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FENESTRATION SIMULATION ENGINEERING ***S***

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NFRC Accredited Computer Modeling & Simulation Laboratory

NFRC THERMAL SIMULATION REPORT

U-Factor (ANSI/NFRC 100-2020), CR (NFRC 500-2017) SHGC and VT (ANSI/NFRC 200-2020)

Fenestration Product: **Aluminum Thermally Broken Storefront System**

Report#: SIM21CW-016

Series: **251 (2“ x 4-1/2” Offset Glaze Double Thermal Strut)**

Submitted To: Dave Olague

Manufacturer: **PRL GLASS & ALUMINUM**

Address: 14760 Don Julian Rd, City of Industry, CA 91746

Phone#: (877) 775-2586

Baseline Product: **[2000 mm (±25mm)] [79"(±1")] X [2000 mm (±25mm)] [79"(±1")]**

Product # 033: CLEAR/AIR/CLEAR_6mm_ A1-D spacer: [U = 0.51 Btu/hr*ft^2*F]

Per ANSI/NFRC 100-2020: Table 4-3 “Two lites with one vertical mullion. Curtain walls shall be simulated and tested with intermediate verticals as jambs and intermediate horizontal as head and sill members. For rating of curtain wall, area weight intermediate members based on centerline dimensions.”

Baseline Simulation Date: 07/13/2021

Expiration Date: Five years from the date of the oldest physical test conducted for the latest certification ratings

Revision Date: n/a

Product Type: Aluminum T.B. Storefront (curtain wall) System

Simulator: Anis Jan

Simulator-in-Charge: Anis Jan

Simulation Method: Approved NFRC software THERM7 and WINDOW7 and NFRC WINDOW/THERM simulation manual

Model/Type: GWCW

Size:	[2000 mm x 2000 mm] / {79 in x 79 in}
Frame Type and Finish:	Aluminum thermally broken / anodized – all members. Thermal break material Urethane-thermal break.
Sash Type and Finish:	None
IG Glass Parameters:	5mm & 6mm glass with 1/2" gap. Low-e coating PPG, Guardian, Pilkington. Low-e coating applied on surf#2. (stated per client)
Glazing Method:	IG unit is held between silicone gasket from both sides.
Gas Fill Method:	Argon 90% & Air 10% fill, two-probe gas fill technique. (stated per client)
Spacers:	A1-D = Aluminum spacer, dual sealed with PIB & hot melt butyl. ZF-S = super spacer (standard EPDM), single sealed with hot melt butyl
Dividers:	None
Grouping:	
Center-of-Glazing:	No
Frame:	No
Spacer:	No
Divider:	No
Miscellaneous:	
SHGC and VT:	Frame Absorptivity is 0.5: ANSI/NFRC 200-2020: Sec 4.5.D

