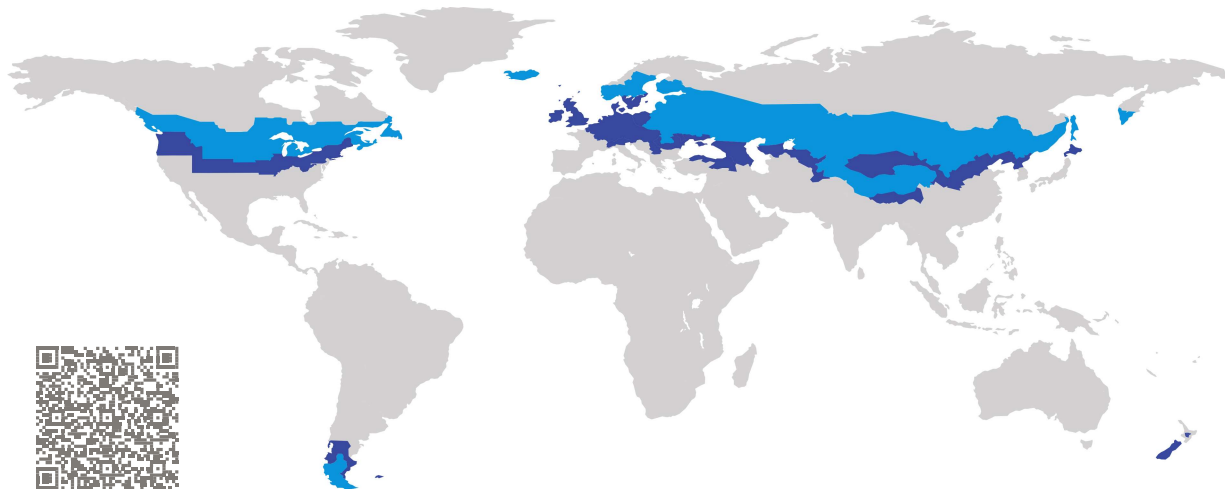


CERTIFICATE

Certified Passive House Component

Component-ID 2066wc02 valid until 31st December 2024

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

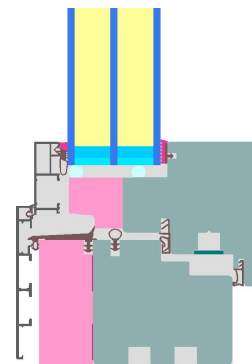


Category: **Window connection**
Manufacturer: **Vetta Building Technologies,
Etobicoke,
Canada**
Product name: **Summit C108**

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

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

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



Passive House
efficiency class

phE

phD

phC

phB

phA

www.passivehouse.com

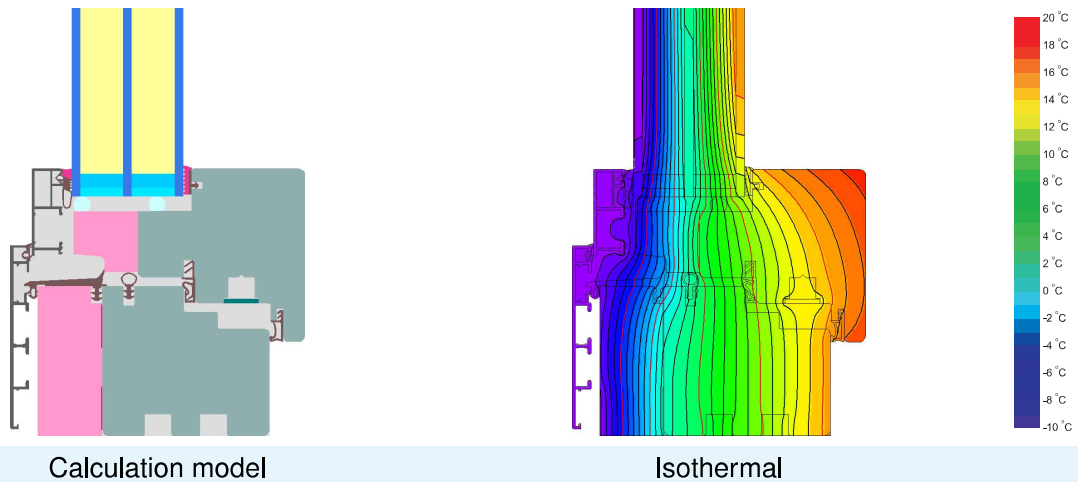
cold climate



phB

**CERTIFIED
COMPONENT**

Passive House Institute



Description

Timber Aluminium frame (Spruce/fir 0,11 W/(mK)), insulated by highly resistant PS-foam (0.043 W/(mK)). Pane thickness: 52 mm (4/20/4/20/4), rebate depth: 13 mm.

