

# Summary of U Value Calculation

Undertaken by Amanda Tyas, of Garrard Windows  
Reference Number: KS Argon Thermobar



Liniar Door: French Style 1 (15.1)

Calculation Date: 2017-09-26

Calculated following the principles of EN ISO 10077-1:2006

## Basic Dimensions

Width of Opening: 2000 mm

Height of Opening: 2000 mm

## Door Glazing Profile

Number of Spaces: 1 (Double Glazing)

Gas Temperature: 283.15 K (10°C)

Normal Emissivity of Internal Glass Surface: 0.89

Space	Width	Gas Type
1	20 mm	10% Air : 90% Argon

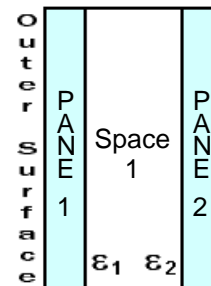
Space	e1	e2
1	0.89 (0.84 corr)	0.05 (0.06 corr)

Pane	Thickness
1	4 mm
2	4 mm

Total Thickness of Glazing: 28 mm

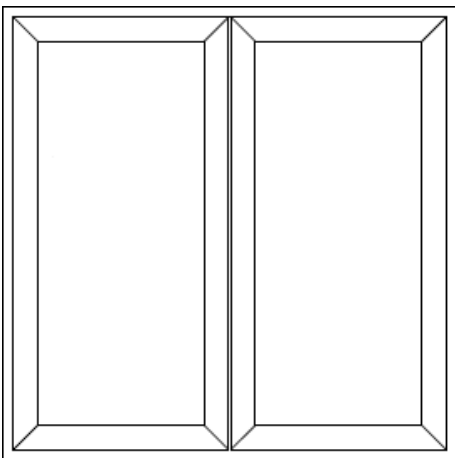
External Heat Transfer Coefficient: 25 W/m<sup>2</sup>.K

Internal Heat Transfer Coefficient: 7.7 W/m<sup>2</sup>.K



## Configuration of Unit: Frame & Pane Areas

Numbers on each frame edge correspond to the Frame Side in the frame table on the next page, and Circled Numbers refer to the Pane in the panes table.



# Summary of U Value Calculation (ctd)



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## Door Frame

Side	A f,i	A f,e	A frame	Int. Frame W	Ext. Frame W	U frame
1	0.259 m <sup>2</sup>	0.259 m <sup>2</sup>	0.259 m <sup>2</sup>	156 mm	156 mm	1.49 W/m <sup>2</sup> .K
2	0.312 m <sup>2</sup>	0.312 m <sup>2</sup>	0.312 m <sup>2</sup>	156 mm	156 mm	1.49 W/m <sup>2</sup> .K
3	0.259 m <sup>2</sup>	0.259 m <sup>2</sup>	0.259 m <sup>2</sup>	156 mm	156 mm	1.49 W/m <sup>2</sup> .K
4	0.372 m <sup>2</sup>	0.372 m <sup>2</sup>	0.372 m <sup>2</sup>	186 mm	186 mm	1.48 W/m <sup>2</sup> .K
5	0.373 m <sup>2</sup>	0.373 m <sup>2</sup>	0.373 m <sup>2</sup>	225 mm	225 mm	1.78 W/m <sup>2</sup> .K

$$\Sigma A_{\text{frame}} : 1.574 \text{ m}^2$$

$$\Sigma A_{\text{frame}} : U_{\text{frame}} : 2.453 \text{ W/K}$$

## Door Panes

Pane	Type	A panel	U panel	Perimeter	Spacer	PSI
1	Glass	1.213 m <sup>2</sup>	1.219 W/m <sup>2</sup> .K	4.554 m	Thermobar	0.032 W/m.K

Pane	Type	A panel	U panel	Perimeter	Spacer	PSI
1	Glass	1.213 m <sup>2</sup>	1.219 W/m <sup>2</sup> .K	4.554 m	Thermobar	0.032 W/m.K
2	Glass	1.213 m <sup>2</sup>	1.219 W/m <sup>2</sup> .K	4.554 m	Thermobar	0.032 W/m.K

$$\Sigma A_{\text{pane}} : 2.426 \text{ m}^2$$

$$\Sigma A_{\text{pane}} \cdot U_{\text{pane}} : 2.958 \text{ W/K}$$

$$\Sigma l_{\text{pane}} \cdot \psi_{\text{pane}} : 0.291 \text{ W/K}$$

Total Thermal Conductance of Glazing: 1.54W/m<sup>2</sup>.K

Final U Value for Unit: 1.4 W/m<sup>2</sup>.K