

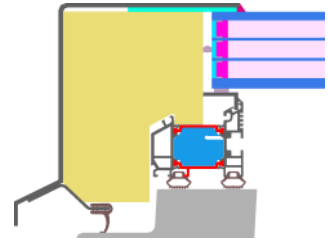
# Certificate

## Passive House suitable component

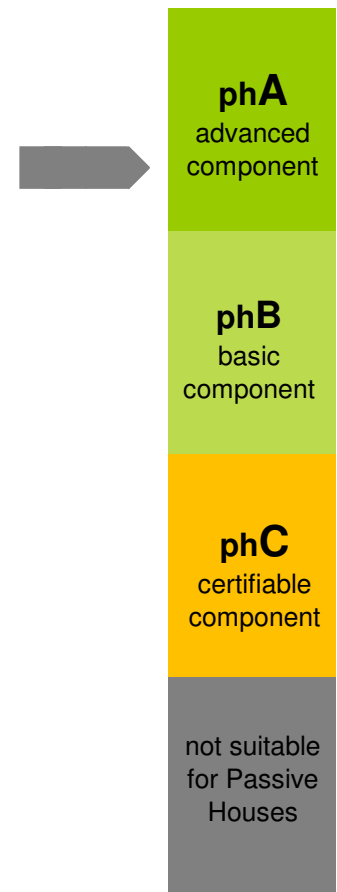
for cool, temperate climate, valid until 31.12.2015

Passive House Institute  
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64283 Darmstadt  
GERMANY

Category: **Skylight**  
 Manufacturer: **LAMILUX Heinrich Strunz GmbH**  
**95111 REHAU, GERMANY**  
 Product name: **CI-System Glaselement FE<sub>energysave+</sub>**



### Passive House Efficiency Class



### The following comfort criteria were used in awarding this certificate:

Given a  $U_g$  value of  $0.61 \text{ W}/(\text{m}^2\text{K})$  by  $0^\circ$  inclination and a skylight size of  $1.50 \text{ m}$  by  $1.50 \text{ m}$ ,

$$U_{SL} = 0.65 \text{ W}/(\text{m}^2\text{K}) \leq 1.10 \text{ W}/(\text{m}^2\text{K})$$

Taking into account the installation based thermal bridges, and provided that the installation is, with regard to the thermal bridges, equal or better than shown in the data sheet, the sky light meets the following criterion.

$$U_{SL,installed} \leq 1.10 \text{ W}/(\text{m}^2\text{K})$$

### Thermal data

	$U_f$ -value [W/(m <sup>2</sup> K)]	Width [mm]	$\Psi_g$ [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer	ACS plus*			
Bottom	0.52	116.4	0.032	0.76
Side/top	0.52	116.4	0.032	