Explanation

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

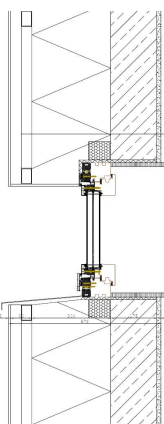
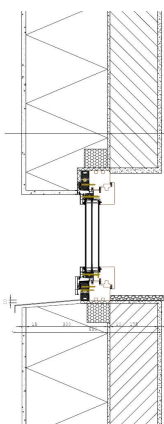
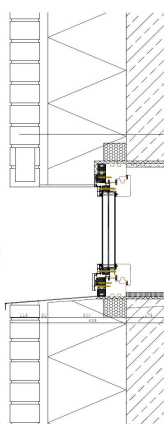
Glazing	$U_g =$	0.52	0.50	0.48	0.47	W/(m ² · K)
		↓	↓	↓	↓	
Window	$U_w =$	0.63	0.61	0.60	0.59	W/(m ² · K)

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

Ventilated facade		Exterior insulation and finishing system (EIFS) (operable)		Cavity wall (operable)	
$U_{Wall} = 0.11 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{Wall} = 0.11 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{Wall} = 0.11 \text{ W}/(\text{m}^2 \cdot \text{K})$	
 <p>Ventilated facade – substructure Mineral wool 0.035 W/(mK) Concrete 2.3 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>		 <p>Exterior plaster 1.0 W/(mK) EPS 0.035 W/(mK) Adhesive 0.70 W/(mK) Sand-lime brick 1.0 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>		 <p>Clinker Brick 1.2 W/(mK) Air gap EPS 0.035 W/(mK) Sand-lime brick 1.0 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>	
$\Psi_{install}$	W/(m · K)	$\Psi_{install}$	W/(m · K)	$\Psi_{install}$	W/(m · K)
Top	-0.010	Top	0.003	Top	0.001
Side	-0.010	Side	0.003	Side	0.001
Bottom	0.020	Bottom	0.021	Bottom	0.020
$U_{W,installed} = 0.62 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{W,installed} = 0.65 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{W,installed} = 0.64 \text{ W}/(\text{m}^2 \cdot \text{K})$	

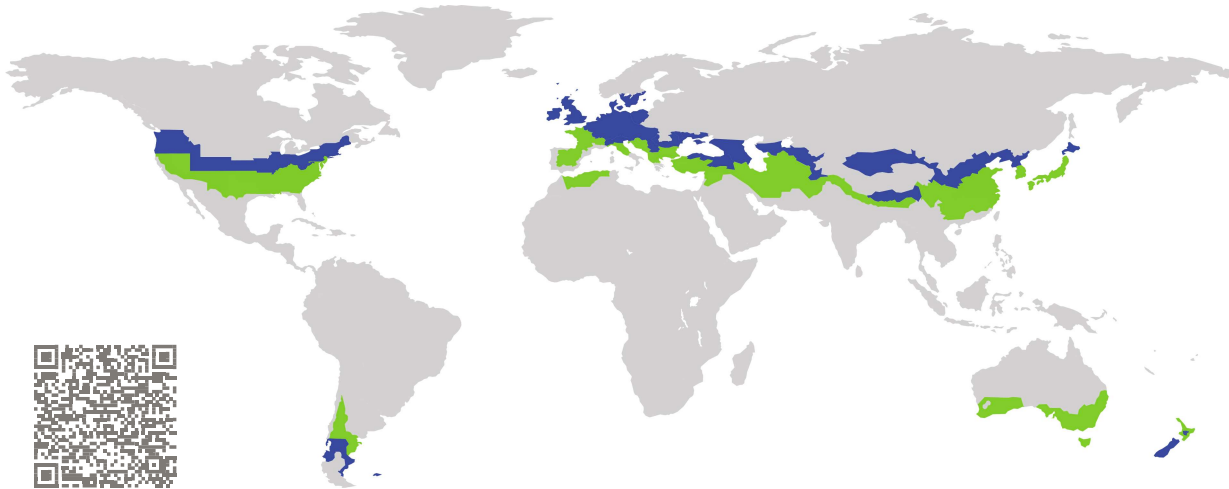
Frame values		Frame width b_f mm	U-value frame U_f W/(m ² · K)	Ψ -glazing edge Ψ_g W/(m · K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Flying Mullion (FM1)		136	0.72	0.021	0.77
Bottom (OB1)		125	0.69	0.021	0.75
Top (OH1)		125	0.69	0.021	0.75
Lateral (OJ1)		125	0.69	0.021	0.75
		Spacer: MULTITECH G		Secondary seal: Butyl	

CERTIFICATE

Certified Passive House Component

Component-ID 1522wi03 valid until 31st December 2024

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



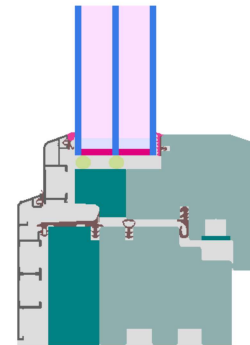
Category: **Window Frame**
Manufacturer: **Aluron Sp. z o.o.,
Zawiercie,
Poland**

