



**NFRC U-FACTOR, SHGC, VT, &
CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT**

**Rendered to:
COEUR D'ALENE WINDOW COMPANY**

**SERIES/MODEL:
3410 Picture Window**

**Report Number: F3149.01-201-45
Report Date: 02/01/16**



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Rendered to:
COEUR D'ALENE WINDOW COMPANY
3808 N. Sullivan Rd.
Spokane Valley, Washington 99216

Report Number: F3149.01-201-45
Simulation Date: 02/01/16
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Project Summary:

Architectural Testing, Inc., an Intertek Company (Intertek-ATI) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

ANSI/NFRC 100-2014: Procedure for Determining Fenestration Product U-Factors
ANSI/NFRC 200-2014: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
NFRC 500-2014: Procedure for Determining Fenestration Product Condensation Resistance Values

Software:

Frame and Edge Modeling: THERM 6.3.46
Center-of-Glass Modeling: WINDOW 6.3.74
Total Product Calculations: WINDOW 6.3.74
Spectral Data Library: IGDB 44.0

Simulations Specimen Description:

Series/Model: 3410 Picture Window
Type: Fixed, 4-Sided
Frame Material: VY Vinyl
VF Vinyl w/ Foam-filled Insulation
Sash Material: NA Not Applicable
Standard Size: 1200mm x 1500mm

Modeling Assumptions/Technical Interpretations:

- 1) Nailing fin was removable and not simulated per NFRC 100-2014 section 4.2.5.A.
- 2) Dividers were not modeled for options where there was at least 3mm of air/gas space between the divider and both adjacent glazing surfaces per NFRC 100-2014, section 4.2.4.1.D.ii.a.
- 3) Divider grouping per NFRC 100-2014, section 4.2.4.1: 0.188" x 0.625" rectangular, 0.188" x 0.750" rectangular, 0.188" x 0.813" rectangular, 0.188" x 1.000" rectangular, and 0.217" x 0.709" contour dividers were grouped with 0.188" x 1.000" as group leader.

Specialty Products Table:

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 6.3.74. The method gives overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.002296	0.005155	0.007856
SHGC1	0.840335	0.755536	0.675418
VT0	0.000000	0.000000	0.000000
VT1	0.838040	0.750381	0.667562

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$

Validation Matrix:

The following products are part of a validation matrix. Only one is required for validation testing.

Product Line	Report Number
None	-

Spacer Option Description

	Sealant		
Spacer Type	Primary	Secondary	Code
Cardinal Endur	Polyisobutylene	Silicone	SS-D

Grid Option Description

Grid Size	Grid Type	Grid Pattern
0.188" x 0.625"	Aluminum Rectangular Grid (Painted)	NFRC Standard
0.188" x 0.750"	Aluminum Rectangular Grid (Painted)	NFRC Standard
0.188" x 1.000"	Aluminum Rectangular Grid (Painted)	NFRC Standard
0.217" x 0.708"	Aluminum Contoured Grid (Painted)	NFRC Standard

Reinforcement Option Description

Location	Material
None	-

Gas Filling Technique Description

Fill Type	Method
90% Argon	Vacuum Chamber

Edge-of-Glass Construction

Interior Condition	
	Foam Weather Stripping
Exterior Condition	
	Vinyl Glazing Bead

