

# Certificate

## Certified Passive House Component

for cool, temperate climates; valid until 31.12.2016

Passive House Institute  
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Category: **Window Frame**  
 Manufacturer: **OPTIWIN GmbH**  
**6341 Ebbs, AUSTRIA**  
 Product name: **RESISTA**

This certificate was awarded based on the following criteria:

Given a  $U_g$  value of  $0.70 \text{ W}/(\text{m}^2\text{K})$  and a window size of 1.23 m by 1.48 m,

$$U_w = 0.80 \text{ W}/(\text{m}^2\text{K}) \leq 0.80 \text{ W}/(\text{m}^2\text{K})$$

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 window meets the following criterion.

$$U_{w, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2\text{K})$$

### Thermal data

	$U_f$ -value [W/(m <sup>2</sup> K)]	Width [mm]	$\Psi_g$ [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer				0.71
Bottom	0.91	95	0.024	
Side/top	0.81	95	0.024	

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

For further information, please see the data sheet

**COMPONENT AWARD 2015**  
**SYSTEM CONNECTA 1st PRIZE**

[www.passivehouse.com](http://www.passivehouse.com)

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**Passive House Efficiency Class**

phA  
advanced component

phB  
basic component

phC  
certifiable component

not suitable for Passive Houses

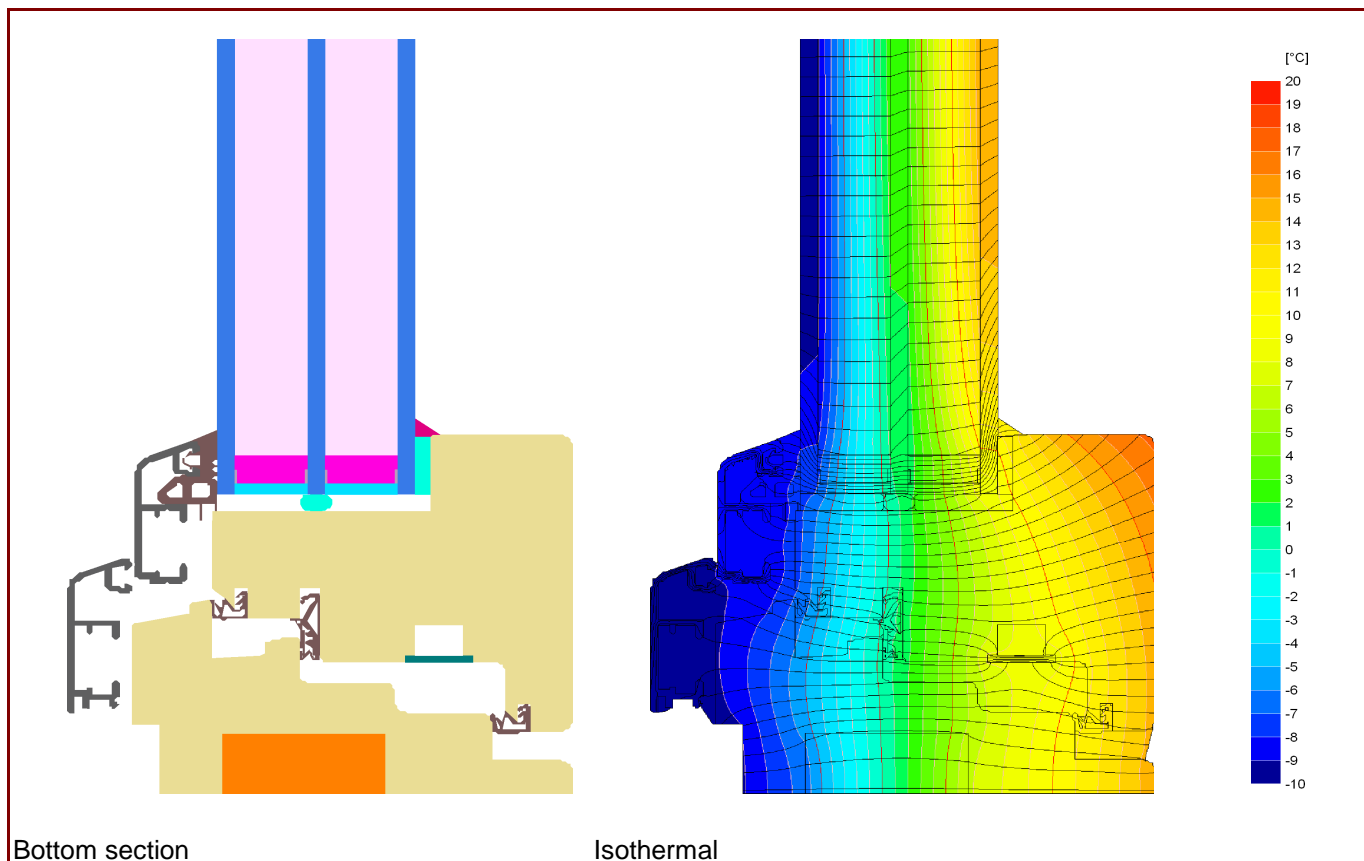
**phA**

**CERTIFIED COMPONENT**

Passive House Institute

## Data Sheet OPTIWIN GmbH, RESISTA

**Manufacturer** OPTIWIN GmbH  
 Wildbichlerstrasse 1, 6341 Ebbs, AUSTRIA  
 Tel.: +43 5373 46046 0  
 Email: office@optiwin.net, www.optiwin.net