Glazing Matrix

Glz ID	Name	Group	UCOG	Thick. (inch)	ID1	Gap fill (%)	ID2
1	CLEAR / AIR / CLEAR_6mm	L1	0.473	0.972	103	AIR	103
8	BLUEGREEN / AIR / CLEAR_6mm	1	0.473	0.972	9874	AIR	103
7	EVERGREEN / AIR / CLEAR_6mm	1	0.473	0.972	9884	AIR	103
9	SUPERGRAY / AIR / CLEAR_6mm	1	0.473	0.972	9894	AIR	103
11	GRAYLITE II / AIR / CLEAR_6mm	1	0.473	0.972	5057	AIR	103
10	PACIFICA / AIR / CLEAR_6mm	1	0.473	0.972	5087	AIR	103
3	BRONZE / AIR / CLEAR_6mm	1	0.473	0.972	5044	AIR	103
2	AZURIA / AIR / CLEAR_6mm	1	0.473	0.972	5036	AIR	103
4	STARPHIRE / AIR / CLEAR_6mm	1	0.473	0.972	5004	AIR	103
6	SOLEXIA / AIR / CLEAR_6mm	1	0.473	0.972	5020	AIR	103
5	GREY / AIR / CLEAR_6mm	1	0.473	0.972	5052	AIR	103
12	LOW-E / AIR / CLEAR_6mm	L2	0.33	0.972	9924	AIR	103
13	SGSN68 / AIR / CLEAR_6mm	L3	0.292	0.972	3110	AIR	103
17	SNX5123 / AIR / CLEAR_6mm	3	0.285	0.972	26143	AIR	103
18	SGSNR43 / AIR / CLEAR_6mm	3	0.287	0.972	3425	AIR	103
16	SGSN54_Crystal Gray / AIR / CLEAR_6mm	3	0.288	0.972	3116	AIR	103
14	SNX6227 / AIR / CLEAR_6mm	3	0.285	0.972	3413	AIR	103
15	SGSN54 / AIR / CLEAR_6mm	3	0.288	0.972	3114	AIR	103
19	IS20 / AIR / CLEAR_6mm	L4	0.342	0.972	3293	AIR	103
20	SGAG50 / AIR / CLEAR_6mm	L5	0.299	0.972	3126	AIR	103
21	SB60 / AIR / CLEAR_6mm	L6	0.29	0.972	5284	AIR	103
22	SB70 / AIR / CLEAR_6mm	6	0.285	0.972	5439	AIR	103
23	7036 / AIR / CLEAR_5mm	L7	0.292	0.894	3255	AIR	3004
24	SB90 / AIR / CLEAR_5mm	7	0.288	0.894	5446	AIR	5011
25	IS20 / AIR / CLEAR_5mm	L8	0.344	0.894	3292	AIR	3004
26	CLEAR / ARG90% / CLEAR_6mm	L9	0.448	0.972	103	ARG(90)	103
33	BLUEGREEN / ARG90% / CLEAR_6mm	9	0.448	0.972	9874	ARG(90)	103
32	EVERGREEN / ARG90% / CLEAR_6mm	9	0.448	0.972	9884	ARG(90)	103
34	SUPERGRAY / ARG90% / CLEAR_6mm	9	0.448	0.972	9894	ARG(90)	103
36	GRAYLITE II / ARG90% / CLEAR_6mm	9	0.448	0.972	5057	ARG(90)	103
35	PACIFICA / ARG90% / CLEAR_6mm	9	0.448	0.972	5087	ARG(90)	103
28	BRONZE / ARG90% / CLEAR_6mm	9	0.448	0.972	5044	ARG(90)	103
27	AZURIA / ARG90% / CLEAR_6mm	9	0.448	0.972	5036	ARG(90)	103
29	STARPHIRE / ARG90% / CLEAR_6mm	9	0.448	0.972	5004	ARG(90)	103
31	SOLEXIA / ARG90% / CLEAR_6mm	9	0.448	0.972	5020	ARG(90)	103
30	GREY / ARG90% / CLEAR_6mm	9	0.448	0.972	5052	ARG(90)	103
37	LOW-E / ARG90% / CLEAR_6mm	L10	0.29	0.972	9924	ARG(90)	103
38	SGSN68 / ARG90% / CLEAR_6mm	L11	0.246	0.972	3110	ARG(90)	103
42	SNX5123 / ARG90% / CLEAR_6mm	11	0.239	0.972	26143	ARG(90)	103
43	SGSNR43 / ARG90% / CLEAR_6mm	11	0.241	0.972	3425	ARG(90)	103
41	SGSN54_Crystal Gray/ARG90%/ CLEAR_6mm	11	0.241	0.972	3116	ARG(90)	103
39	SNX6227 / ARG90% / CLEAR_6mm	11	0.239	0.972	3413	ARG(90)	103
40	SGSN54 / ARG90% / CLEAR_6mm	11	0.241	0.972	3114	ARG(90)	103
44	IS20 / ARG90% / CLEAR_6mm	L12	0.303	0.972	3293	ARG(90)	103
45	SGAG50 / ARG90% / CLEAR_6mm	L13	0.254	0.972	3126	ARG(90)	103
46	SB60 / ARG90% / CLEAR_6mm	L14	0.244	0.972	5284	ARG(90)	103
47	SB70 / ARG90% / CLEAR_6mm	14	0.238	0.972	5439	ARG(90)	103
48	7036 / ARG90% / CLEAR_5mm	L15	0.246	0.894	3255	ARG(90)	3004
49	SB90 / ARG90% / CLEAR_5mm	15	0.241	0.894	5446	ARG(90)	5011
50	IS20 / ARG90% / CLEAR_5mm	L16	0.305	0.894	3292	ARG(90)	3004

Note: L denotes the group leader per ANSI/NFRC 100-2020 (if applicable)

