1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width W / mm	≥ 1600	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 1700	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥1800	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 1900	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2000	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2100	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2200	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2300	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
≥ 2400	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65	
wind deflector height		300 [mm]		350 [mm]			400 [mm]			

Table 5

Saddleback shaped double flapped NSHEV as standalone rooflight with  $L = L' + 300$  mm

**$C_v$  values without wind deflectors**

$C_v$ without wind deflector		Length $L'$ [mm] standalone								
		1600	≥ 1700	≥1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width $W$ / mm	1600	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 1700	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥1800	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 1900	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2000	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2100	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2200	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2300	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47
	≥ 2400	0,50	0,50	0,49	0,49	0,48	0,48	0,47	0,47	0,47

**$C_v$  values with wind deflectors**

$C_v$ with wind deflector		Length $L'$ [mm] standalone								
		1600	≥ 1700	≥1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width $W$ / mm	1600	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 1700	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥1800	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 1900	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2000	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2100	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2200	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2300	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
	≥ 2400	0,69	0,69	0,69	0,69	0,70	0,70	0,70	0,70	0,70
wind deflector height	250 [mm]	300 [mm]			350 [mm]			400 [mm]		

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Table 6

Saddleback shaped double flapped NSHEV as standalone rooflight with  $L' + 300$  mm up to a total length  $L = 4800$  mm.

**$C_v$  value without wind deflectors**

The NSHEV has **no** function without wind deflectors.

**$C_v$  values with wind deflectors**

$C_v$ with wind deflector		Length $L'$ [mm] standalone								
		1600	$\geq 1700$	$\geq 1800$	$\geq 1900$	$\geq 2000$	$\geq 2100$	$\geq 2200$	$\geq 2300$	$\geq 2400$
W / mm	1600	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1700$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1800$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 1900$	0,63	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65
	$\geq 2000$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2100$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2200$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
	$\geq 2300$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65
$\geq 2400$	0,63	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	
wind deflector height		300 [mm]		350 [mm]			400 [mm]			

Table 7

Saddleback shaped double flapped NSHEV in continuous rooflight

**C<sub>v</sub> values without wind deflectors**

The NSHEV has **no** function without wind deflectors.

**C<sub>v</sub> values with wind deflectors**

C <sub>v</sub> with wind deflector		Length L' [mm] continuous rooflight								
		1600	≥ 1700	≥1800	≥ 1900	≥ 2000	≥ 2100	≥ 2200	≥ 2300	≥ 2400
Width W / mm	1600	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 1700	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥1800	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 1900	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2000	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2100	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2200	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2300	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
	≥ 2400	0,63	0,63	0,64	0,64	0,64	0,65	0,65	0,65	0,65
wind deflector height		300 [mm]		350 [mm]			400 [mm]			