Product name: **GEMINI Passiv** (NOTE: VETTA Building Technologies Inc.
sells under the brand name as Summit C97)

This certificate was awarded based on the following
criteria for the cool, temperate climate zone

Comfort $U_W = 0.76 \leq 0.80 \text{ W}/(\text{m}^2 \cdot \text{K})$
 $U_{W,\text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \cdot \text{K})$
with $U_g = 0.70 \text{ W}/(\text{m}^2 \cdot \text{K})$

Hygiene $f_{Rsi=0.25} \geq 0.70$



Passive House
efficiency class

phE

phD

phC

phB

phA

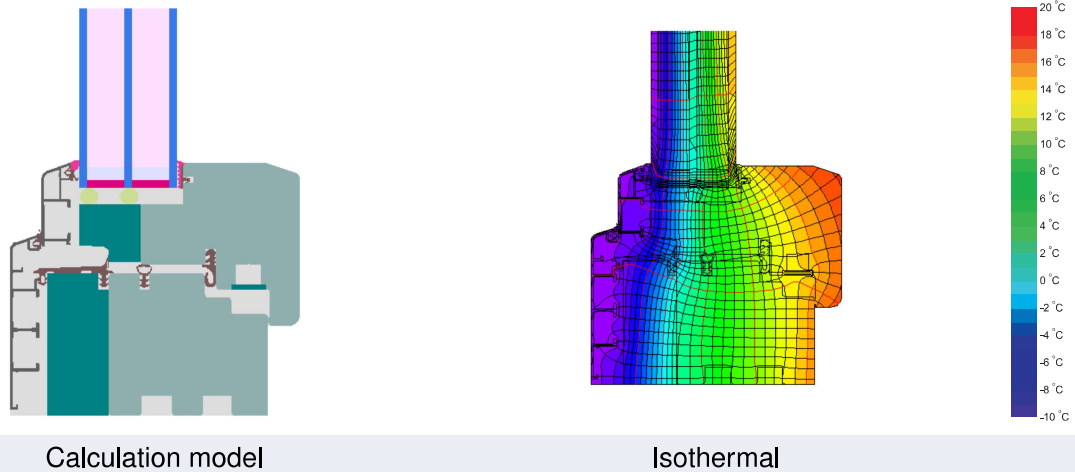
www.passivehouse.com

cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute



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™ 3362 silicone secondary seal.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.70 \text{ W}/(\text{m}^2 \cdot \text{K})$. If a higher quality glazing is used, the window U-values will improve as follows:

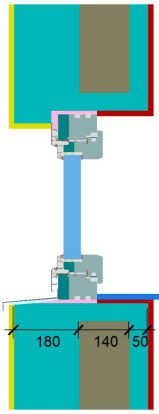
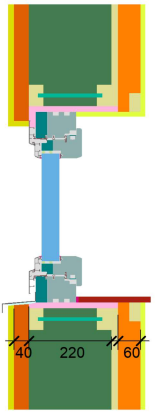
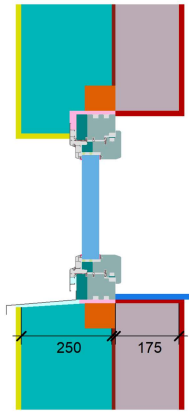
Glazing	$U_g =$	0.70	0.64	0.58	0.52	W/(m ² · K)
		↓	↓	↓	↓	
Window	$U_W =$	0.76	0.72	0.68	0.64	W/(m ² · K)





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)		Lightweight timber (operable)		Exterior insulation and finishing system (EIFS) (operable)	
$U_{Wall} = 0.15 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \cdot \text{K})$	
					
$\Psi_{install}$	$\text{W}/(\text{m} \cdot \text{K})$	$\Psi_{install}$	$\text{W}/(\text{m} \cdot \text{K})$	$\Psi_{install}$	$\text{W}/(\text{m} \cdot \text{K})$
Top	0.005	Top	0.013	Top	0.004
Side	0.005	Side	0.013	Side	0.004
Bottom	0.015	Bottom	0.020	Bottom	0.021
$U_{W,installed} = 0.78 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{W,installed} = 0.80 \text{ W}/(\text{m}^2 \cdot \text{K})$		$U_{W,installed} = 0.78 \text{ W}/(\text{m}^2 \cdot \text{K})$	

Frame values		Frame width b_f mm	U-value frame U_f $\text{W}/(\text{m}^2 \cdot \text{K})$	Ψ -glazing edge		Temp. Factor $f_{Rsi=0.25}$ [-]
				Ψ_g $\text{W}/(\text{m} \cdot \text{K})$		
Flying Mullion	(FM1) 	134	0.73	0.026		0.70
Bottom	(OB1) 	124	0.69	0.026		0.70
Top	(OH1) 	124	0.69	0.026		0.70
Lateral	(OJ1) 	124	0.69	0.026		0.70

Spacer: SWISSPACER ULTIMATE

Secondary seal: DOWSIL™ 3362 Insulating Glass Silicone Sealant

