



ETC Laboratories

ETC Laboratories
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Simulation Report (Revised)

Rendered To:

Showcase Custom Vinyl Windows
4902 Gulf Freeway
Houston, TX 77023

Productline Series/Model

200 Horizontal Sliding Window

Report Number

ETC-07-738-19078.2

Report Number: ETC-07-738-19078.2
 Job Number: ETC-09-738--22740-3
 Simulation Date: June 13, 2007
 Report Date: June 13, 2007
 Expiration Date: June 13, 2011
 Revision Date: June 5, 2009

NFRC 100-2004, 200-2004, 500-2004 Simulation Report

Rendered To:

Showcase Custom Vinyl Windows
 4902 Gulf Freeway
 Houston, TX 77023

Product Series/Model	Operating Type	Model Size (mm x mm)
200 Horizontal Sliding Window	Horizontal Slider, XO	1500 x 1200

Validation Test Unit Description*

Item	Unit	Value
Frame type	-	VI
Sash type	-	VY
Overall width	in.	60.00
Overall height	in.	36.00
Overall IG nominal thickness	-	0.750
Number of glazing layers	-	2
Glass type	-	Float
Glass 1 thickness	in.	0.118
Glass 2 thickness	in.	0.118
Glass 3 thickness	in.	-
Spacer type	-	A8-D
Gap 1 thickness	in.	0.514
Gap 2 thickness	in.	-
Low-e emissivity	-	0.036
Low-e surface	-	2
IG gap fill	-	AIR
Percent gap fill	-	-

* Aluminum reinforcement in fixed meeting stile.

Validation Test Unit U-factor

Item	Unit	Value
Simulated U-Factor	Btu/hr-ft ² -°F	0.34

Notes: The validation unit was submitted by Showcase Custom Vinyl Windows.

NFRC 100-2004 (U-factor), 200-2004 (SHGC and VT), and 500-2004 (CR-value) Productline Matrix

Manufacturer Name: Showcase Custom Vinyl Windows
 Product Series / Model: 200 Horizontal Sliding Window
 Operator Type: Horizontal Slider, XO
 Frame Type: VI
 Sash Type: VY

Job Number: ETC-09-738--22740-3
 Sim Lab Code: SETC
 Model Size (mm x mm) 1500 x 1200
 Thermal Break Type:

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
001	00	0.750	0.098	0.098		0.553		AIR				A8-D	0.036							0.30	0.37	0.70	N		0.34	54	0.30	0.56	RLE/Clr
	01	0.750	0.098	0.098		0.553		AIR				A8-D	0.036							0.30	0.37	0.70	G	< 1"	0.34	54	0.27	0.50	
	02	0.750	0.098	0.098		0.553		AIR				A8-D	0.036							0.30	0.37	0.70	S	>1"	0.34	54	0.24	0.44	
	03	0.750	0.118	0.118		0.514		AIR				A8-D	0.036							0.30	0.37	0.70	N		0.34	54	0.29	0.55	RLE/Clr
	04	0.750	0.118	0.118		0.514		AIR				A8-D	0.036							0.30	0.37	0.70	G	< 1"	0.34	54	0.27	0.49	
	05	0.750	0.118	0.118		0.514		AIR				A8-D	0.036							0.30	0.37	0.70	S	>1"	0.34	54	0.24	0.44	
002	00	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.036							0.25	0.36	0.70	N		0.30	57	0.29	0.56	RLE/Clr, Arg
	01	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.036							0.25	0.36	0.70	G	< 1"	0.30	57	0.26	0.50	
	02	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.036							0.25	0.36	0.70	S	>1"	0.30	57	0.24	0.44	
	03	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.036							0.25	0.36	0.70	N		0.30	57	0.29	0.55	RLE/Clr, Arg
	04	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.036							0.25	0.36	0.70	G	< 1"	0.30	57	0.26	0.49	
	05	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.036							0.25	0.36	0.70	S	>1"	0.30	57	0.24	0.44	
003	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.036							0.33	0.37	0.68	N		0.37	50	0.29	0.54	RLE/Clr
	01	0.750	0.197	0.197		0.356		AIR				A8-D	0.036							0.33	0.37	0.68	S	>1"	0.37	50	0.24	0.43	
004	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.036							0.33	0.37	0.68	G	< 1"	0.38	50	0.27	0.48	