Weatherstripping

Type	Quantity	Location
None	-	-

Frame/Sash Materials Finish

Interior	
	Vinyl
Exterior	
	Vinyl

NFRC 100/200/500 Summary Sheet

3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
1	2mm Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90		CL	SS-D	N,G,S
	U-Factor 0.44			SHGC (N / <1 / >1) 0.67 / 0.60 / 0.54					VT (N / <1 / >1) 0.70 / 0.62 / 0.56		CR 47	
2	2mm 270 Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#2)	CL	SS-D	N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 61	
3	2mm 366 Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.55 / 0.49 / 0.44		CR 62	
4	2mm Arg 270 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#3)	CL	SS-D	N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.39 / 0.35 / 0.32					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 62	
5	2mm Arg 366 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.33 / 0.30 / 0.27					VT (N / <1 / >1) 0.55 / 0.49 / 0.44		CR 62	
6	2mm 366 Arg 180 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.53 / 0.47 / 0.42		CR 62	
7	2mm 270 Arg 270 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.29 / 0.26 / 0.23					VT (N / <1 / >1) 0.51 / 0.45 / 0.40		CR 62	
8	3mm Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90		CL	SS-D	N,G,S
	U-Factor 0.46			SHGC (N / <1 / >1) 0.65 / 0.59 / 0.53					VT (N / <1 / >1) 0.69 / 0.62 / 0.55		CR 45	
9	3mm 180 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.068(#2)	CL	SS-D	N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.54 / 0.49 / 0.44					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR 60	
10	3mm 340 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.028(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.33 / 0.29 / 0.26		CR 61	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
11	3mm 270 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.28		SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 60		
12	3mm 366 Arg 3mm - 7/8"											
	0.117	0.625	0.118					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.27		SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.54 / 0.49 / 0.43		CR 61		
13	3mm 180 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.068(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.24		SHGC (N / <1 / >1) 0.53 / 0.47 / 0.42					VT (N / <1 / >1) 0.65 / 0.58 / 0.52		CR 47		
14	3mm 340 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.028(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23		SHGC (N / <1 / >1) 0.15 / 0.13 / 0.12					VT (N / <1 / >1) 0.32 / 0.28 / 0.25		CR 48		
15	3mm 270 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.037(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23		SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.57 / 0.51 / 0.46		CR 47		
16	3mm 366 Arg 3mm i89 - 7/8"											
	0.117	0.625	0.117					ARG90	0.022(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23		SHGC (N / <1 / >1) 0.23 / 0.20 / 0.19					VT (N / <1 / >1) 0.53 / 0.47 / 0.42		CR 48		
17	3mm BZ Arg 3mm - 7/8"											
	0.129	0.625	0.118					ARG90			BZ	SS-D N,G,S
	U-Factor 0.44		SHGC (N / <1 / >1) 0.53 / 0.47 / 0.42					VT (N / <1 / >1) 0.51 / 0.46 / 0.41		CR 47		
18	3mm GY Arg 3mm - 7/8"											
	0.129	0.625	0.118					ARG90			GY	SS-D N,G,S
	U-Factor 0.44		SHGC (N / <1 / >1) 0.49 / 0.44 / 0.40					VT (N / <1 / >1) 0.46 / 0.41 / 0.37		CR 47		
19	3mm BZ Arg 270 3mm - 7/8"											
	0.129	0.625	0.118					ARG90	0.037(#3)		BZ	SS-D N,G,S
	U-Factor 0.28		SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.43 / 0.39 / 0.35		CR 61		
20	3mm GY Arg 270 3mm - 7/8"											
	0.129	0.625	0.118					ARG90	0.037(#3)		GY	SS-D N,G,S
	U-Factor 0.28		SHGC (N / <1 / >1) 0.28 / 0.26 / 0.23					VT (N / <1 / >1) 0.39 / 0.35 / 0.31		CR 61		

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
21	3mm Arg 180 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.58 / 0.52 / 0.47					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR 60	
22	3mm Arg 340 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.028(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.35 / 0.32 / 0.29					VT (N / <1 / >1) 0.33 / 0.29 / 0.26		CR 61	
23	3mm Arg 270 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.39 / 0.35 / 0.32					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 61	
24	3mm Arg 366 3mm - 7/8"											
	0.118	0.625	0.117					ARG90	0.022(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.33 / 0.30 / 0.27					VT (N / <1 / >1) 0.54 / 0.49 / 0.43		CR 61	
25	3mm 270 Arg 3mm BZ - 7/8"											
	0.118	0.625	0.129					ARG90	0.037(#2)		BZ	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.25					VT (N / <1 / >1) 0.43 / 0.39 / 0.35		CR 60	
26	3mm 270 Arg 3mm GY - 7/8"											
	0.118	0.625	0.129					ARG90	0.037(#2)		GY	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.25					VT (N / <1 / >1) 0.39 / 0.35 / 0.31		CR 60	
27	3mm 180 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.068(#2)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.54 / 0.49 / 0.44					VT (N / <1 / >1) 0.66 / 0.59 / 0.52		CR 58	
28	3mm 340 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.028(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR 59	
29	3mm 270 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR 59	
30	3mm 366 Arg 5mm - 7/8"											
	0.117	0.562	0.185					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.54 / 0.48 / 0.43		CR 60	

