



Sample Style:
Casement
Fixed Light / Side Hung

Blue line illustrates opening light length (air leakage)

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 Project Details: **Multi Sculp, Optifloat (1), Pilk's K glass S (2), Air (2), Swisspacer V (2), Hot Melt Butyl**

Input Values:
 Yellow input, green intermediary, blue finals X' DP is no.of decimal places to enter

Nominal 4mm etc to ODP , others 1DP			
Glazing dimensions and properties:			
Thickness of pane 1	4	mm	
Pane 1/2 distance	12	mm	
Gas fill (1/2)	Air 100%		
Thickness of pane 2	4	mm	
Complete next 3 cells for TG IGU			
Pane 2/3 distance	12	mm	
Gas fill (2/3)	Air 100%		
Thickness of pane 3	4.0	mm	
Glazing Trans. - 3DP	U_g	0.978	W/(m ² ·K)
g-value - 2DP	g_{\perp}	0.61	

Thermal transmittance of window from hot box test		
$U_w - 2DP$		W/(m ² ·K)

Frame dimensions:	b_f	Without gasket	Gasket protrusion	With gasket	
		(mm)	(mm)	(mm)	
All frame values to nearest 0.5mm, gaskets to 1DP					
F1 fixed sill	57	0.0	57		Total
F2 fixed head	57	0.0	57		
F3 fixed jamb	57	0.0	57		
F4 + F5 sash sill	F4 fixed sash sill	57	n/a	57	104
	F5 moving sash sill	47	0.0	47	
F6 + F7 sash head	F6 fixed sash head	57	n/a	57	104
	F7 moving sash head	47	0.0	47	
F8 + F9 sash jamb	F8 Fixed sash jamb	57	n/a	57	104
	F9 moving sash jamb	47	0.0	47	
F10 + F11 mullion	F10 fixed mullion	67	0.0	67	114
	F11 moving mullion	47	0.0	47	
Total gasket area				0	m ²

Window Dimensions:		Area		
Section	Length (m)	Width (m)	No gasket (m ²)	With gasket (m ²)
Fixed Light	1.3660	0.5245	0.7165	0.7165
Opening light	1.2720	0.4305	0.5476	0.5476
Total glazing, A_g			1.2641	1.2641
Frame	(m)	(m)	(m ²)	(m ²)
F1	0.6150	0.0570	0.0325	0.0325
F2	0.6150	0.0570	0.0325	0.0325
F3	1.4800	0.0570	0.0811	0.0811
F4	0.6150	0.0570	0.0325	0.0325
F5	0.5245	0.0470	0.0224	0.0224
F6	0.6150	0.0570	0.0325	0.0325
F7	0.5245	0.0470	0.0224	0.0224
F8	1.4800	0.0570	0.0811	0.0811
F9	1.3660	0.0470	0.0620	0.0620
F10	1.4800	0.0670	0.0953	0.0953
F11	1.3660	0.0470	0.0620	0.0620
Total Frame			0.5563	0.5563
Total Window, A_w			1.8204	1.8204
Percentage fixed light glass area			39.36%	39.36%
Percentage opening light glass area			30.08%	30.08%
Percentage glass area (total)			69.44%	69.44%

Where a U_d value from hot box testing is available, no L_f^{2D} or L_{ψ}^{2D} values need to be entered							
Frame conductance:		All L values to 4DP . All b values to ODP					
Section	b_f (mm)	U_f (W/(m ² ·K))	Frame areas (no gaskets) (m ²)	Heat flow (W/K)	ψ (W/(m ² ·K))	l_g (m)	Heat flow (W/K)
F1 fixed sill	190	0.2194				0.2776	190
F2 fixed head	190	0.2194				0.2776	190
F3 fixed jamb	190	0.2194				0.2776	190
F4 + F5 sash sill	190	0.2848				0.3425	190
F6 + F7 sash head	190	0.2848				0.3425	190
F8 + F9 sash jamb	190	0.2848				0.3425	190
F10 + F11 mullion	380	0.4731				0.5889	380

Frame:	b_f (no gaskets) (m)	U_f (W/(m ² ·K))	Frame areas (no gaskets) (m ²)	Heat flow (W/K)	ψ (W/(m ² ·K))	l_g (m)	Heat flow (W/K)
F1 fixed sill	0.0570	1.0680	0.0325	0.0347	0.0309	0.5245	0.0162
F2 fixed head	0.0570	1.0680	0.0325	0.0347	0.0309	0.5245	0.0162
F3 fixed jamb	0.0570	1.0680	0.0811	0.0866	0.0309	1.3660	0.0422
F4 + F5 sash sill	0.1040	1.2142	0.0549	0.0667	0.0304	0.4305	0.0131
F6 + F7 sash head	0.1040	1.2142	0.0549	0.0667	0.0304	0.4305	0.0131
F8 + F9 sash jamb	0.1040	1.2142	0.1431	0.1738	0.0304	1.2720	0.0387
F10 + F11 mullion	0.1140	1.3689	0.1573	0.2154	0.0612	1.3190	0.0807
Totals				0.5563	0.6785	Total	0.2202

Solar Factor, g-value:	F_w	0.9
	g_w	0.38

Air Leakage loss:					
Air leakage at 50 Pa per hour & per unit length of opening light (BS 6375-1) - 2DP					
Opening light length	3.7810	m	Total air leakage	0.000	m ³ /h
L_{50}	0.00	m ³ /(m ² ·h)	Heat loss = 0.0165 L_{50}	0.00	W/(m ² ·K)

U_{window}	U_w	1.17	W/(m ² ·K)
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Other parameters needed for calculation, taken from simulations:
 Panel thickness, $d_p = d_g = 0.036$ m
 $\lambda_p = 0.035$ W/(m·K) $R_{se} = 0.04$ m²·K/W $R_{se} = 0.13$ m²·K/W
 $R_p = 1.0286$ m²·K/W $R_{tot} = 1.1986$ m²·K/W $U_p = 0.8343$ W/(m²·K)

BFRC Rating kWh/(m ² ·yr)	Label index	EWER Rating Scale	Window Rating
≥ 0	↔	↔ A ↔	A
-10 to <0		B	
-20 to <-10		C	
-30 to <-20	3	D	
-50 to <-30		E	
-70 to <-50		F	
<-70		G	

BFRC Rating =	
218.6g _{window} - 68.5 x (U_{window} + Effective L_{50}) =	2.92
Climate zone is:	UK
Thermal transmittance, W/(m ² ·K)	U_{window} 1.2
Solar factor	g_{window} 0.38
Window air leakage heat loss, W/(m ² ·K)	L_{factor} 0.00



Simulator Name: **Andy Gibson**

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