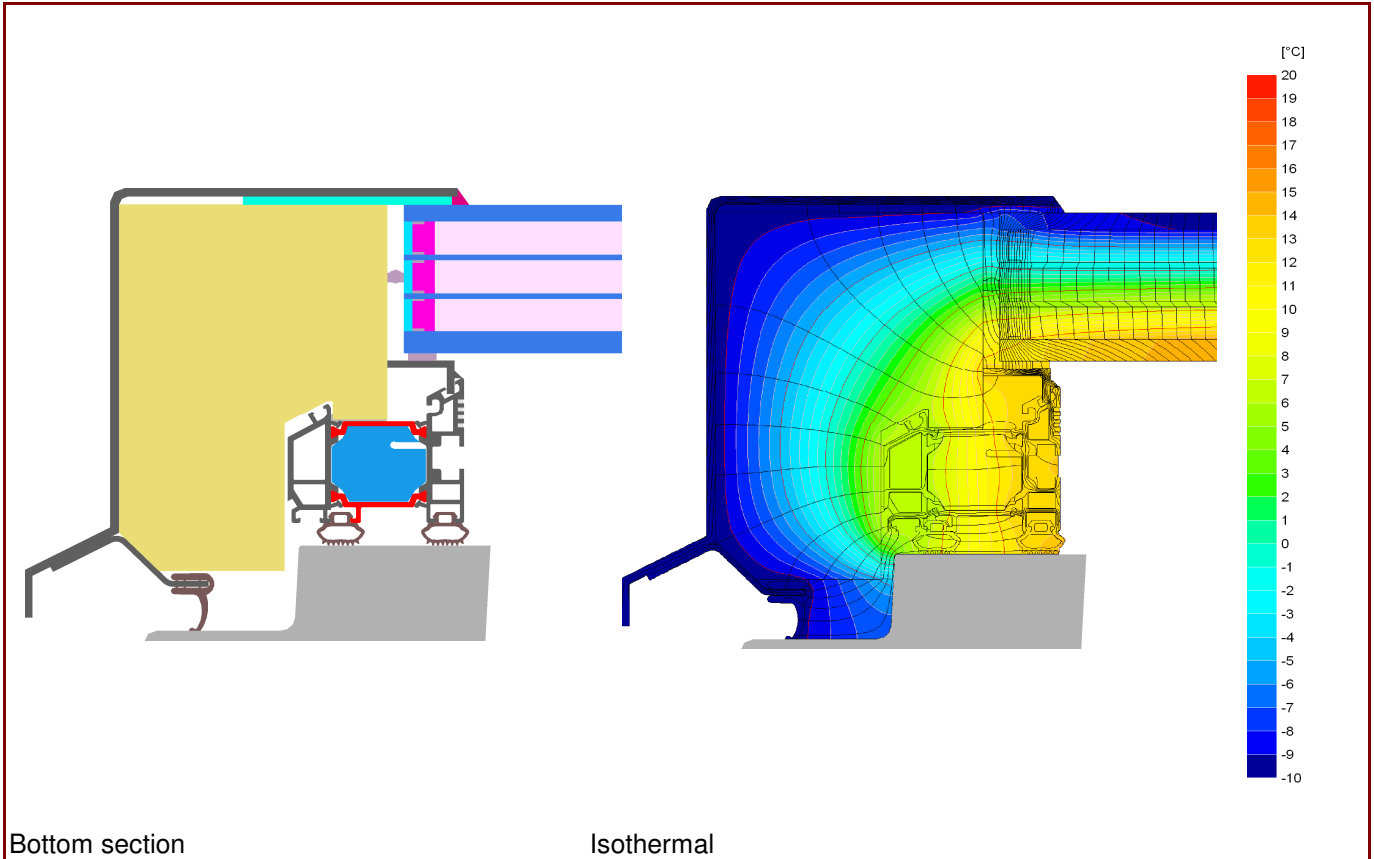
\*Spacers of lower thermal quality, especially those made of aluminium, lead to significantly higher thermal losses and lower temperature factors.

Further information see data sheet



# Data Sheet LAMILUX Heinrich Strunz GmbH, CI-System Glaselement FE<sub>energysave+</sub>

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## Description

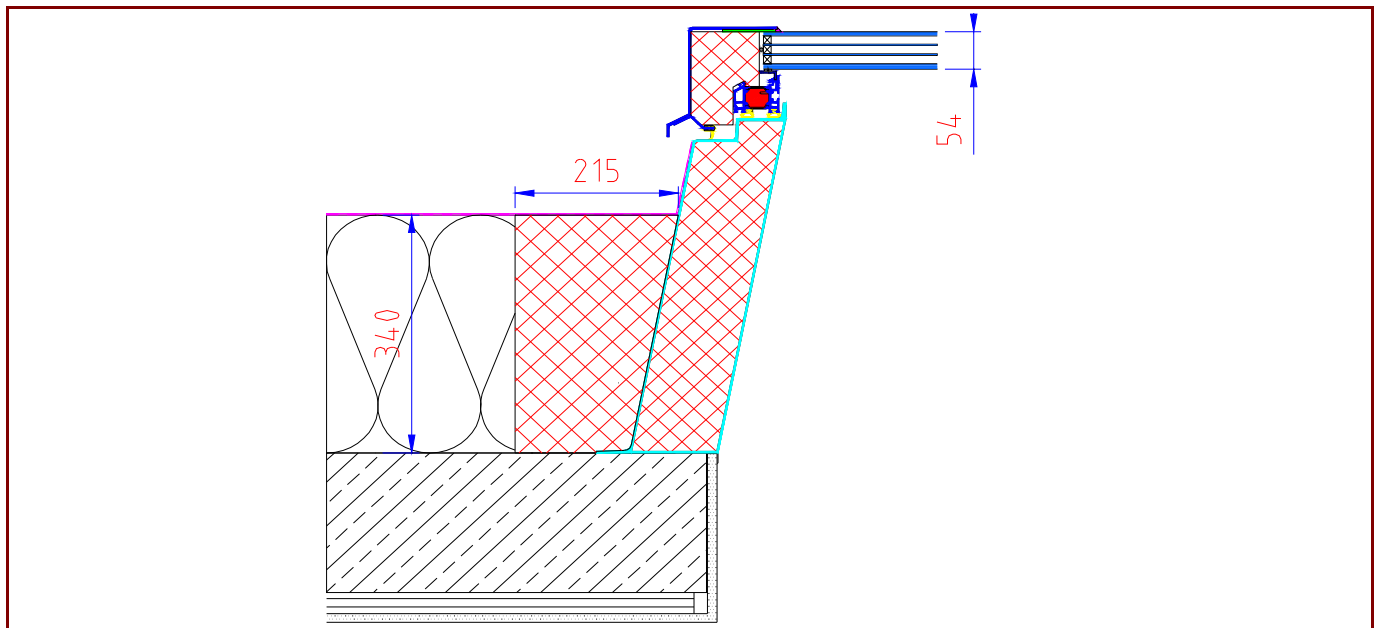
Aluminium frame, insulated by Resol Foam (0.022 W/mK). Used Pane: 54 mm (6/12/2/12/2/12/8), intersection of the Glass: 17 mm. Used spacer: ACS plus

## Thermal data for the window frame

	<b>U<sub>f</sub>-value</b> [W/(m <sup>2</sup> K)]	<b>Width</b> [mm]	<b>ψ<sub>g</sub></b> [W/(mK)]	<b>f<sub>Rsi=0.25</sub></b> [-]
Spacer	ACS plus*			0.76
Bottom	0.52	116	0.032	
Side/top	0.52	116	0.032	

\* Spacers of lower thermal quality leading to higher thermal losses and lower temperatures.

## Installation



### Installation based thermal bridge $\Psi_{\text{instal.}}$ in Passive House suitable walls

Position		Concrete roof construction with inclined light tunnel
Bottom	[W/(mK)]	0.044
Side/top	[W/(mK)]	0.044
$U_{\text{SL,instal.}}$	[W/(m <sup>2</sup> K)]	0.77

### Explanatory notes

The skylight U-values were calculated based on a 1.50 m by 1.50 m window  $U_g = 0.65 \text{ W}/(\text{m}^2\text{K})$  at horizontal orientation.

If other glazing is used, the window U-value changes as follow:

<b>U Glazing</b>	<b><math>U_g</math> [W/(m<sup>2</sup>K)]</b>	0.80	0.84	0.90
<b>U Skylight</b>	<b><math>U_{\text{SL}}</math> [W/(m<sup>2</sup>K)]</b>	0.79	0.82	0.86

Depending on the thermal losses through opaque elements, transparent components are categorised according to efficiency classes. These thermal losses include the losses through the frame, multiplied by its width, the thermal bridge at the edge bond as well as the length of the edge bond.

Please ask the manufacturer for a detailed report containing all calculations and results.

For further information, please visit [www.passivehouse.com](http://www.passivehouse.com) or [www.passipedia.org](http://www.passipedia.org).