NFRC 100/200/500 Summary Sheet

3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
31	3mm 366 Arg 180 3mm - 7/8"											
	0.117	0.625	0.118					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.52 / 0.47 / 0.42		CR	61
32	3mm 270 Arg 270 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.28 / 0.26 / 0.23					VT (N / <1 / >1) 0.50 / 0.45 / 0.40		CR	61
33	4mm Arg 4mm - 7/8"											
	0.154	0.563	0.154					ARG90			CL	SS-D N,G,S
	U-Factor 0.45			SHGC (N / <1 / >1) 0.63 / 0.57 / 0.51					VT (N / <1 / >1) 0.68 / 0.61 / 0.55		CR	45
34	4mm 180 Arg 4mm - 7/8"											
	0.160	0.563	0.154					ARG90	0.068(#2)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.53 / 0.48 / 0.43					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR	59
35	4mm 270 Arg 4mm - 7/8"											
	0.157	0.563	0.154					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR	60
36	4mm 366 Arg 4mm - 7/8"											
	0.153	0.563	0.154					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.54 / 0.48 / 0.43		CR	60
37	4mm SCBZ Arg 4mm - 7/8"											
	0.154	0.563	0.154					ARG90			BZ	SS-D N,G,S
	U-Factor 0.44			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.24					VT (N / <1 / >1) 0.19 / 0.17 / 0.15		CR	46
38	4mm SCBZ Arg 270 4mm - 7/8"											
	0.154	0.563	0.157					ARG90	0.037(#3)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.14 / 0.13 / 0.12					VT (N / <1 / >1) 0.16 / 0.14 / 0.13		CR	60
39	4mm Arg 180 4mm - 7/8"											
	0.154	0.563	0.160					ARG90	0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.56 / 0.51 / 0.45					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR	59
40	4mm Arg 270 4mm - 7/8"											
	0.154	0.563	0.157					ARG90	0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.38 / 0.34 / 0.31					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR	60

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
41	4mm Arg 366 4mm - 7/8"											
	0.154	0.563	0.153					ARG90	0.022(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.33 / 0.30 / 0.27					VT (N / <1 / >1) 0.54 / 0.48 / 0.43		CR 60	
42	4mm 270 Arg SCBZ 4mm - 7/8"											
	0.157	0.563	0.154					ARG90	0.037(#2)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.26 / 0.23 / 0.21					VT (N / <1 / >1) 0.16 / 0.14 / 0.13		CR 60	
43	4mm 366 Arg 180 4mm - 7/8"											
	0.153	0.563	0.160					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.52 / 0.46 / 0.41		CR 60	
44	4mm 270 Arg 270 4mm - 7/8"											
	0.157	0.563	0.157					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.28 / 0.25 / 0.23					VT (N / <1 / >1) 0.49 / 0.44 / 0.39		CR 61	
45	5mm Arg 5mm - 7/8"											
	0.185	0.500	0.185					ARG90			CL	SS-D N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.63 / 0.56 / 0.50					VT (N / <1 / >1) 0.68 / 0.61 / 0.54		CR 46	
46	5mm 180 Arg 5mm - 7/8"											
	0.187	0.500	0.185					ARG90	0.068(#2)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.52 / 0.47 / 0.42					VT (N / <1 / >1) 0.65 / 0.58 / 0.52		CR 58	
47	5mm 340 Arg 5mm - 7/8"											
	0.185	0.500	0.185					ARG90	0.028(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR 59	
48	5mm 270 Arg 5mm - 7/8"											
	0.197	0.500	0.185					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR 59	
49	5mm 366 Arg 5mm - 7/8"											
	0.187	0.500	0.185					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.53 / 0.48 / 0.42		CR 60	
50	5mm 180 Arg 5mm i89 - 7/8"											
	0.187	0.500	0.187					ARG90	0.068(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23			SHGC (N / <1 / >1) 0.50 / 0.45 / 0.41					VT (N / <1 / >1) 0.64 / 0.57 / 0.51		CR 46	