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Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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005	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.036							0.27	0.36	0.68	N		0.32	54	0.29	0.54	RLE/Clr, Arg
	01	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.036							0.27	0.36	0.68	S	>1"	0.32	54	0.24	0.43	
006	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.036							0.27	0.36	0.68	G	< 1"	0.33	54	0.26	0.48	
007	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.35	0.36	0.68	N		0.37	50	0.29	0.54	RLE/060-Lami
	01	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.35	0.36	0.68	S	>1"	0.37	50	0.24	0.43	
	02	0.750	0.118	0.266		0.366		AIR				A8-D	0.036							0.32	0.36	0.68	N		0.37	50	0.29	0.54	RLE/030-Lami
	03	0.750	0.118	0.266		0.366		AIR				A8-D	0.036							0.32	0.36	0.68	S	>1"	0.37	50	0.24	0.43	
	04	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.34	0.36	0.67	N		0.37	50	0.29	0.53	RLE/090-Lami
	05	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.34	0.36	0.67	S	>1"	0.37	50	0.24	0.42	
008	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.35	0.36	0.68	G	< 1"	0.39	50	0.26	0.48	
	01	0.750	0.118	0.266		0.366		AIR				A8-D	0.036							0.32	0.36	0.68	G	< 1"	0.39	50	0.26	0.48	
	02	0.750	0.118	0.315		0.317		AIR				A8-D	0.036							0.34	0.36	0.67	G	< 1"	0.39	50	0.26	0.48	
009	00	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.68	N		0.33	54	0.29	0.54	RLE/060-Lami, Arg
	01	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.68	S	>1"	0.33	54	0.24	0.43	
	02	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.036							0.26	0.36	0.68	N		0.33	54	0.29	0.54	RLE/030-Lami, Arg
	03	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.036							0.26	0.36	0.68	S	>1"	0.33	54	0.24	0.43	
	04	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.67	N		0.33	54	0.29	0.53	RLE/090-Lami, Arg
	05	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.67	S	>1"	0.33	54	0.24	0.42	
010	00	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.68	G	< 1"	0.34	54	0.26	0.48	
	01	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.036							0.26	0.36	0.68	G	< 1"	0.34	54	0.26	0.48	

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	02	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.036							0.28	0.36	0.67	G	< 1"	0.34	54	0.26	0.48	
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011	00	0.750	0.098	0.098		0.553		AIR				A8-D	0.042							0.30	0.42	0.73	N		0.34	54	0.32	0.55	EE272/Clr
	01	0.750	0.098	0.098		0.553		AIR				A8-D	0.042							0.30	0.42	0.73	G	< 1"	0.34	54	0.29	0.49	
	04	0.750	0.098	0.098		0.553		AIR				A8-D	0.042							0.30	0.42	0.73	S	>1"	0.34	54	0.26	0.44	
	05	0.750	0.098	0.098		0.553		AIR				A8-D	0.022							0.29	0.28	0.65	N		0.34	54	0.21	0.50	EE366/Clr
	06	0.750	0.098	0.098		0.553		AIR				A8-D	0.022							0.29	0.28	0.65	G	< 1"	0.34	54	0.19	0.44	
	09	0.750	0.098	0.098		0.553		AIR				A8-D	0.022							0.29	0.28	0.65	S	>1"	0.34	54	0.18	0.39	
	10	0.750	0.118	0.118		0.514		AIR				A8-D	0.042							0.30	0.42	0.72	N		0.34	54	0.32	0.55	EE272/Clr
	11	0.750	0.118	0.118		0.514		AIR				A8-D	0.042							0.30	0.42	0.72	G	< 1"	0.34	54	0.29	0.49	
	14	0.750	0.118	0.118		0.514		AIR				A8-D	0.042							0.30	0.42	0.72	S	>1"	0.34	54	0.26	0.43	
	15	0.750	0.118	0.118		0.514		AIR				A8-D	0.022							0.29	0.28	0.65	N		0.34	54	0.21	0.49	EE366/Clr
	16	0.750	0.118	0.118		0.514		AIR				A8-D	0.022							0.29	0.28	0.65	G	< 1"	0.34	54	0.19	0.44	
	19	0.750	0.118	0.118		0.514		AIR				A8-D	0.022							0.29	0.28	0.65	S	>1"	0.34	54	0.18	0.39	
012	00	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042							0.25	0.42	0.73	N		0.31	57	0.32	0.55	EE272/Clr, Arg
	01	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042							0.25	0.42	0.73	G	< 1"	0.31	57	0.29	0.49	
	04	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042							0.25	0.42	0.73	S	>1"	0.31	57	0.26	0.44	
	05	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022							0.25	0.27	0.65	N		0.31	57	0.21	0.50	EE366/Clr, Arg
	06	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022							0.25	0.27	0.65	G	< 1"	0.31	57	0.19	0.44	
	09	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022							0.25	0.27	0.65	S	>1"	0.31	57	0.17	0.39	
	10	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042							0.25	0.41	0.72	N		0.31	57	0.32	0.55	EE272/Clr, Arg

