

ALUTECH SYSTEMS S.R.O. COMPUTER SIMULATION REPORT

SCOPE OF WORK

W72 TILT AND TURN - NFRC 100/200/500

REPORT NUMBER

L3932.05-116-45 R0

TEST DATE

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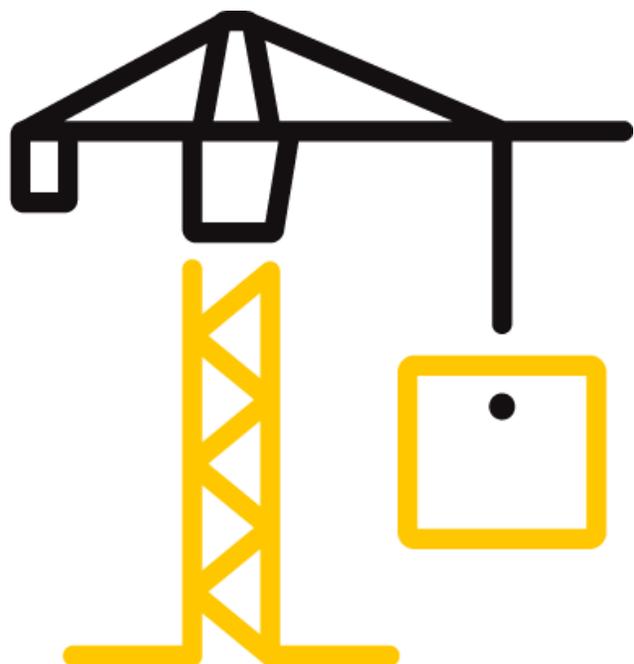
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TEST REPORT FOR ALUTECH SYSTEMS S.R.O.

Report No: L3932.05-116-45 R0

Date: 06/26/23

SECTION 6

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (W72 Tilt and Turn)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft ² -F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
1	SB60 / arg90 / clr (6mm/6mm) 25.4mm											
	0.223	0.500	0.223					ARG90	0.035(#2)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.28 / 0.25 / 0.22				VT(N/<1/>1) 0.49 / 0.43 / 0.38		CR 60		
2	SB67 / arg90 / clr (6mm/6mm) 25.4mm											
	0.223	0.500	0.223					ARG90	0.035(#2)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.21 / 0.19 / 0.17				VT(N/<1/>1) 0.37 / 0.33 / 0.29		CR 60		
3	SB70 / arg90 / clr (6mm/6mm) 25.4mm											
	0.223	0.500	0.223					ARG90	0.018(#2)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.19 / 0.18 / 0.16				VT(N/<1/>1) 0.45 / 0.40 / 0.35		CR 60		
4	SunGuard SN 70/35 HT / arg90 / clr (6mm/6mm) 30mm											
	0.230	0.709	0.230					ARG90	0.025(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.23 / 0.21 / 0.19				VT(N/<1/>1) 0.48 / 0.42 / 0.37		CR 62		
5	SunGuard HP Neutral 60 / arg90 / clr (6mm/6mm) 30mm											
	0.226	0.709	0.230					ARG90	0.068(#2)	CL	TS-D	N,G,S
	U-Factor 0.31			SHGC(N/<1/>1) 0.27 / 0.25 / 0.22				VT(N/<1/>1) 0.39 / 0.34 / 0.30		CR 60		
6	SunGuard SNX 60 HT / arg90 / SunGuard SN 70/35 HT (6mm/6mm) 30mm											
	0.230	0.709	0.230					ARG90	0.026(#2) / 0.025(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.18 / 0.16 / 0.14				VT(N/<1/>1) 0.36 / 0.32 / 0.28		CR 63		
7	Suncool 70/35 / arg90 / clr (6mm/6mm) 32mm											
	0.230	0.787	0.223					ARG90	0.021(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.25 / 0.23 / 0.20				VT(N/<1/>1) 0.48 / 0.43 / 0.38		CR 60		
8	Suncool 70/35 / arg97 / Planibel Top N+T (6mm/6mm) 32mm											
	0.230	0.787	0.230					ARG97	0.021(#2) / 0.04(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.25 / 0.23 / 0.20				VT(N/<1/>1) 0.48 / 0.42 / 0.37		CR 61		
9	Suncool 66/33 / arg90 / clr (6mm/6mm) 32mm											
	0.233	0.787	0.223					ARG90	0.025(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.25 / 0.22 / 0.20				VT(N/<1/>1) 0.46 / 0.41 / 0.36		CR 60		
10	Suncool 66/33 / arg97 / Planibel Top N+T (6mm/6mm) 32mm											
	0.233	0.787	0.230					ARG97	0.025(#2) / 0.04(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.24 / 0.22 / 0.20				VT(N/<1/>1) 0.45 / 0.40 / 0.35		CR 61		