SHGC 0 and 1 & VT 0 and 1

	No-divider	Divider < 25.4 mm	Divider >= 25.4 mm
SHGC0	0.009056	n/a	n/a
SHGC1	0.913684	n/a	n/a
VT0	0	0	0
VT1	0.904628	n/a	n/a

Total window -- SHGC = SHGC0 + SHGCc * (SHGC1 - SHGC0)
Total window -- VT = VT0 + VTc * (VT1 - VT0)

SHGCc = center of glass SHGC value only
VTc = center of glass VT value only

Series#: 251 (Offset Glazed)
Product: Alum T.B. Storefront System

Total U-Factor, SHGC & VT Values

Report#: SIM21CW-016
Report Date: 07/13/2021

						Sim Lab Code:	SFSE
		Operator Type:	GWCW	***2020 Model Size:***	2000 mm x 2000 mm	***Sim Report#:***	SIM21CW-016
Mfr Name:	PRL Aluminum & Glass	***Frame Type:***	AT	***Residential Size:***		***Sim Rpt date:***	07/13/2021
Series/Model#:	251 Offset glaze	***Sash Type:***	N	***Non Res Size:***		***Sim Rpt revision date:***	
		Thermal Break Type:	U (Urethane)			***Frame Absorptance:***	0.5
						Rating Procedure:	2020