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Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	11	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042							0.25	0.41	0.72	G	< 1"	0.31	57	0.29	0.49	
	14	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042							0.25	0.41	0.72	S	>1"	0.31	57	0.26	0.43	
	15	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022							0.24	0.27	0.65	N		0.31	57	0.21	0.49	EE366/Clr, Arg
	16	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022							0.24	0.27	0.65	G	< 1"	0.31	57	0.19	0.44	
	19	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022							0.24	0.27	0.65	S	>1"	0.31	57	0.17	0.39	
013	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.042							0.33	0.41	0.71	N		0.37	50	0.32	0.54	EE272/Clr
	01	0.750	0.197	0.197		0.356		AIR				A8-D	0.042							0.33	0.41	0.71	S	>1"	0.37	50	0.26	0.42	
	02	0.750	0.197	0.197		0.356		AIR				A8-D	0.022							0.32	0.28	0.64	N		0.37	50	0.22	0.48	EE366/Clr
	03	0.750	0.197	0.197		0.356		AIR				A8-D	0.022							0.32	0.28	0.64	S	>1"	0.37	50	0.18	0.38	
014	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.042							0.33	0.41	0.71	G	< 1"	0.38	50	0.29	0.48	
	01	0.750	0.197	0.197		0.356		AIR				A8-D	0.022							0.32	0.28	0.64	G	< 1"	0.38	50	0.20	0.43	
015	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.042							0.27	0.41	0.71	N		0.32	54	0.32	0.54	EE272/Clr, Arg
	01	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.042							0.27	0.41	0.71	S	>1"	0.32	54	0.25	0.42	
	02	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.022							0.26	0.28	0.64	N		0.32	54	0.22	0.48	EE366/Clr, Arg
	03	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.022							0.26	0.28	0.64	S	>1"	0.32	54	0.18	0.38	
016	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.042							0.27	0.41	0.71	G	< 1"	0.33	54	0.28	0.48	
	01	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.022							0.26	0.28	0.64	G	< 1"	0.33	54	0.20	0.43	
017	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	N		0.38	50	0.32	0.53	EE272/060-Lami
	01	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	S	>1"	0.38	50	0.26	0.42	
	02	0.750	0.118	0.266		0.366		AIR				A8-D	0.042							0.32	0.41	0.70	N		0.38	50	0.32	0.54	EE272/030-Lami

