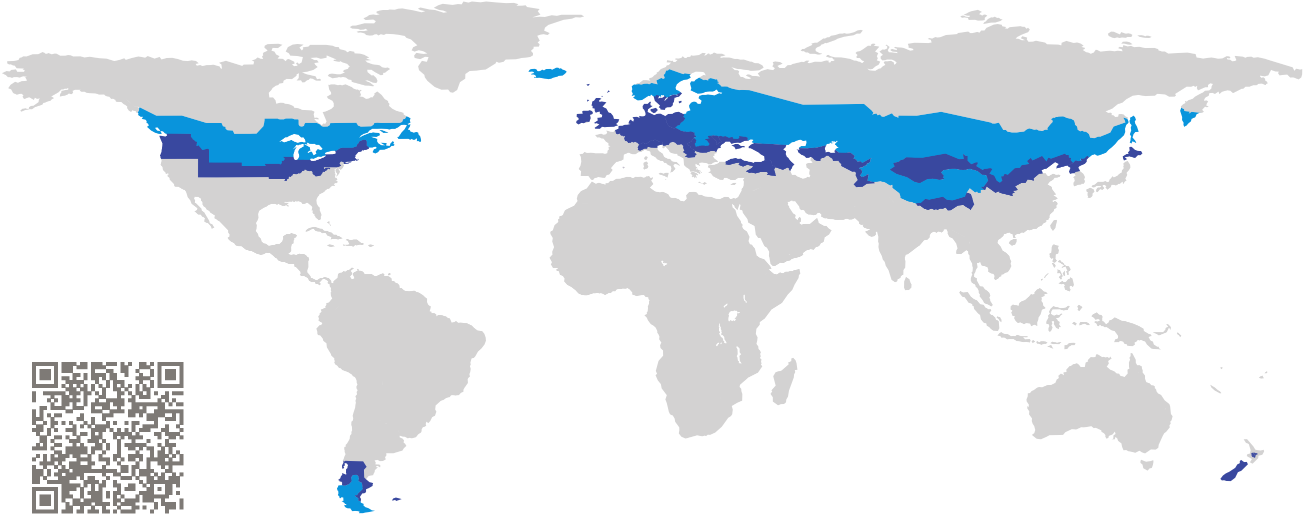
# CERTIFICATE

**Certified Passive House Component**

Component-ID 1523wc02 valid until 31st December 2025

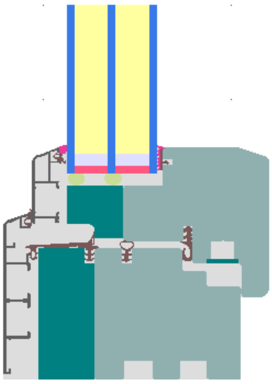
Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category: **Window connection**

Manufacturer: **Aluron Sp. z o.o.,
Zawiercie,
Poland**

Product name: **GEMINI Passiv Ultra**



**This certificate was awarded based on the following criteria for the cold climate zone**

Comfort $U_{W,\text{installed}} \leq 0.65\,\mathrm{W/(m^2\,K)}$
with $U_g = 0.52\,\mathrm{W/(m^2\,K)}$

Hygiene $f_{Rsi=0.25} \geq 0.75$

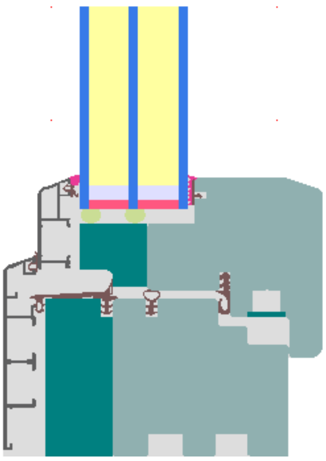
cold climate

ph **B**

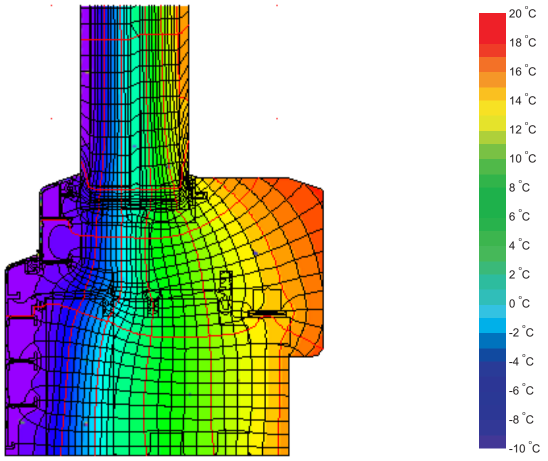
**CERTIFIED COMPONENT**

Passive House Institute

| **Passive House efficiency class** | phE | phD | phC | phB | phA |
|---|---|---|---|---|---|