Mfr Prod. Code	Product Num	Pane Thick. 1	Pane Thick. 2	Pane Thick. 3	Gap 1	Gap 2	Emiss 1	Emiss 2	Emiss 3	Emiss 4	Emiss 5	Emiss 6	Spacer Type	Grid	Grid Size	U factor cog	SHGC cog	VT cog	Total U-factor	Total SHGC	Total VT	Total CR
CLEAR / AIR / CLEAR_6mm	001	0.236	0.236		0.500								A1-D	N		0.47	0.704374	0.786104	**0.51**	0.65	0.71	42
AZURIA / AIR / CLEAR_6mm	001-0001	0.236	0.236		0.500								A1-D	N		0.47	0.394689	0.607054		0.37	0.55	
BRONZE / AIR / CLEAR_6mm	001-0002	0.236	0.236		0.500								A1-D	N		0.47	0.511888	0.472127		0.47	0.43	
STARPHIRE / AIR / CLEAR_6mm	001-0003	0.236	0.236		0.500								A1-D	N		0.47	0.785137	0.810418		0.72	0.73	
EVERGREEN / AIR / CLEAR_6mm	001-0004	0.236	0.236		0.500								A1-D	N		0.47	0.401745	0.583425		0.37	0.53	
GRAYLITE II / AIR / CLEAR_6mm	001-0005	0.236	0.236		0.500								A1-D	N		0.47	0.221075	0.079696		0.21	0.07	
GREY / AIR / CLEAR_6mm	001-0006	0.236	0.236		0.500								A1-D	N		0.47	0.458303	0.394763		0.42	0.36	
SUPERGRAY / AIR / CLEAR_6mm	001-0007	0.236	0.236		0.500								A1-D	N		0.47	0.217331	0.075579		0.21	0.07	
BLUEGREEN / AIR / CLEAR_6mm	001-0008	0.236	0.236		0.500								A1-D	N		0.47	0.505486	0.669910		0.47	0.61	
SOLEXIA / AIR / CLEAR_6mm	001-0009	0.236	0.236		0.500								A1-D	N		0.47	0.498504	0.686580		0.46	0.62	
PACIFICA / AIR / CLEAR_6mm	001-0010	0.236	0.236		0.500								A1-D	N		0.47	0.359150	0.377484		0.33	0.34	
LOW-E / AIR / CLEAR_6mm	002	0.236	0.236		0.500			0.157					A1-D	N		0.33	0.620892	0.729866	**0.39**	0.57	0.66	49
SGSN68 / AIR / CLEAR_6mm	003	0.236	0.236		0.500			0.039					A1-D	N		0.29	0.376327	0.671688	**0.36**	0.35	0.61	51
SNX6227 / AIR / CLEAR_6mm	003-0001	0.236	0.236		0.500			0.020					A1-D	N		0.29	0.267319	0.610072		0.25	0.55	
SGSN54 / AIR / CLEAR_6mm	003-0002	0.236	0.236		0.500			0.027					A1-D	N		0.29	0.284482	0.537634		0.27	0.49	
SGSN54_Crystal Gray / AIR / CLEAR_6mm	003-0003	0.236	0.236		0.500			0.027					A1-D	N		0.29	0.224151	0.347229		0.21	0.31	
SNX5123 / AIR / CLEAR_6mm	003-0004	0.236	0.236		0.500			0.021					A1-D	N		0.29	0.233336	0.503727		0.22	0.46	
SGSNR43 / AIR / CLEAR_6mm	003-0005	0.236	0.236		0.500			0.025					A1-D	N		0.29	0.227526	0.425280		0.21	0.38	
IS20 / AIR / CLEAR_6mm	004	0.236	0.236		0.500			0.198					A1-D	N		0.34	0.671448	0.770700	**0.40**	0.62	0.70	48
SGAG50 / AIR / CLEAR_6mm	005	0.236	0.236		0.500			0.059					A1-D	N		0.30	0.338030	0.495167	**0.37**	0.31	0.45	51
SB60 / AIR / CLEAR_6mm	006	0.236	0.236		0.500			0.035					A1-D	N		0.29	0.391577	0.702065	**0.36**	0.36	0.64	51
SB70 / AIR / CLEAR_6mm	006-0001	0.236	0.236		0.500			0.018					A1-D	N		0.28	0.274964	0.641746		0.26	0.58	
CLEAR / ARG90% / CLEAR_6mm	007	0.236	0.236		0.500								A1-D	N		0.45	0.705031	0.786104	**0.49**	0.65	0.71	44
AZURIA / ARG90% / CLEAR_6mm	007-0001	0.236	0.236		0.500								A1-D	N		0.45	0.390928	0.607054		0.36	0.55	
BRONZE / ARG90% / CLEAR_6mm	007-0002	0.236	0.236		0.500								A1-D	N		0.45	0.509968	0.472127		0.47	0.43	
STARPHIRE / ARG90% / CLEAR_6mm	007-0003	0.236	0.236		0.500								A1-D	N		0.45	0.787149	0.810418		0.72	0.73	
EVERGREEN / ARG90% / CLEAR_6mm	007-0004	0.236	0.236		0.500								A1-D	N		0.45	0.398126	0.583425		0.37	0.53	
GRAYLITE II / ARG90% / CLEAR_6mm	007-0005	0.236	0.236		0.500								A1-D	N		0.45	0.215607	0.079696		0.20	0.07	
GREY / ARG90% / CLEAR_6mm	007-0006	0.236	0.236		0.500								A1-D	N		0.45	0.455667	0.394763		0.42	0.36	
SUPERGRAY / ARG90% / CLEAR_6mm	007-0007	0.236	0.236		0.500								A1-D	N		0.45	0.211783	0.075579		0.20	0.07	
BLUEGREEN / ARG90% / CLEAR_6mm	007-0008	0.236	0.236		0.500								A1-D	N		0.45	0.503204	0.669910		0.46	0.61	
SOLEXIA / ARG90% / CLEAR_6mm	007-0009	0.236	0.236		0.500								A1-D	N		0.45	0.496120	0.686580		0.46	0.62	
PACIFICA / ARG90% / CLEAR_6mm	007-0010	0.236	0.236		0.500								A1-D	N		0.45	0.355113	0.377484		0.33	0.34	
LOW-E / ARG90% / CLEAR_6mm	008	0.236	0.236		0.500			0.157					A1-D	N		0.29	0.620571	0.729866	**0.36**	0.57	0.66	51