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Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	03	0.750	0.118	0.266		0.366		AIR				A8-D	0.042							0.32	0.41	0.70	S	>1"	0.38	50	0.26	0.42	
	04	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	N		0.38	50	0.32	0.53	EE272/090-Lami
	05	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	S	>1"	0.38	50	0.26	0.42	
	06	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	N		0.38	50	0.22	0.48	EE366/060-Lami
	07	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	S	>1"	0.38	50	0.18	0.38	
	08	0.750	0.118	0.266		0.366		AIR				A8-D	0.022							0.32	0.28	0.63	N		0.38	50	0.22	0.48	EE366/030-Lami
	09	0.750	0.118	0.266		0.366		AIR				A8-D	0.022							0.32	0.28	0.63	S	>1"	0.38	50	0.18	0.38	
	10	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	N		0.38	50	0.22	0.48	EE366/090-Lami
	11	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	S	>1"	0.38	50	0.18	0.38	
018	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	G	< 1"	0.40	50	0.29	0.48	
	01	0.750	0.118	0.266		0.366		AIR				A8-D	0.042							0.32	0.41	0.70	G	< 1"	0.40	50	0.29	0.48	
	02	0.750	0.118	0.315		0.317		AIR				A8-D	0.042							0.35	0.41	0.70	G	< 1"	0.40	50	0.29	0.47	
	03	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	G	< 1"	0.40	50	0.20	0.43	
	04	0.750	0.118	0.266		0.366		AIR				A8-D	0.022							0.32	0.28	0.63	G	< 1"	0.40	50	0.20	0.43	
	05	0.750	0.118	0.315		0.317		AIR				A8-D	0.022							0.34	0.28	0.63	G	< 1"	0.40	50	0.20	0.43	
019	00	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	N		0.33	54	0.32	0.53	EE272/060-Lami, Arg
	01	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	S	>1"	0.33	54	0.26	0.42	
	02	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.042							0.26	0.41	0.70	N		0.33	54	0.32	0.54	EE272/030-Lami, Arg
	03	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.042							0.26	0.41	0.70	S	>1"	0.33	54	0.26	0.42	
	04	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	N		0.33	54	0.32	0.53	EE272/090-Lami, Arg

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	05	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	S	>1"	0.33	54	0.25	0.42	
	06	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.28	0.63	N		0.33	54	0.21	0.48	EE366/060-Lami, Arg
	07	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.28	0.63	S	>1"	0.33	54	0.17	0.38	
	08	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.022							0.25	0.27	0.63	N		0.33	54	0.21	0.48	EE366/030-Lami, Arg
	09	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.022							0.25	0.27	0.63	S	>1"	0.33	54	0.17	0.38	
	10	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.27	0.63	N		0.33	54	0.21	0.48	EE366/090-Lami, Arg
	11	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.27	0.63	S	>1"	0.33	54	0.17	0.38	
020	00	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	G	< 1"	0.35	54	0.29	0.48	
	01	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.042							0.26	0.41	0.70	G	< 1"	0.35	54	0.29	0.48	
	02	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.042							0.28	0.41	0.70	G	< 1"	0.35	54	0.28	0.47	
	03	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.28	0.63	G	< 1"	0.35	54	0.19	0.43	
	04	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.022							0.25	0.27	0.63	G	< 1"	0.35	54	0.19	0.43	
	05	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.022							0.27	0.27	0.63	G	< 1"	0.35	54	0.19	0.43	

Products with modified PFD (see attached drawing for details)

021	00	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042						LE	0.25	0.42	0.73	N		0.30	57	0.34	0.58	EE272 / CL, Arg
	01	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042						LE	0.25	0.42	0.73	G	< 1"	0.30	57	0.30	0.52	EE272 / CL, Arg
	04	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.042						LE	0.25	0.42	0.73	S	>1"	0.30	57	0.27	0.46	EE272 / CL, Arg
	05	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022						LE	0.25	0.27	0.65	N		0.30	57	0.22	0.52	EE366 / CL, Arg
	06	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022						LE	0.25	0.27	0.65	G	< 1"	0.30	57	0.20	0.46	EE366 / CL, Arg