Calculation model



Isothermal

## Description

Timber Aluminium frame (Spruce/fir 0,11 W/(mK)), insulated by highly resistant PS-foam (0.043 W/(mK)). The certificate covers the variants of system GEMINI Passiv: Classic, Softline, Retro, Linear, Quadrat as long as only the aluminium cladding changes. Pane thickness: 48 mm (4/18/4/18/4), rebate depth: 12 mm. Spacer: SWISSPACER Ultimate with DOWSIL ™ 3364 Warm Edge IG Sealant.

## Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g$ = 0.52 W/(m$^2$ K). If a higher quality glazing is used, the window U-values will improve as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Glazing | $U_g$ = | 0.52 | 0.66 | 0.58 | 0.50 | W/(m$^2$ K) |
| | | ↓ | ↓ | ↓ | ↓ | |
| Window | $U_W$ = | 0.62 | 0.72 | 0.66 | 0.61 | W/(m$^2$ K) |

Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

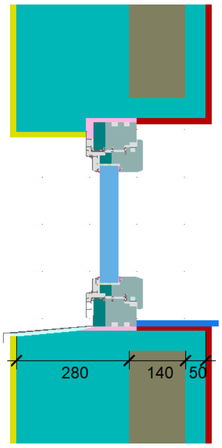
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.

Further information relating to certification
can be found on www.passivehouse.com and passipedia.org.

## Validated installations

### Formwork blocks (operable)

$U_{\text{Wall}} = 0.10\,\text{W/(m}^2\,\text{K)}$

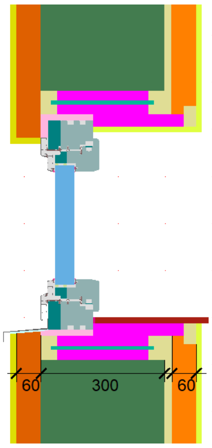


| $\Psi_{\text{install}}$ | W/(m K) |
|---|---|
| Top | 0.007 |
| Side | 0.007 |
| Bottom | 0.018 |

$U_{W,\text{installed}} = 0.65\,\text{W/(m}^2\,\text{K)}$

### Lightweight timber (operable)

$U_{\text{Wall}} = 0.10\,\text{W/(m}^2\,\text{K)}$

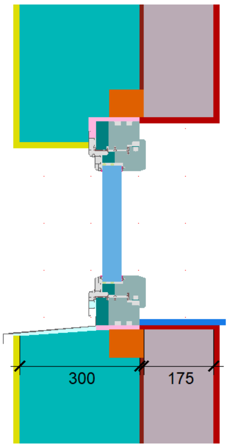


| $\Psi_{\text{install}}$ | W/(m K) |
|---|---|
| Top | 0.009 |
| Side | 0.006 |
| Bottom | 0.017 |

$U_{W,\text{installed}} = 0.65\,\text{W/(m}^2\,\text{K)}$

### Exterior insulation and finishing system (EIFS) (operable)

$U_{\text{Wall}} = 0.11\,\text{W/(m}^2\,\text{K)}$



| $\Psi_{\text{install}}$ | W/(m K) |
|---|---|
| Top | 0.005 |
| Side | 0.005 |
| Bottom | 0.021 |

$U_{W,\text{installed}} = 0.65\,\text{W/(m}^2\,\text{K)}$

| Frame values | | Frame width $b_f$ mm | $U$-value frame $U_f$ W/(m$^2$ K) | $\Psi$-glazing edge $\Psi_g$ W/(m K) | Temp. Factor $f_{Rsi=0.25}$ [-] |
|---|---|---|---|---|---|
| Flying Mullion | (FM1) | 134 | 0.72 | 0.021 | 0.75 |
| Bottom | (OB1) | 124 | 0.68 | 0.021 | 0.75 |
| Top | (OH1) | 124 | 0.68 | 0.021 | 0.75 |
| Lateral | (OJ1) | 124 | 0.68 | 0.021 | 0.75 |

Spacer: SWISSPACER ULTIMATE    Secondary seal: DOWSIL ™ 3364 Warm Edge IG Sealant