Series#: 251 (Offset Glazed)
Product: Alum T.B. Storefront System

Total U-Factor, SHGC & VT Values

Report#: SIM21CW-016
Report Date: 07/13/2021

Mfr Prod. Code	Product Num	Pane Thick. 1	Pane Thick. 2	Pane Thick. 3	Gap 1	Gap 2	Emiss 1	Emiss 2	Emiss 3	Emiss 4	Emiss 5	Emiss 6	Spacer Type	Grid	Grid Size	U factor cog	SHGC cog	VT cog	Total U-factor	Total SHGC	Total VT	Total CR
SGSN68 / ARG90% / CLEAR_6mm	009	0.236	0.236		0.500			0.039					A1-D	N		0.25	0.372208	0.671688	**0.32**	0.35	0.61	53
SNX6227 / ARG90% / CLEAR_6mm	009-0001	0.236	0.236		0.500			0.020					A1-D	N		0.24	0.261680	0.610072		0.25	0.55	
SGSN54 / ARG90% / CLEAR_6mm	009-0002	0.236	0.236		0.500			0.027					A1-D	N		0.24	0.278427	0.537634		0.26	0.49	
SGSN54_Crystal Gray / ARG90% / CLEAR_6mm	009-0003	0.236	0.236		0.500			0.027					A1-D	N		0.24	0.214503	0.347229		0.20	0.31	
SNX5123 / ARG90% / CLEAR_6mm	009-0004	0.236	0.236		0.500			0.021					A1-D	N		0.24	0.226053	0.503727		0.21	0.46	
SGSNR43 / ARG90% / CLEAR_6mm	009-0005	0.236	0.236		0.500			0.025					A1-D	N		0.24	0.221685	0.425280		0.21	0.38	
IS20 / ARG90% / CLEAR_6mm	010	0.236	0.236		0.500			0.198					A1-D	N		0.30	0.672223	0.770700	**0.37**	0.62	0.70	51
SGAG50 / ARG90% / CLEAR_6mm	011	0.236	0.236		0.500			0.059					A1-D	N		0.25	0.333877	0.495167	**0.33**	0.31	0.45	53
SB60 / ARG90% / CLEAR_6mm	012	0.236	0.236		0.500			0.035					A1-D	N		0.24	0.387080	0.702065	**0.32**	0.36	0.64	53
SB70 / ARG90% / CLEAR_6mm	012-0001	0.236	0.236		0.500			0.018					A1-D	N		0.24	0.269469	0.641746		0.25	0.58	
7036 / AIR / CLEAR_5mm	013	0.197	0.197		0.500			0.036					A1-D	N		0.29	0.385010	0.703283	**0.36**	0.36	0.64	51
SB90 / AIR / CLEAR_5mm	013-0001	0.197	0.197		0.500			0.023					A1-D	N		0.29	0.232916	0.516238		0.22	0.47	
IS20 / AIR / CLEAR_5mm	014	0.197	0.197		0.500			0.198					A1-D	N		0.34	0.700914	0.798637	**0.40**	0.64	0.72	49
7036 / ARG90% / CLEAR_5mm	015	0.197	0.197		0.500			0.036					A1-D	N		0.25	0.380370	0.703283	**0.32**	0.35	0.64	54
SB90 / ARG90% / CLEAR_5mm	015-0001	0.197	0.197		0.500			0.023					A1-D	N		0.24	0.226654	0.516238		0.21	0.47	
IS20 / ARG90% / CLEAR_5mm	016	0.197	0.197		0.500			0.198					A1-D	N		0.30	0.699010	0.798637	**0.37**	0.64	0.72	51
