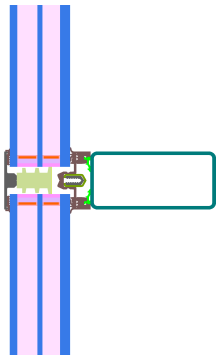
Certificate

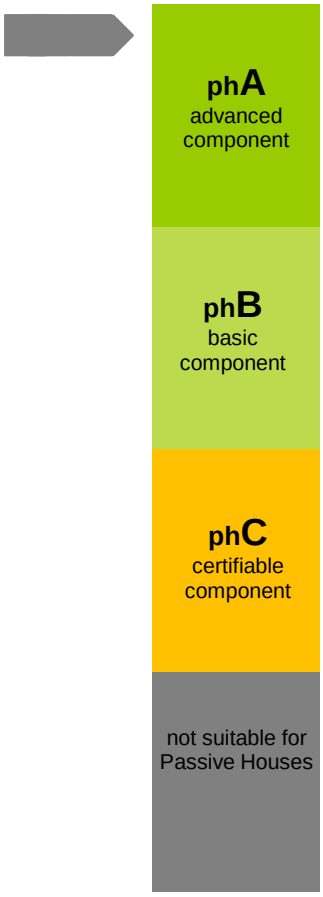
Certified Passive House Component
for cool, temperate climate, valid until 31.12.2016

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: **Inclined Curtain Wall**
Manufacturer: **RAICO Bautechnik GmbH**
87772 Pfaffenhausen, GERMANY
Product name: **THERM+ 50 S-I (schräg)**



Passive House Efficiency Class



The following comfort criteria were used in awarding this certificate:

Given a Ug value of 0.73 W/(m²K) and an element size of 1.23 m by 2.50 m,

U_{CWi} = 0.83 W/(m²K) ≤ 1,00 W/(m²K)

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 facede meets the following criterion.

$U_{CWi,installed}$ ≤ 1,00 W/(m²K)

Thermal data of the construction

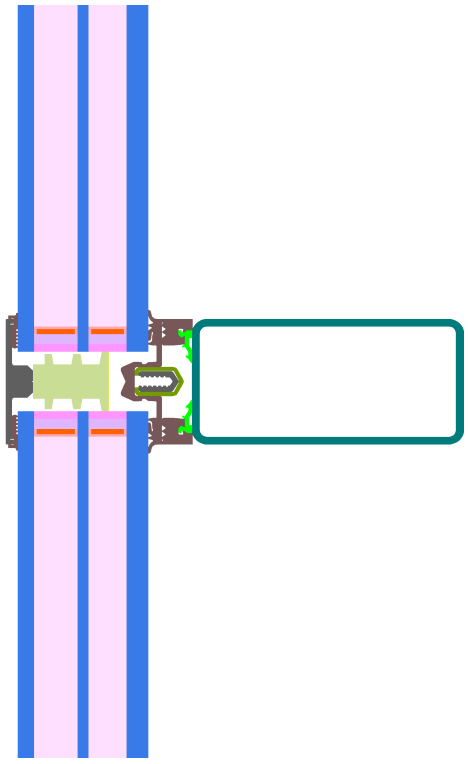
	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer V*	
Transom (t)	0.95	50	0.038	0.77
Mullion (m)	0.87	50	0.039	
Thermal glass carrier bridge χ_{GT} [W/K]:				0.006

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

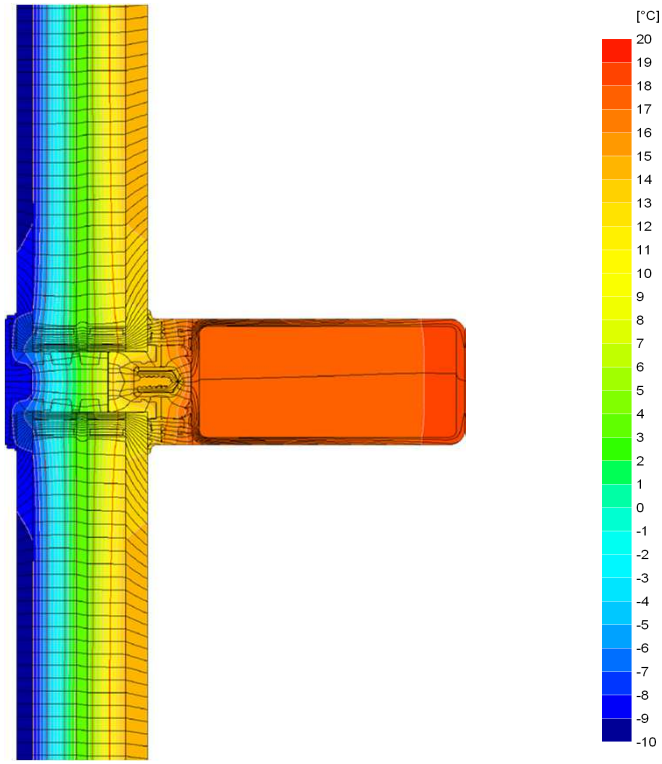
Further information see data sheet

Data Sheet RAICO Bautechnik GmbH, THERM+ 50 S-I (schräg)