NFRC 100/200/500 Summary Sheet

3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
51	5mm 340 Arg 5mm i89 - 7/8"											
	0.185	0.500	0.187					ARG90	0.028(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.15 / 0.13 / 0.12					VT (N / <1 / >1) 0.31 / 0.28 / 0.25		CR 47	
52	5mm 270 Arg 5mm i89 - 7/8"											
	0.197	0.500	0.187					ARG90	0.037(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.24					VT (N / <1 / >1) 0.56 / 0.50 / 0.45		CR 46	
53	5mm 366 Arg 5mm i89 - 7/8"											
	0.187	0.500	0.187					ARG90	0.022(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.23 / 0.20 / 0.19					VT (N / <1 / >1) 0.52 / 0.47 / 0.41		CR 47	
54	5mm BZ Arg 5mm - 7/8"											
	0.184	0.500	0.185					ARG90		BZ	SS-D	N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.47 / 0.42 / 0.38					VT (N / <1 / >1) 0.44 / 0.40 / 0.35		CR 46	
55	5mm GY Arg 5mm - 7/8"											
	0.184	0.500	0.185					ARG90		GY	SS-D	N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.42 / 0.38 / 0.34					VT (N / <1 / >1) 0.38 / 0.34 / 0.30		CR 46	
56	5mm BZ Arg 270 5mm - 7/8"											
	0.184	0.500	0.197					ARG90	0.037(#3)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.27 / 0.25 / 0.22					VT (N / <1 / >1) 0.38 / 0.34 / 0.30		CR 59	
57	5mm GY Arg 270 5mm - 7/8"											
	0.184	0.500	0.197					ARG90	0.037(#3)		GY	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.25 / 0.23 / 0.20					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR 59	
58	5mm Arg 180 5mm - 7/8"											
	0.185	0.500	0.187					ARG90	0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.55 / 0.50 / 0.45					VT (N / <1 / >1) 0.65 / 0.58 / 0.52		CR 59	
59	5mm Arg 270 5mm - 7/8"											
	0.185	0.500	0.197					ARG90	0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.38 / 0.34 / 0.31					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR 59	
60	5mm Arg 366 5mm - 7/8"											
	0.185	0.500	0.187					ARG90	0.022(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.32 / 0.29 / 0.26					VT (N / <1 / >1) 0.53 / 0.48 / 0.42		CR 60	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
61	5mm 270 Arg 5mm BZ - 7/8"											
	0.197	0.500	0.184					ARG90	0.037(#2)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.29 / 0.27 / 0.24					VT (N / <1 / >1) 0.38 / 0.34 / 0.30		CR	59
62	5mm 270 Arg 5mm GY - 7/8"											
	0.197	0.500	0.184					ARG90	0.037(#2)		GY	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.29 / 0.26 / 0.24					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR	59
63	5mm 366 Arg 180 5mm - 7/8"											
	0.187	0.500	0.187					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.51 / 0.46 / 0.41		CR	60
64	5mm 270 Arg 270 5mm - 7/8"											
	0.197	0.500	0.197					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.28 / 0.25 / 0.23					VT (N / <1 / >1) 0.49 / 0.44 / 0.39		CR	60
65	6mm Arg 6mm - 7/8"											
	0.224	0.375	0.224					ARG90			CL	SS-D N
	U-Factor 0.44			SHGC (N) 0.60					VT (N) 0.67		CR	45
66	6mm Arg 6mm - 7/8"											
	0.224	0.375	0.224					ARG90			CL	SS-D G,S
	U-Factor 0.45			SHGC (<1 / >1) 0.54 / 0.49					VT (<1 / >1) 0.60 / 0.53		CR	45
67	6mm 180 Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90	0.068(#2)		CL	SS-D N
	U-Factor 0.29			SHGC (N) 0.51					VT (N) 0.64		CR	56
68	6mm 180 Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90	0.068(#2)		CL	SS-D G,S
	U-Factor 0.31			SHGC (<1 / >1) 0.46 / 0.41					VT (<1 / >1) 0.58 / 0.51		CR	56
69	6mm 270 Arg 6mm - 7/8"											
	0.236	0.375	0.224					ARG90	0.037(#2)		CL	SS-D N
	U-Factor 0.28			SHGC (N) 0.30					VT (N) 0.57		CR	57
70	6mm 270 Arg 6mm - 7/8"											
	0.236	0.375	0.224					ARG90	0.037(#2)		CL	SS-D G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.28 / 0.25					VT (<1 / >1) 0.51 / 0.45		CR	57