CLEAR / AIR / CLEAR_6mm	017	0.236	0.236		0.500								ZF-S	N		0.47	0.704374	0.786104	**0.49**	0.65	0.71	46
AZURIA / AIR / CLEAR_6mm	017-0001	0.236	0.236		0.500								ZF-S	N		0.47	0.394689	0.607054		0.37	0.55	
BRONZE / AIR / CLEAR_6mm	017-0002	0.236	0.236		0.500								ZF-S	N		0.47	0.511888	0.472127		0.47	0.43	
STARPHIRE / AIR / CLEAR_6mm	017-0003	0.236	0.236		0.500								ZF-S	N		0.47	0.785137	0.810418		0.72	0.73	
EVERGREEN / AIR / CLEAR_6mm	017-0004	0.236	0.236		0.500								ZF-S	N		0.47	0.401745	0.583425		0.37	0.53	
GRAYLITE II / AIR / CLEAR_6mm	017-0005	0.236	0.236		0.500								ZF-S	N		0.47	0.221075	0.079696		0.21	0.07	
GREY / AIR / CLEAR_6mm	017-0006	0.236	0.236		0.500								ZF-S	N		0.47	0.458303	0.394763		0.42	0.36	
SUPERGRAY / AIR / CLEAR_6mm	017-0007	0.236	0.236		0.500								ZF-S	N		0.47	0.217331	0.075579		0.21	0.07	
BLUEGREEN / AIR / CLEAR_6mm	017-0008	0.236	0.236		0.500								ZF-S	N		0.47	0.505486	0.669910		0.47	0.61	
SOLEXIA / AIR / CLEAR_6mm	017-0009	0.236	0.236		0.500								ZF-S	N		0.47	0.498504	0.686580		0.46	0.62	
PACIFICA / AIR / CLEAR_6mm	017-0010	0.236	0.236		0.500								ZF-S	N		0.47	0.359150	0.377484		0.33	0.34	
LOW-E / AIR / CLEAR_6mm	018	0.236	0.236		0.500			0.157					ZF-S	N		0.33	0.620892	0.729866	**0.37**	0.57	0.66	56
SGSN68 / AIR / CLEAR_6mm	019	0.236	0.236		0.500			0.039					ZF-S	N		0.29	0.376327	0.671688	**0.33**	0.35	0.61	58
SNX6227 / AIR / CLEAR_6mm	019-0001	0.236	0.236		0.500			0.020					ZF-S	N		0.29	0.267319	0.610072		0.25	0.55	
SGSN54 / AIR / CLEAR_6mm	019-0002	0.236	0.236		0.500			0.027					ZF-S	N		0.29	0.284482	0.537634		0.27	0.49	
SGSN54_Crystal Gray / AIR / CLEAR_6mm	019-0003	0.236	0.236		0.500			0.027					ZF-S	N		0.29	0.224151	0.347229		0.21	0.31	
SNX5123 / AIR / CLEAR_6mm	019-0004	0.236	0.236		0.500			0.021					ZF-S	N		0.29	0.233336	0.503727		0.22	0.46	
SGSNR43 / AIR / CLEAR_6mm	019-0005	0.236	0.236		0.500			0.025					ZF-S	N		0.29	0.227526	0.425280		0.21	0.38	
IS20 / AIR / CLEAR_6mm	020	0.236	0.236		0.500			0.198					ZF-S	N		0.34	0.671448	0.770700	**0.38**	0.62	0.70	55
SGAG50 / AIR / CLEAR_6mm	021	0.236	0.236		0.500			0.059					ZF-S	N		0.30	0.338030	0.495167	**0.34**	0.31	0.45	58
SB60 / AIR / CLEAR_6mm	022	0.236	0.236		0.500			0.035					ZF-S	N		0.29	0.391577	0.702065	**0.33**	0.36	0.64	58