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SECTION 6 (Continued)

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (W72 Tilt and Turn)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft ² -F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
11	Suncool 70/35 / arg90 / Planibel Top N+T (6mm/6mm) 32mm											
	0.230	0.787	0.230					ARG90	0.021(#2) / 0.04(#3)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.25 / 0.23 / 0.20				VT(N/<1/>1) 0.48 / 0.42 / 0.37		CR 61		
12	Suncool 70/35 / arg97 / Optitherm S3 ProT (6mm/6mm) 32mm											
	0.230	0.787	0.229					ARG97	0.021(#2) / 0.037(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.25 / 0.23 / 0.21				VT(N/<1/>1) 0.48 / 0.43 / 0.38		CR 61		
13	Suncool 66/33 / arg90 / Planibel Top N+T (6mm/6mm) 32mm											
	0.233	0.787	0.230					ARG90	0.025(#2) / 0.04(#3)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.24 / 0.22 / 0.20				VT(N/<1/>1) 0.45 / 0.40 / 0.35		CR 61		
14	Suncool 66/33 / arg97 / Optitherm S3 ProT (6mm/6mm) 32mm											
	0.233	0.787	0.229					ARG97	0.025(#2) / 0.037(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.25 / 0.22 / 0.20				VT(N/<1/>1) 0.46 / 0.41 / 0.36		CR 61		
15	Suncool 70/35 / arg90 / Stratophone 66.2 (6mm/12mm) 38mm											
	0.230	0.787	0.491					ARG90	0.021(#2)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.25 / 0.23 / 0.20				VT(N/<1/>1) 0.47 / 0.42 / 0.37		CR 60		
16	Stratobel iplus I-Top 44.2 / arg90 / Stratophone Top N+66.2 (8mm/12mm) 41mm											
	0.333	0.787	0.491					ARG90	0.038(#2) / 0.033(#3)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.31 / 0.28 / 0.25				VT(N/<1/>1) 0.49 / 0.44 / 0.38		CR 61		
17	SunGuard SN 70/35 HT / arg97 / clr / arg97 / SunGuard SN 70/35 HT (6mm/6mm/6mm) 54mm											
	0.230	0.709	0.230	0.709	0.230			ARG97	0.025(#2) / 0.025(#5)	CL	TS-D	N,G,S
	U-Factor 0.20			SHGC(N/<1/>1) 0.19 / 0.17 / 0.16				VT(N/<1/>1) 0.37 / 0.33 / 0.29		CR 67		
18	Suncool 70/35 Pro T / arg90 / clr / arg90 / Optitherm S3 ProT (6mm/6mm/6mm) 54mm											
	0.230	0.709	0.223	0.709	0.229			ARG90	0.021(#2) / 0.037(#5)	CL	TS-D	N,G,S
	U-Factor 0.20			SHGC(N/<1/>1) 0.23 / 0.21 / 0.18				VT(N/<1/>1) 0.43 / 0.38 / 0.34		CR 67		
19	Suncool 70/35 Pro T / arg97 / clr / arg97 / Planibel Top N+T (6mm/6mm/6mm) 58mm											
	0.230	0.787	0.223	0.787	0.230			ARG97	0.021(#2) / 0.04(#5)	CL	TS-D	N,G,S
	U-Factor 0.20			SHGC(N/<1/>1) 0.23 / 0.20 / 0.18				VT(N/<1/>1) 0.43 / 0.38 / 0.33		CR 67		
20	Planibel Top N+T / arg97 / Planibel Top N+T / arg97 / Planibel Top N+T / arg97 / Planibel Top N+T (4mm/4mm/4mm/4mm) 60mm											
	0.152	0.551	0.152	0.630	0.152	0.551	0.152	ARG97	0.04(#2) / 0.04(#4) / 0.04(#6) / 0.04(#7)	CL	TS-D	N,G,S
	U-Factor 0.17			SHGC(N/<1/>1) 0.29 / 0.26 / 0.23				VT(N/<1/>1) 0.43 / 0.38 / 0.33		CR 67		