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	09	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.022						LE	0.25	0.27	0.65	S	>1"	0.30	57	0.18	0.41	EE366 / CL, Arg
	10	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042						LE	0.25	0.41	0.72	N		0.30	57	0.33	0.57	EE272 / CL, Arg
	11	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042						LE	0.25	0.41	0.72	G	< 1"	0.30	57	0.30	0.51	EE272 / CL, Arg
	14	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.042						LE	0.25	0.41	0.72	S	>1"	0.30	57	0.27	0.45	EE272 / CL, Arg
	15	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022						LE	0.24	0.27	0.65	N		0.30	57	0.22	0.51	EE366 / CL, Arg
	16	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022						LE	0.24	0.27	0.65	G	< 1"	0.30	57	0.20	0.46	EE366 / CL, Arg
	19	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.022						LE	0.24	0.27	0.65	S	>1"	0.30	57	0.18	0.41	EE366 / CL, Arg
022	00	0.750	0.098	0.098		0.553		AIR				A8-D	0.037						LE	0.30	0.37	0.71	N		0.34	54	0.30	0.56	E270 / CL
	01	0.750	0.098	0.098		0.553		AIR				A8-D	0.037						LE	0.30	0.37	0.71	G	< 1"	0.34	54	0.27	0.50	E270 / CL
	04	0.750	0.098	0.098		0.553		AIR				A8-D	0.037						LE	0.30	0.37	0.71	S	>1"	0.34	54	0.24	0.45	E270 / CL
	05	0.750	0.118	0.118		0.514		AIR				A8-D	0.037						LE	0.30	0.37	0.70	N		0.34	54	0.30	0.56	E270 / CL
	06	0.750	0.118	0.118		0.514		AIR				A8-D	0.037						LE	0.30	0.37	0.70	G	< 1"	0.34	54	0.27	0.50	E270 / CL
	09	0.750	0.118	0.118		0.514		AIR				A8-D	0.037						LE	0.30	0.37	0.70	S	>1"	0.34	54	0.24	0.44	E270 / CL
023	00	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.037						LE	0.25	0.37	0.71	N		0.30	57	0.30	0.56	E270 / CL, Arg
	01	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.037						LE	0.25	0.37	0.71	G	< 1"	0.30	57	0.27	0.50	E270 / CL, Arg
	04	0.750	0.098	0.098		0.553		ARG	90			A8-D	0.037						LE	0.25	0.37	0.71	S	>1"	0.30	57	0.24	0.45	E270 / CL, Arg
	05	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.037						LE	0.25	0.37	0.70	N		0.30	57	0.30	0.56	E270 / CL Arg
	06	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.037						LE	0.25	0.37	0.70	G	< 1"	0.30	57	0.27	0.50	E270 / CL Arg
	09	0.750	0.118	0.118		0.514		ARG	90			A8-D	0.037						LE	0.25	0.37	0.70	S	>1"	0.30	57	0.24	0.44	E270 / CL Arg
024	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.037						LE	0.33	0.37	0.69	N		0.36	50	0.30	0.55	E270 / CL