Series#: 251 (Offset Glazed)
Product: Alum T.B. Storefront System

Total U-Factor, SHGC & VT Values

Report#: SIM21CW-016
Report Date: 07/13/2021

Mfr Prod. Code	Product Num	Pane Thick. 1	Pane Thick. 2	Pane Thick. 3	Gap 1	Gap 2	Emiss 1	Emiss 2	Emiss 3	Emiss 4	Emiss 5	Emiss 6	Spacer Type	Grid	Grid Size	U factor cog	SHGC cog	VT cog	Total U-factor	Total SHGC	Total VT	Total CR
SB70 / AIR / CLEAR_6mm	022-0001	0.236	0.236		0.500			0.018					ZF-S	N		0.28	0.274964	0.641746		0.26	0.58	
CLEAR / ARG90% / CLEAR_6mm	023	0.236	0.236		0.500								ZF-S	N		0.45	0.705031	0.786104	**0.47**	0.65	0.71	48
AZURIA / ARG90% / CLEAR_6mm	023-0001	0.236	0.236		0.500								ZF-S	N		0.45	0.390928	0.607054		0.36	0.55	
BRONZE / ARG90% / CLEAR_6mm	023-0002	0.236	0.236		0.500								ZF-S	N		0.45	0.509968	0.472127		0.47	0.43	
STARPHIRE / ARG90% / CLEAR_6mm	023-0003	0.236	0.236		0.500								ZF-S	N		0.45	0.787149	0.810418		0.72	0.73	
EVERGREEN / ARG90% / CLEAR_6mm	023-0004	0.236	0.236		0.500								ZF-S	N		0.45	0.398126	0.583425		0.37	0.53	
GRAYLITE II / ARG90% / CLEAR_6mm	023-0005	0.236	0.236		0.500								ZF-S	N		0.45	0.215607	0.079696		0.20	0.07	
GREY / ARG90% / CLEAR_6mm	023-0006	0.236	0.236		0.500								ZF-S	N		0.45	0.455667	0.394763		0.42	0.36	
SUPERGRAY / ARG90% / CLEAR_6mm	023-0007	0.236	0.236		0.500								ZF-S	N		0.45	0.211783	0.075579		0.20	0.07	
BLUEGREEN / ARG90% / CLEAR_6mm	023-0008	0.236	0.236		0.500								ZF-S	N		0.45	0.503204	0.669910		0.46	0.61	
SOLEXIA / ARG90% / CLEAR_6mm	023-0009	0.236	0.236		0.500								ZF-S	N		0.45	0.496120	0.686580		0.46	0.62	
PACIFICA / ARG90% / CLEAR_6mm	023-0010	0.236	0.236		0.500								ZF-S	N		0.45	0.355113	0.377484		0.33	0.34	
LOW-E / ARG90% / CLEAR_6mm	024	0.236	0.236		0.500			0.157					ZF-S	N		0.29	0.620571	0.729866	**0.33**	0.57	0.66	59
SGSN68 / ARG90% / CLEAR_6mm	025	0.236	0.236		0.500			0.039					ZF-S	N		0.25	0.372208	0.671688	**0.29**	0.35	0.61	62
SNX6227 / ARG90% / CLEAR_6mm	025-0001	0.236	0.236		0.500			0.020					ZF-S	N		0.24	0.261680	0.610072		0.25	0.55	
SGSN54 / ARG90% / CLEAR_6mm	025-0002	0.236	0.236		0.500			0.027					ZF-S	N		0.24	0.278427	0.537634		0.26	0.49	
SGSN54_Crystal Gray / ARG90% / CLEAR_6mm	025-0003	0.236	0.236		0.500			0.027					ZF-S	N		0.24	0.214503	0.347229		0.20	0.31	
SNX5123 / ARG90% / CLEAR_6mm	025-0004	0.236	0.236		0.500			0.021					ZF-S	N		0.24	0.226053	0.503727		0.21	0.46	
SGSNR43 / ARG90% / CLEAR_6mm	025-0005	0.236	0.236		0.500			0.025					ZF-S	N		0.24	0.221685	0.425280		0.21	0.38	
IS20 / ARG90% / CLEAR_6mm	026	0.236	0.236		0.500			0.198					ZF-S	N		0.30	0.672223	0.770700	**0.34**	0.62	0.70	58
SGAG50 / ARG90% / CLEAR_6mm	027	0.236	0.236		0.500			0.059					ZF-S	N		0.25	0.333877	0.495167	**0.30**	0.31	0.45	61
SB60 / ARG90% / CLEAR_6mm	028	0.236	0.236		0.500			0.035					ZF-S	N		0.24	0.387080	0.702065	**0.29**	0.36	0.64	62
SB70 / ARG90% / CLEAR_6mm	028-0001	0.236	0.236		0.500			0.018					ZF-S	N		0.24	0.269469	0.641746		0.25	0.58	
7036 / AIR / CLEAR_5mm	029	0.197	0.197		0.500			0.036					ZF-S	N		0.29	0.385010	0.703283	**0.33**	0.36	0.64	58
SB90 / AIR / CLEAR_5mm	029-0001	0.197	0.197		0.500			0.023					ZF-S	N		0.29	0.232916	0.516238		0.22	0.47	
IS20 / AIR / CLEAR_5mm	030	0.197	0.197		0.500			0.198					ZF-S	N		0.34	0.700914	0.798637	**0.38**	0.64	0.72	55
7036 / ARG90% / CLEAR_5mm	031	0.197	0.197		0.500			0.036					ZF-S	N		0.25	0.380370	0.703283	**0.29**	0.35	0.64	62
SB90 / ARG90% / CLEAR_5mm	031-0001	0.197	0.197		0.500			0.023					ZF-S	N		0.24	0.226654	0.516238		0.21	0.47	
IS20 / ARG90% / CLEAR_5mm	032	0.197	0.197		0.500			0.198					ZF-S	N		0.30	0.699010	0.798637	**0.34**	0.64	0.72	58
CLEAR / AIR / CLEAR_6mm -test product **	033	0.236	0.236		0.500								A1-D	N		0.47	0.704374	0.786104	**0.51**	0.65	0.71	42

Note:
Per ANSI/NFRC 100-2020, Table 4-3, footnote #3, (For rating of curtain walls and storefronts, area weight intermediate members based on centerline dimensions) using aluminum spacer for test (validation) sample.