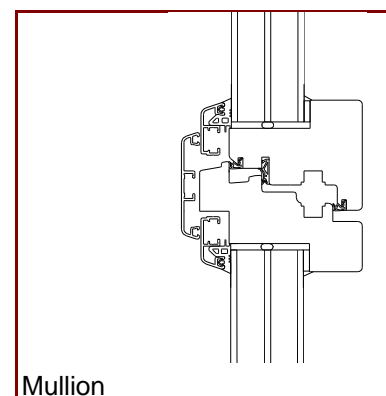


## Description

Timber window frame (0,11 W/(mK)) with aluminium cladding on the outside. Internal frame insulation: 0,04 W/(mK). Pane thickness: 48 mm (4/18/4/18/4), Rebate depth: 15 mm.

## Thermal data for the window frame

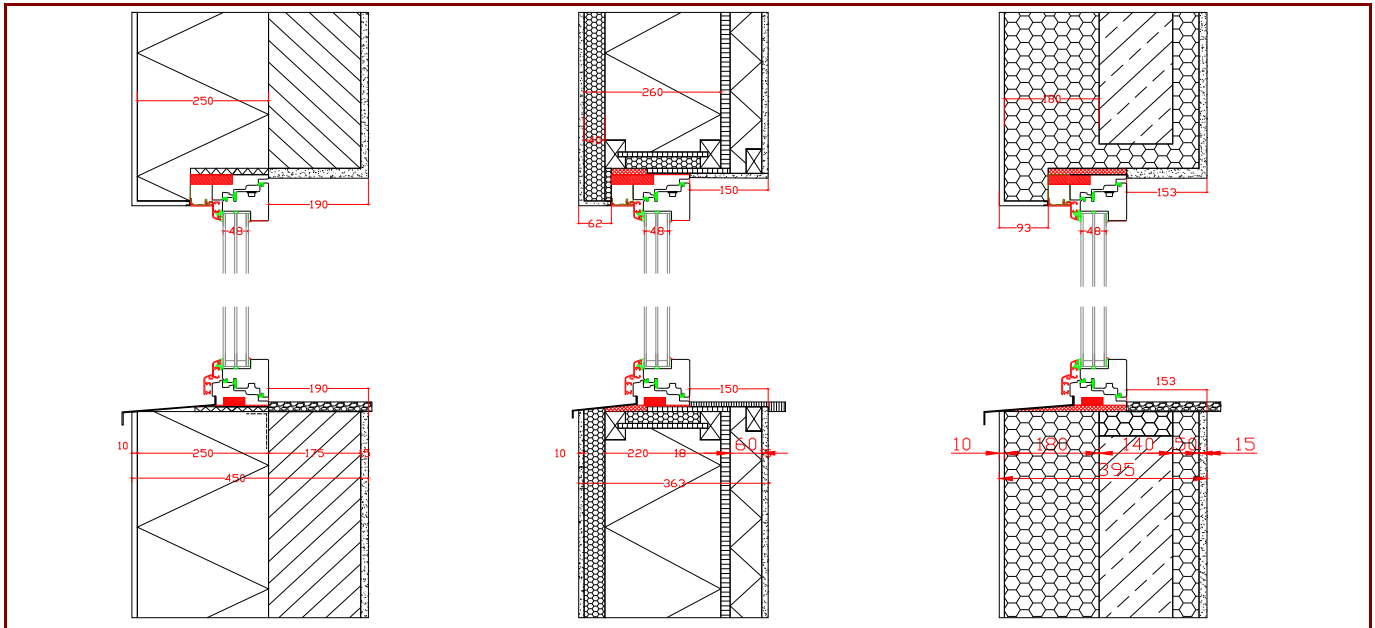
	$U_f$ -value [W/(m <sup>2</sup> K)]	Width [mm]	$\Psi_g$ [W/(mK)]	$f_{Rsi=0.25}$ [-]
Spacer				acs+*
Bottom	0.91	95	0.024	0.71
Side/Top	0.81	95	0.024	
Flying Mullion	0.94	122	0.023	0.71



\* Spacers of lower thermal quality lead to higher thermal losses and lower glass edge temperatures.

# Data Sheet OPTIWIN GmbH, RESISTA

## Installation



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

		EIFS	Timber construction wall	Insulated formwork blocks
<b>Position</b>				
<b>Bottom</b>	[W/(mK)]	0.017	0.029	0.018
<b>Side/Top</b>	[W/(mK)]	0.007	0.010	0.006
<b><math>U_{W,\text{instal.}}</math></b>	[W/(m <sup>2</sup> K)]	0.82	0.84	0.82

### Explanatory notes

The window U-values were calculated based on a 1.23 m by 1.48 m window  $U_g = 0.70 \text{ W}/(\text{m}^2\text{K})$ .  
If better glazing is used, the window U-values decrease as follows:

<b>U Glazing</b>	<b><math>U_g</math> [W/(m<sup>2</sup>K)]</b>	0.64	0.58	0.54
<b>U Window</b>	<b><math>U_w</math> [W/(m<sup>2</sup>K)]</b>	0.75	0.71	0.68

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, the frame width, the thermal bridge at the glass edge as well as the length of the glass edge. Certificates for arctic regions are too valid vor cold, certificates for cold regions are too valid for cool, temperate zones.

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).