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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	01	0.750	0.197	0.197		0.356		AIR				A8-D	0.037						LE	0.33	0.37	0.69	S	>1"	0.36	50	0.24	0.43	E270 / CL
025	00	0.750	0.197	0.197		0.356		AIR				A8-D	0.037						LE	0.33	0.37	0.69	G	< 1"	0.38	50	0.27	0.49	E270 / CL
026	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.037						LE	0.27	0.36	0.69	N		0.32	53	0.29	0.55	E270 / CL, Arg
	01	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.037						LE	0.27	0.36	0.69	S	>1"	0.32	53	0.24	0.43	E270 / CL, Arg
027	00	0.750	0.197	0.197		0.356		ARG	90			A8-D	0.037						LE	0.27	0.36	0.69	G	< 1"	0.33	53	0.27	0.49	E270 / CL, Arg
028	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.35	0.37	0.68	N		0.37	50	0.30	0.54	E270 / Lami
	01	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.35	0.37	0.68	S	>1"	0.37	50	0.24	0.43	E270 / Lami
	02	0.750	0.118	0.266		0.366		AIR				A8-D	0.037						LE	0.32	0.37	0.69	N		0.37	50	0.30	0.54	E270 / 030-Lami
	03	0.750	0.118	0.266		0.366		AIR				A8-D	0.037						LE	0.32	0.37	0.69	S	>1"	0.37	50	0.24	0.43	E270 / 030-Lami
	04	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.34	0.37	0.68	N		0.37	50	0.30	0.54	E270 / 090-Lami
	05	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.34	0.37	0.68	S	>1"	0.37	50	0.24	0.43	E270 / 090-Lami
029	00	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.35	0.37	0.68	G	< 1"	0.39	50	0.27	0.49	E270 / Lami
	01	0.750	0.118	0.266		0.366		AIR				A8-D	0.037						LE	0.32	0.37	0.69	G	< 1"	0.39	50	0.27	0.49	E270 / 030-Lami
	02	0.750	0.118	0.315		0.317		AIR				A8-D	0.037						LE	0.34	0.37	0.68	G	< 1"	0.39	50	0.27	0.48	E270 / 090-Lami
030	00	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.037						LE	0.28	0.37	0.68	N		0.32	54	0.30	0.54	E270 / 060-Lami, Arg
	01	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.037						LE	0.28	0.37	0.68	S	>1"	0.32	54	0.24	0.43	E270 / 060-Lami, Arg
	02	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.037						LE	0.26	0.37	0.69	N		0.32	54	0.30	0.54	E270 / 030-Lami, Arg
	03	0.750	0.118	0.266		0.366		ARG	90			A8-D	0.037						LE	0.26	0.37	0.69	S	>1"	0.32	54	0.24	0.43	E270 / 030-Lami, Arg
	04	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.037						LE	0.28	0.36	0.68	N		0.32	54	0.29	0.54	E270 / 090-Lami, Arg
	05	0.750	0.118	0.315		0.317		ARG	90			A8-D	0.037						LE	0.28	0.36	0.68	S	>1"	0.32	54	0.24	0.43	E270 / 090-Lami, Arg

Report Number: ETC-07-738-19078.2

Product Number	Grouping ID Number	Overall IG Thickness	Pane Thickness #[1]	Pane Thickness #[2]	Pane Thickness #[3]	Gap 1	Gap 2	Gap Fill 1	% of Gap fill 1	Gap Fill 2	% of Gap fill 1	Spacer	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Tint	C-O-G U-factor	C-O-G SHGC	C-O-G VT	Grid Type	Grid Size	Total Product U-factor	CR - Value	Total Product SHGC	Total Product VT	Additional Comments
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031	00	0.750	0.118	0.315		0.317		ARG	90			A8-D		0.037						LE	0.28	0.37	0.68	G	< 1"	0.34	54	0.27	0.49	E270 / 060-Lami, Arg
	01	0.750	0.118	0.266		0.366		ARG	90			A8-D		0.037						LE	0.26	0.37	0.69	G	< 1"	0.34	54	0.27	0.49	E270 / 030-Lami, Arg
	02	0.750	0.118	0.315		0.317		ARG	90			A8-D		0.037						LE	0.28	0.36	0.68	G	< 1"	0.34	54	0.27	0.48	E270 / 090-Lami, Arg

Comments : Horizontal Slider window with vinyl frame and sash.
 Aluminum reinforcement in fixed meeting stile.
 ARG - Argon with Single Probe filling method.
 A8-D - Duraseal Spacer (Dual Seal).
 N - Products with no internal grids.
 G (Grid Size: <1") - Products with 0.188" x 0.802" size internal grids.
 S (Grid Size: >1") - Products with 1.121" size simulated divided lites.
 Low-e: 0.036 - Acclimate RLE 70/36 (Guardian); 0.042 - LoE²-272 (Cardinal IG); 0.022 - LoE³-366 (Cardinal IG); 0.037 - LoE²-270 (Cardinal IG)

Revision History: ETC-07-738-19078.1 - Option 011 - 020 were added.
 ETC-07-738-19078.2 - Options 21 - 31 were added.