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
71	6mm 366 Arg 6mm - 7/8"											
	0.225	0.375	0.224					ARG90	0.022(#2)	CL	SS-D	N
	U-Factor 0.28			SHGC (N) 0.23					VT (N) 0.53		CR 57	
72	6mm 366 Arg 6mm - 7/8"											
	0.225	0.375	0.224					ARG90	0.022(#2)	CL	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.47 / 0.42		CR 57	
73	6mm BZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	N
	U-Factor 0.44			SHGC (N) 0.43					VT (N) 0.40		CR 45	
74	6mm BZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	G,S
	U-Factor 0.45			SHGC (<1 / >1) 0.39 / 0.35					VT (<1 / >1) 0.36 / 0.32		CR 45	
75	6mm GY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	N
	U-Factor 0.44			SHGC (N) 0.39					VT (N) 0.33		CR 45	
76	6mm GY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	G,S
	U-Factor 0.45			SHGC (<1 / >1) 0.35 / 0.31					VT (<1 / >1) 0.30 / 0.27		CR 45	
77	6mm SCBZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	N
	U-Factor 0.44			SHGC (N) 0.26					VT (N) 0.16		CR 45	
78	6mm SCBZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	G,S
	U-Factor 0.45			SHGC (<1 / >1) 0.24 / 0.21					VT (<1 / >1) 0.14 / 0.12		CR 45	
79	6mm SCGY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	N
	U-Factor 0.44			SHGC (N) 0.23					VT (N) 0.13		CR 45	
80	6mm SCGY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	G,S
	U-Factor 0.45			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.12 / 0.10		CR 45	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
81	6mm BZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	N
	U-Factor 0.28			SHGC (N) 0.26					VT (N) 0.34		CR 57	
82	6mm BZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.23 / 0.21					VT (<1 / >1) 0.30 / 0.27		CR 57	
83	6mm GY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	N
	U-Factor 0.28			SHGC (N) 0.23					VT (N) 0.28		CR 57	
84	6mm GY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.25 / 0.23		CR 57	
85	6mm SCBZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	N
	U-Factor 0.28			SHGC (N) 0.13					VT (N) 0.13		CR 57	
86	6mm SCBZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.12 / 0.11					VT (<1 / >1) 0.12 / 0.10		CR 57	
87	6mm SCGY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	N
	U-Factor 0.28			SHGC (N) 0.12					VT (N) 0.11		CR 57	
88	6mm SCGY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.11 / 0.10					VT (<1 / >1) 0.10 / 0.09		CR 57	
89	6mm Arg 180 6mm - 7/8"											
	0.224	0.375	0.223					ARG90	0.068(#3)	CL	SS-D	N
	U-Factor 0.29			SHGC (N) 0.54					VT (N) 0.64		CR 56	
90	6mm Arg 180 6mm - 7/8"											
	0.224	0.375	0.223					ARG90	0.068(#3)	CL	SS-D	G,S
	U-Factor 0.31			SHGC (<1 / >1) 0.48 / 0.43					VT (<1 / >1) 0.58 / 0.51		CR 56	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
91	6mm Arg 270 6mm - 7/8"											
	0.224	0.375	0.236					ARG90	0.037(#3)	CL	SS-D	N
	U-Factor 0.28			SHGC (N) 0.37					VT (N) 0.57		CR 57	
92	6mm Arg 270 6mm - 7/8"											
	0.224	0.375	0.236					ARG90	0.037(#3)	CL	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.34 / 0.30					VT (<1 / >1) 0.51 / 0.45		CR 57	
93	6mm Arg 366 6mm - 7/8"											
	0.224	0.375	0.225					ARG90	0.022(#3)	CL	SS-D	N
	U-Factor 0.28			SHGC (N) 0.32					VT (N) 0.53		CR 57	
94	6mm Arg 366 6mm - 7/8"											
	0.224	0.375	0.225					ARG90	0.022(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.29 / 0.26					VT (<1 / >1) 0.47 / 0.42		CR 57	
95	6mm Arg 340 6mm - 7/8"											
	0.224	0.375	0.224					ARG90	0.028(#3)	CL	SS-D	N
	U-Factor 0.28			SHGC (N) 0.33					VT (N) 0.32		CR 57	
96	6mm Arg 340 6mm - 7/8"											
	0.224	0.375	0.224					ARG90	0.028(#3)	CL	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.30 / 0.27					VT (<1 / >1) 0.28 / 0.25		CR 57	
97	6mm 270 Arg 6mm BZ - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	N
	U-Factor 0.28			SHGC (N) 0.29					VT (N) 0.34		CR 57	
98	6mm 270 Arg 6mm BZ - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.26 / 0.24					VT (<1 / >1) 0.30 / 0.27		CR 57	