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SECTION 6 (Continued)

SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (W72 Tilt and Turn)												
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type
	U-Factor (Btu/Hr-Ft2-F)			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)		
21	SN 70/35 HT/ arg90 / Extra Clear (6mm/6mm) 34mm											
	0.230	0.866	0.230					ARG90	0.025(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.23 / 0.21 / 0.19				VT(N/<1/>1) 0.48 / 0.42 / 0.37		CR 55		
22	SN 70/37 HT/ arg90 / Extra Clear (6mm/6mm) 34mm											
	0.230	0.866	0.230					ARG90	0.025(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.23 / 0.21 / 0.19				VT(N/<1/>1) 0.48 / 0.42 / 0.37		CR 55		
23	iplus Energy NT/ arg90 / Extra Clear (6mm/6mm) 34mm											
	0.230	0.866	0.230					ARG90	0.038(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.27 / 0.24 / 0.22				VT(N/<1/>1) 0.51 / 0.45 / 0.39		CR 55		
24	HP Neutral 50/32/ arg90 / Extra Clear (6mm/6mm) 26mm											
	0.230	0.551	0.230					ARG90	0.040(#2)	CL	TS-D	N,G,S
	U-Factor 0.30			SHGC(N/<1/>1) 0.22 / 0.20 / 0.18				VT(N/<1/>1) 0.35 / 0.31 / 0.27		CR 57		
25	Energy Light / arg90 / Extra Clear (6mm/6mm) 26mm											
	0.233	0.551	0.230					ARG90	0.027(#2)	CL	TS-D	N,G,S
	U-Factor 0.29			SHGC(N/<1/>1) 0.30 / 0.27 / 0.24				VT(N/<1/>1) 0.45 / 0.40 / 0.35		CR 58		
26	SN 70/35 HT / arg90 / Extra Clear / arg90/ Extra Clear (6mm/6mm/6mm) 54mm											
	0.230	0.630	0.230	0.787	0.230			ARG90	0.025(#2)	CL	TS-D	N,G,S
	U-Factor 0.24			SHGC(N/<1/>1) 0.21 / 0.19 / 0.17				VT(N/<1/>1) 0.44 / 0.39 / 0.34		CR 67		
27	SN 70/37 HT / arg90 / Extra Clear / arg90/ Extra Clear (6mm/6mm/6mm) 54mm											
	0.230	0.630	0.230	0.787	0.230			ARG90	0.022(#2)	CL	TS-D	N,G,S
	U-Factor 0.24			SHGC(N/<1/>1) 0.23 / 0.21 / 0.18				VT(N/<1/>1) 0.44 / 0.39 / 0.34		CR 67		
28	iplus Energy NT / arg90 / Extra Clear / arg90/ Extra Clear (6mm/6mm/6mm) 54mm											
	0.230	0.630	0.230	0.787	0.230			ARG90	0.038(#2)	CL	TS-D	N,G,S
	U-Factor 0.24			SHGC(N/<1/>1) 0.25 / 0.23 / 0.20				VT(N/<1/>1) 0.46 / 0.41 / 0.36		CR 67		
29	HP Neutral 50/32 / arg90 / Extra Clear / arg90/ Extra Clear (6mm/6mm/6mm) 50mm											
	0.230	0.551	0.230	0.709	0.230			ARG90	0.040(#2)	CL	TS-D	N,G,S
	U-Factor 0.24			SHGC(N/<1/>1) 0.21 / 0.19 / 0.17				VT(N/<1/>1) 0.32 / 0.28 / 0.25		CR 68		
30	Energy Light / arg90 / Extra Clear / arg90/ Extra Clear (6mm/6mm/6mm) 50mm											
	0.233	0.551	0.230	0.709	0.230			ARG90	0.027(#2)	CL	TS-D	N,G,S
	U-Factor 0.24			SHGC(N/<1/>1) 0.28 / 0.25 / 0.22				VT(N/<1/>1) 0.41 / 0.36 / 0.32		CR 68		