U-factor: Thermal Transmittance through the specimen	VT: Visible Transmittance
SHGC: Solar Heat Gain Coefficient	CR: Condensation Resistance

Specialty Products

200 Horizontal Sliding Window

Report Number: ETC-07-738-19078.2

	No Dividers	Divider <1"	Divider >1"
SHGC0	0.005	0.007	0.010
SHGC1	0.796	0.714	0.636
VT0	0.000	0.000	0.000
VT1	0.792	0.707	0.626

Products with modified PFD (see attached drawing for details)

	No Dividers	Divider <1"	Divider >1"
SHGC0	0.005	0.007	0.010
SHGC1	0.799	0.716	0.639
VT0	0.000	0.000	0.000
VT1	0.794	0.709	0.629

$$SHGC = SHGC_0 + SHGC_c * (SHGC_1 - SHGC_0)$$

$$VT = VT_0 + VT_c * (VT_1 - VT_0)$$

Where $SHGC_c$ = Center of Glass Solar Heat Gain Coefficient
& VT_c = Center of Glass Visible transmittance

Modeling Assumptions

1. Grouping Performed: 1) Center-of-Glazing

Product Description

200 Horizontal Sliding Window

Report Number: ETC-07-738-19078.2

Frame:

Size (mm)	1500 x 1200
Material	Vinyl - Rigid
Glazing Method	Interior Glazed
Glazing Sealant	Silicone

Sash (1):

Operation Type	Horizontal Sliding
Material	Vinyl - Rigid
Glazing Method	Exterior Glazed
Glazing Sealant	Silicone

Sash (2):

Operation Type	
Material	
Glazing Method	
Glazing Sealant	

Reinforcement Material & Locations:

Aluminum reinforcement in fixed meeting stile.

Weatherstripping Type and Locations:

Fin pile weatherstripping used in fixed meeting stile, all rails and stiles of sash.

Others:

ARG - Argon with Single Probe filling method.

Low-e: 0.036 - Acclimate RLE 70/36 (Guardian); 0.042 - LoE²-272 (Cardinal IG); 0.022 - LoE³-366 (Cardinal IG); 0.037 - LoE²-270 (Cardinal IG)

A8-D - Duraseal Spacer (Dual Seal).

This report, in its original form contains product drawings and a Bill of Materials.

Report Number: ETC-07-738-19078.2

Conditions, Terms, and General Notes Regarding The Simulation

The individual products were simulated in full accordance with NFRC 100-2004, 200-2004 & 500-2004, using NFRC approved programs Window 5.2 and THERM 5.2. All window specifications were received from drawings and bill of materials supplied by the manufacturer. This report may not be reproduced except in full, without the approval of ETC Laboratories. This report relates only to the items simulated. Rounding is per NFRC unit conversion and rounding Policy. **The rating values included in this report are for submittal to an NFRC-licensed IA and not meant to be used directly for labeling purposes.** Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes.

