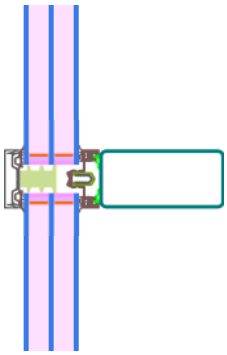
Certificate

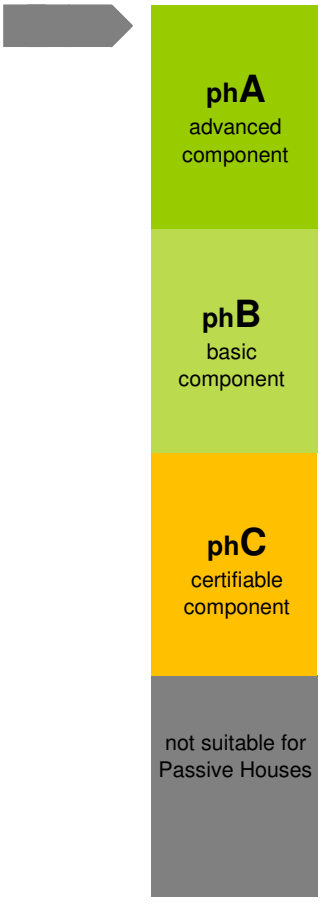
Certified Passive House component
for cool, temperate climate, valid until 31.12.2016

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

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



Passive House Efficiency Class



The following comfort criteria were used in awarding this certificate:

Given a Ug value of 0.70 W/(m²K) and an element size of 1.20 m by 2.50 m,

U_{CW} = 0.80 W/(m²K) ≤ 0.80 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.

$U_{CW,installed}$ ≤ 0.85 W/(m²K)

Thermal data of the construction

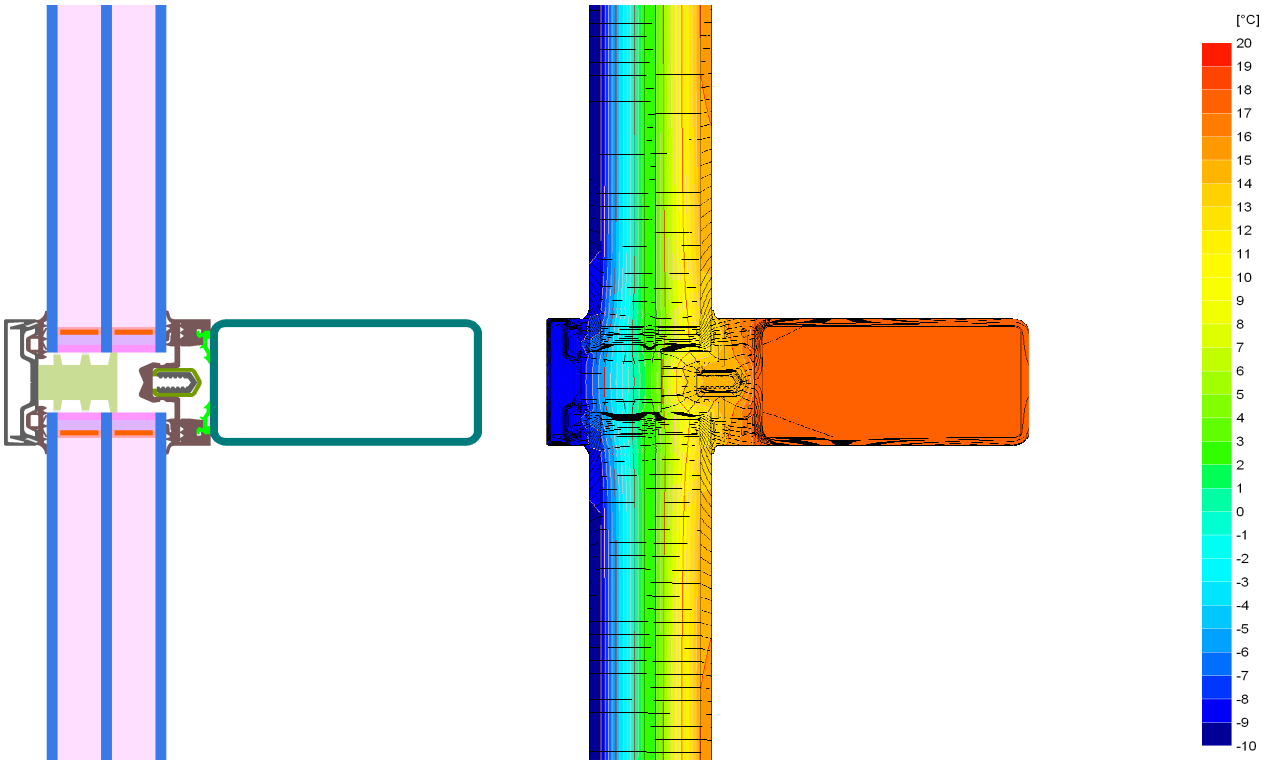
	U_f-value [W/(m²K)]	Width [mm]	Ψ_g [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer			Swisspacer V*	
Transom (t)	0.93	50	0.035	0.78
Mullion (m)	0.93	50	0.035	
Thermal glass carrier bridge χ_{GT} [W/K]:				0.006

*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 (vertikal)

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 (0,040 W/(mK)), cover by aluminium foil on the inside. Used Pane: 44 mm (4/16/4/16/4), 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)	0.93	50	0.035	0.78
Mullion (m)	0.93	50	0.035	
Opening element	1.32	153	0.029	0.75
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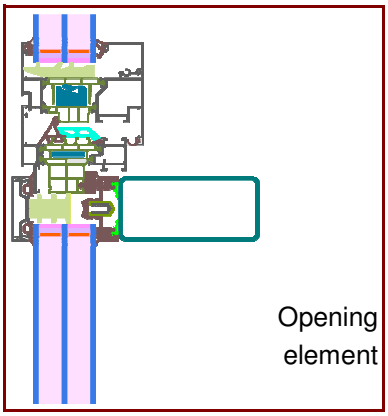
Thermal glass carrier bridge χ_{GT} [W/K]:				0.006
1: Includes ΔU = 0.19 W/(m²K), measured by ift Rosenheim				
2: Measured by ift Rosenheim				



Opening element

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