Manufacturer RAICO Bautechnik GmbH
87772 Pfaffenhausen, GERMANY
Tel.: +49 8265 911 0
www.raico.de



Bottom section



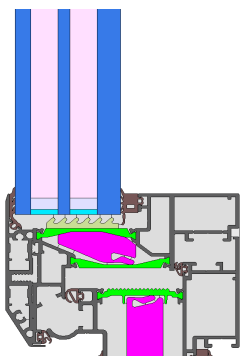
Isothermal

Description

Steel construction, with steel system carrier. Covering- and pressure-strip from aluminium. PE-foam insulator in the glazing rebate (0,038 W/(mK)), covered by aluminium foil on the inside. Used Pane: 48 mm (8/14/4/16/6), intersection of the Glass: 13 mm. Used spacer: Swisspacer V

Thermal data

	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer V*	
Transom (t)	0.95	50	0.038	0.77
Mullion (m)	0.87	50	0.039	
Opening element	1.65	94	0.035	0.73
-				
Thermal glass carrier bridge χ_{GT} [W/K]:				0.006
1: Includes ΔU = 0.19 W/(m²K), measured by ift Rosenheim				
2: Measured by ift Rosenheim				

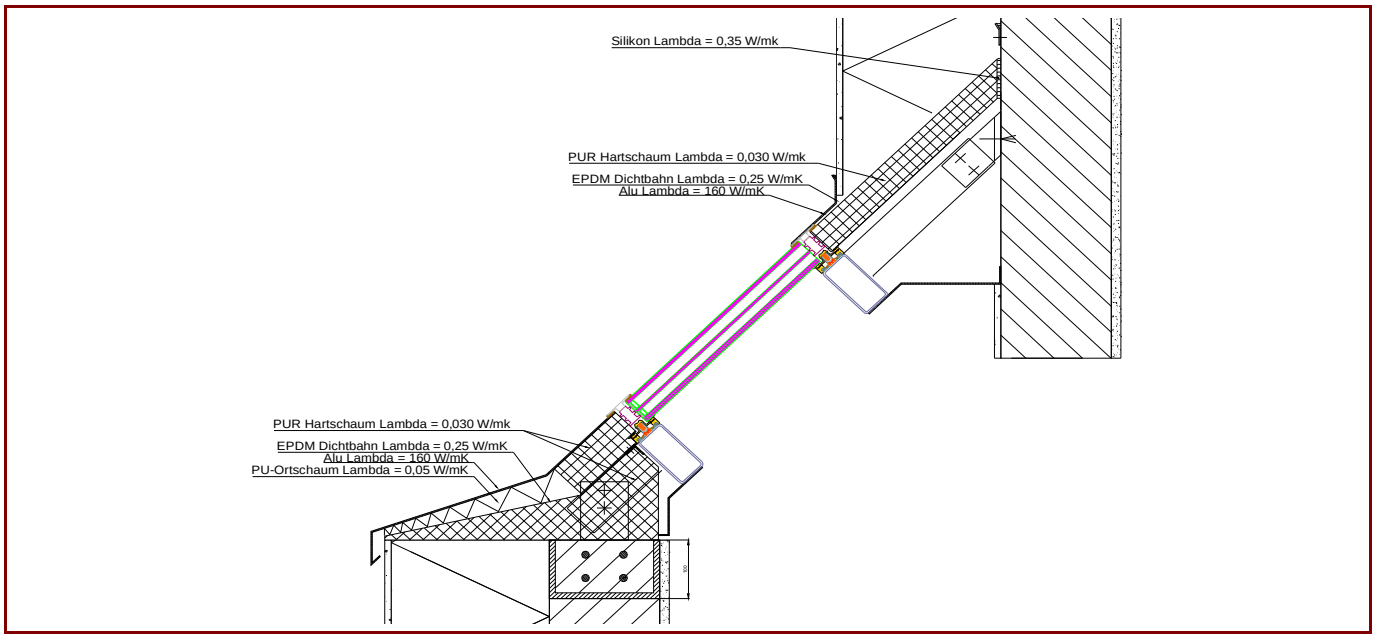


Opening element

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

Data Sheet RAICO Bautechnik GmbH, THERM+ 50 S-I (schräg)

Installation



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

Position		EIFS	Timber construction wall	Ventilated facing
Bottom	[W/(mK)]	0.100		
Side/top	[W/(mK)]	0.091		
$U_{CW,instaled}$	[W/(m²K)]	0.95		

Explanatory notes

The facade-U-values were calculated based on a 1.20 m by 2.50 m element U_g = 0.73 W/(m²K).
If an other glazing is used, the facade U-value changes as follow:

U Glazing	**U_g** [W/(m²K)]	0.70	0.80	1.20
U Facade	**U_{CW}** [W/(m²K)]	0.80	0.90	1.27

Depending on the thermal losses through opaque elements, transparent components are categorised according to efficency 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 or www.passipedia.org.