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FOR ETC LABORATORIES

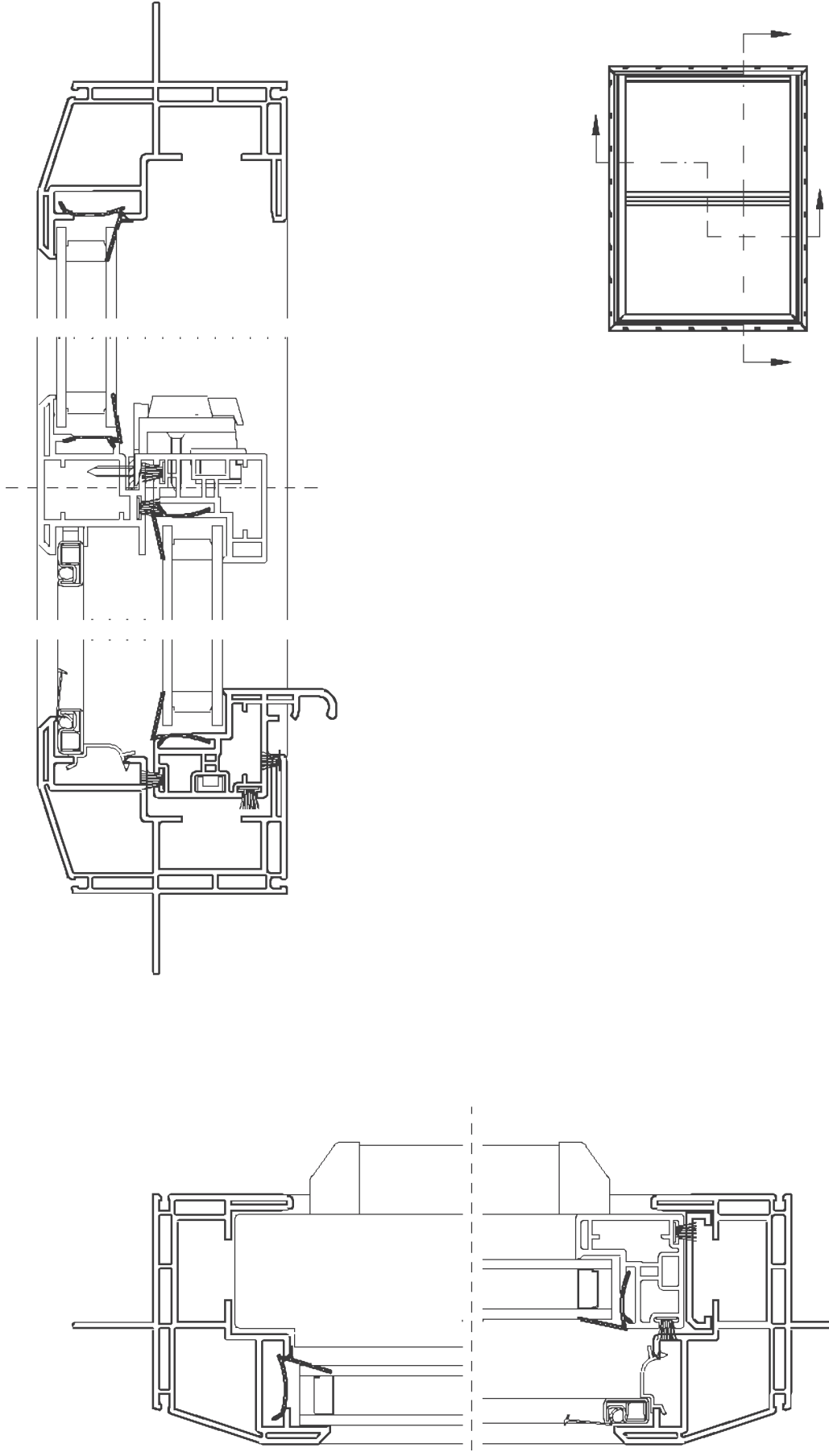
Michael Cooper
Simulation Technician, NFRC Certified Simulator
Thermal Simulation Department

Gurjinder Singh
Simulator-in-Responsible Charge, NFRC Certified Simulator
Thermal Simulation Department

200 HS	
Location	Part Number
Stile	9222-2
Rail Interlock	9223-3
Meeting Rail	211-2
Frame Master	201 MFIN
Glass Stop Fixed panel	A226
Meeting Rail	24010
Slider Track Filler	A207

ETC Laboratories Report #: ETC-07-738-19078.0
 Verified By: MC Date: 06/13/2007

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"EXTERIOR ELEVATION"

REVISIONS		USED ON		PART DESC:	
NO.	DATE	DESCRIPTION	PURCHASED PART DWG.	200 SERIES HS CROSS-SECTIONS	AREA:
			NEXT ASSY.	MATERIAL: RIGID PVC	DATE: 06/08/07
				DRAWN BY: RRH	DRAWING: 901-0003
				SCALE: .75=1"	WTG/FT:



