

# VARIO-THERM-S VARIO-FIREJET® 65° (EKS-TH)

**VELUX®**
**Commercial**


Composite profiles for renovation and heat insulation with system, European Technical Approval (ETA)

## Energy efficiency

### Composite profiles

In the eave profile and flap frame as a combination of:

- rigid PVC multi-chamber insulation structure internally
- aluminium border profile for design and protection externally

### In the kerb connection profile

- rigid PVC multi-chamber insulation profile for kerb head
- system connection for perfect roof seals

### Insulated glazing

- PC 16 mm seven-skinned ( $U_g$ -value of the glazing: 1.8 W/m<sup>2</sup>K)
- PC 25 mm five-skinned ( $U_g$ -value of the glazing: 1.4 W/m<sup>2</sup>K)
- PC 32 mm five-skinned ( $U_g$ -value of the glazing: 1.2 W/m<sup>2</sup>K)

### System accessories

- single flap (EKS-TH) – without thermal bridges
- SHEV device: VARIO-FIREJET® 65° as CO<sub>2</sub> SHEV
- electrical drives for daily ventilation
- SHEV fitting with open/closed function:  
VARIO-FIREJET® 65 J AZ

### Energy efficiency equipment

- thermal decoupling and heat insulation of the eave area
- thermal decoupling and heat insulation of the kerb head
- allows a total heat transmission ( $U_w$ -value) of 1.1 W/m<sup>2</sup>K
- continuous rooflight and SHEV single flap without thermal bridges

## Safety

### European Technical Approval (ETA)

- construction tested and approved by all European building authorities
- legally secure proof of placing on the market throughout Europe



- static design according to Eurocode (DIN EN 1991-1-3 and 1991-1-4)
- EC Certificate of Conformity for the SHEV single flap VARIO-FIREJET® 65°
- coordinated, BG-certified system accessories with VARIO-PROTECT shading system, VARIO-PROTECT 120 VWS traffic ways securing and LB-DSL fall-through protection
- general type approval no. Z-10.19-820

### Product advantages

#### composite profiles

- innovative combination of materials for function and design

#### Refurbishment technology

- flexible construction – uses existing supporting structures

## SHEV flaps for VARIO-THERM-S continuous rooflights

Inclination						
Flap type	Single flap EKS-TH		Single flap EKS-TH		Single flap EKS-TH	
Opening angle	65°		65°		65°	
Upper clear width of the kerb	from 230 to 500		from 180 to 500		from 260 to 560	
Width of the flap (in cm)*	from 103 to 250		from 106 to 250		from 106 to 250	
Length of the flap (in cm) <sup>1</sup>						
	100	204	100	204	100	204
A <sub>g</sub> (in m <sup>2</sup> )	from 1.030 up to 2.500	from 2.101 up to 5.100	from 1.060 up to 2.500	from 2.152 up to 5.100	from 1.000 up to 2.500	from 2.100 up to 5.100
A <sub>a</sub> (in m <sup>2</sup> )	from 0.618 up to 1.500	from 1.366 up to 3.315	from 0.630 up to 1.500	from 1.392 up to 3.315	from 0.600 up to 1.500	from 1.220 up to 3.060

### Note:

1) The flap size is dependent on the width of the continuous rooflight.

## Composite profiles

### Innovative combination of materials for function and design

(Eaves profiles are made of rigid PVC and aluminium border profile)

### Advantages of the composite profiles

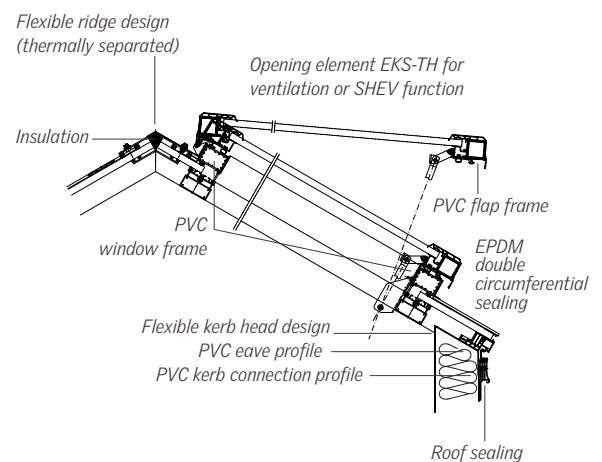
- high-quality and robust construction
- secure and easy roof sealing
- prevents fire flashover according to DIN 18234

### Advantages of the continuous rooflight construction

- structural calculation according to Eurocode (DIN EN 1991-1-3 and DIN EN 1991-1-4)
- additional transoms for areas with high wind and snow load or snow accumulation
- displacement of loads caused by ground snow load of up to 12 kN
- displacement of loads caused by gusting wind speed dynamic pressure up to 4.88 kN

### Advantages of rooflight accessories

- high-quality plastic flap, heat insulated and thermally separated without thermal bridges
- variable design of angles possible



Sectional view of VARIO-THERM-S saddle rooflight with EKS flap

## Refurbishment technology

### Flexible construction uses existing supporting structures

#### Advantages of the refurbishment technology in detail

- customisable design: dimensions and inclinations can be tailored to suit each application
- flexible: kerb adaptors allow installation on almost any existing structure
- additional structural support is not normally required
- can easily replicate existing designs, such as wired glass saddle rooflights
- energy efficient
- roof seals can be easily revised for future works



Wired glass saddle rooflight before refurbishment



Saddle rooflight after refurbishment

## Energy efficiency

### Thermal decoupling and heat insulation of the eave area

(Eave profile made of rigid PVC and aluminium border profile)

- multi-chamber insulation profile without thermal bridges

Enables a total heat transfer ( $U_w$ -value) of  $1.1 \text{ W/m}^2\text{K}$

- ideal for projects with sustainability certification
- ideal for energy efficiency refurbishment

### Thermal decoupling and heat insulation of the kerb head

(Kerb connection profile made of rigid PVC supplementing the eave profile)

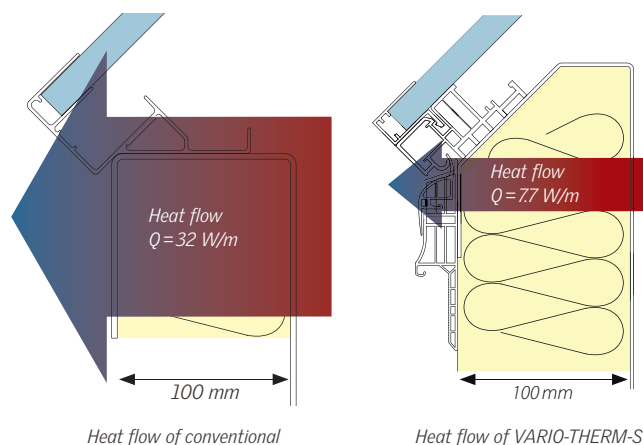
- multi-chamber insulation profile without thermal bridges
- highly insulating and effective kerb head covering
- lowers the  $U_w$ -value of the continuous rooflight by up to  $0.2 \text{ W/m}^2\text{K}$

## Isothermal performance for continuous rooflight with heat flow compared with conventional rooflight eave profiles

Perfect interaction:

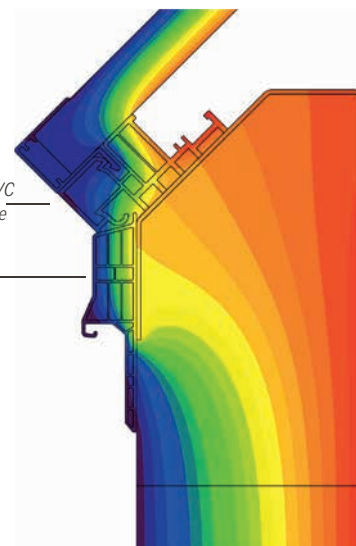
The heat insulating multi-chamber eave profiles and the kerb connection profiles achieve an ideal isothermal curve.

The risk of formation of condensate and mould is additionally reduced.



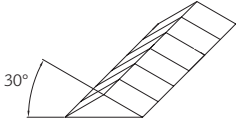
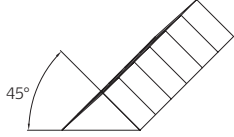
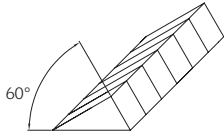
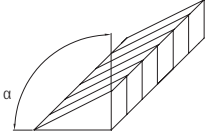
Eave profile made of rigid PVC with aluminium border profile

Kerb connection profile made of rigid PVC



Low heat flow means less heat loss.

## The most important body variants

Saddle rooflight 30°/30°	Saddle rooflight 45°/45°	Shed rooflight 30°/60°	Special saddle rooflight
Flat inclined saddle-type roof	Steep inclined saddle-type roof	Standard shed-type roof	Free choice of inclination (on request)
			

## Technical data

	Glazing					
	PC 16mm PC 16mm seven-skinned		PC 25 mm five-skinned		PC 32 mm five-skinned	
	opal	clear	opal	clear	opal	clear
U <sub>g</sub> -value of the glazing	1.8 W/m <sup>2</sup> K		1.4 W/m <sup>2</sup> K		1.2 W/m <sup>2</sup> K	
U <sub>w</sub> -value of the rooflight construction	1.8 W/m <sup>2</sup> K		1.4 W/m <sup>2</sup> K		1.2 W/m <sup>2</sup> K	
U <sub>w</sub> -value of the rooflight construction (with kerb)	1.6 W/m <sup>2</sup> K		1.4 W/m <sup>2</sup> K		1.2 W/m <sup>2</sup> K	
U <sub>w</sub> -value of the rooflight construction (with kerb + kerb connection profile)	1.5 W/m <sup>2</sup> K		1.2 W/m <sup>2</sup> K		1.1 W/m <sup>2</sup> K	
Light transmission T <sub>L</sub>	54%	64%	40%	49%	38%	48%
g-value	57%	65%	42%	48%	41%	47%
Sound insulation value (R <sub>w</sub> )	21 db	21 db	18 db	18 db	18 db	18 db

Data based on a 30°/30° saddle rooflight measuring 2 x 10 m, with or without a 50 cm kerb.