Product# 033: Per ANSI/NFRC 100-2020, sec. 5.6.4.1: “The test specimen shall be constructed in such a manner as to be identical to the individual product simulated and have outside dimensions measuring 2000 mm x 2000 mm (79 in x 79 in), having one vertical mullion and two glazed lites. The glazing system configuration for the validation testing shall be nominal 25 mm (1 in) outside dimension insulating glass utilizing two lites of 6 mm (1/4 in) clear (uncoated glass), a typical dual-sealed aluminum spacer system, and air-filled.
**** Please contact your physical test (validation test) laboratory for exact sample preparation for this product.**

SUMMARY AND ASSUMPTIONS:

1. For glass information, refer to pg# 2 (glass Matrix) this report.

2. This thermally broken aluminum (anodized), offset glazed double thermal strut storefront (curtain wall) system consists of 5 cross-sections.
Frame weather-strip: silicone gasket full perimeter, facing exterior & interior.
Sash weather-strip: None
Thermal break material is Urethane- thermal break per NFRC 101-2020.

3. Manufacturer offers this product with NO dividers.

4. The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration opening.

5. As per ANSI/NFRC 200-2020: For SHGC &VT, actual glazing infill pane thicknesses in Table 4-1 for the range of glazing infill pane thicknesses were used.

6. For SHGC ratings, the values are calculated for the best glazing option model with the highest frame and edge U-factor frame per ANSI/NFRC 200-2020. The values calculated from that one case are then used to calculate the SHGC & VT for any other glazing options using Equations 4-1 and 4-2 in ANSI/NFRC 200-2020.

7. Per ANSI/NFRC 100-2020, sec. 5.6.4.1: “The test specimen shall be constructed in such a manner as to be identical to the individual product simulated and have outside dimensions measuring 2000 mm x 2000 mm (79 in x 79 in), having one vertical mullion and two glazed lites. The glazing system configuration for the validation testing shall be nominal 25 mm (1 in) outside dimension insulating glass utilizing two lites of 6 mm (1/4 in) clear (uncoated glass), a typical dual-sealed aluminum spacer system, and air-filled.

8. Drawings will be sent as a separate package and that the product simulated confirms to drawings supplied by manufacturer.

WINDOW SIMULATION REPORT:

The fenestration products documented in this report were simulated in accordance with the ANSI/NFRC 100-2020: Procedure for Determining Fenestration Product Thermal Performance, ANSI/NFRC 200-2020 (SHGC/VT) & NFRC 500-2017. The fenestration products were simulated using computer programs Therm 7.4.4, Window 7.4.14 & Spectral Data # 80.0 as specified in ANSI/NFRC 100-2020 and ANSI/NFRC 200-2020 (SHGC/VT). The WINDOW program models the one-dimensional heat flow through the center-of-glass portion of the window. The Therm program models the two-dimensional heat flow through the frame, edge-of-glass, divider, and divider-edge portions of the fenestration product. The input data for both programs is based on manufacturer's specifications. Defaults for material thermal and optical properties are given in the computer programs. When values other than defaults were used, they are documented.

DISCLAIMER:

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It is the policy for this laboratory to verify as much information about the product being tested and simulated. However, not all information provided to the laboratory can be verified, such as physical properties of low-e coating, heat mirror, gas fills spacer, and others. Therefore, all information provided to the laboratory is the manufacturer's responsibility as to its accuracy.

It is the policy of this laboratory to prepare a report and submit it to the manufacturer for his approval. Upon notification in writing from the manufacturer that he approves of the report, (in approving report, manufacturer takes responsibility of all information provided to this laboratory) the report is sent to the certification agency. The data shall be kept for a period of five years after which they may be destroyed.

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C. This report relates only to the fenestration products simulated.
D. Rounding is per NFRC 601, NFRC Unit and Measurement Policy.
E. Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certificate of Authorization (CA) by an NFRC Accredited Inspection Agency (IA) are to be used for labeling purposes.
F. Name and signature of the individual performing the simulations and accepting the responsibility for the technical accuracy of this simulation report.

Anis Jan

Anis Jan
Simulator-in-responsible-charge