99	6mm 270 Arg 6mm GY - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	N
	U-Factor 0.28			SHGC (N) 0.29					VT (N) 0.28		CR 57	
100	6mm 270 Arg 6mm GY - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.26 / 0.23					VT (<1 / >1) 0.25 / 0.23		CR 57	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
101	6mm 270 Arg SCBZ 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	N
	U-Factor 0.28			SHGC (N) 0.21					VT (N) 0.13		CR 57	
102	6mm 270 Arg SCBZ 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.12 / 0.11		CR 57	
103	6mm 270 Arg SCGY 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	N
	U-Factor 0.28			SHGC (N) 0.21					VT (N) 0.11		CR 57	
104	6mm 270 Arg SCGY 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.10 / 0.09		CR 57	
105	6mm 366 Arg 180 6mm - 7/8"											
	0.225	0.375	0.223					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.23					VT (N) 0.51		CR 57	
106	6mm 366 Arg 180 6mm - 7/8"											
	0.225	0.375	0.223					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.45 / 0.40		CR 57	
107	6mm 270 Arg 270 6mm - 7/8"											
	0.236	0.375	0.236					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.28					VT (N) 0.48		CR 57	
108	6mm 270 Arg 270 6mm - 7/8"											
	0.236	0.375	0.236					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.25 / 0.23					VT (<1 / >1) 0.43 / 0.39		CR 57	
109	2mm Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90		CL	SS-D	N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.67 / 0.60 / 0.54					VT (N / <1 / >1) 0.70 / 0.62 / 0.56		CR 47	
110	2mm 270 Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 61	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
111	2mm 366 Arg 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.55 / 0.49 / 0.44		CR 62	
112	2mm Arg 270 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.39 / 0.35 / 0.32					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 62	
113	2mm Arg 366 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.33 / 0.30 / 0.27					VT (N / <1 / >1) 0.55 / 0.49 / 0.44		CR 62	
114	2mm 366 Arg 180 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.53 / 0.47 / 0.42		CR 62	
115	2mm 270 Arg 270 2mm - 7/8"											
	0.087	0.687	0.087					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.29 / 0.26 / 0.23					VT (N / <1 / >1) 0.51 / 0.45 / 0.40		CR 62	
116	3mm Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90		CL	SS-D	N,G,S
	U-Factor 0.45			SHGC (N / <1 / >1) 0.65 / 0.59 / 0.53					VT (N / <1 / >1) 0.69 / 0.62 / 0.55		CR 45	
117	3mm 180 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.068(#2)	CL	SS-D	N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.54 / 0.49 / 0.44					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR 60	
118	3mm 340 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.028(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.33 / 0.29 / 0.26		CR 61	
119	3mm 270 Arg 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#2)	CL	SS-D	N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR 61	
120	3mm 366 Arg 3mm - 7/8"											
	0.117	0.625	0.118					ARG90	0.022(#2)	CL	SS-D	N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.54 / 0.49 / 0.43		CR 61	

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
121	3mm 180 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.068(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23			SHGC (N / <1 / >1) 0.53 / 0.47 / 0.42					VT (N / <1 / >1) 0.65 / 0.58 / 0.52		CR	47
122	3mm 340 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.028(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.15 / 0.13 / 0.12					VT (N / <1 / >1) 0.32 / 0.28 / 0.25		CR	48
123	3mm 270 Arg 3mm i89 - 7/8"											
	0.118	0.625	0.117					ARG90	0.037(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.57 / 0.51 / 0.46		CR	48
124	3mm 366 Arg 3mm i89 - 7/8"											
	0.117	0.625	0.117					ARG90	0.022(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.23 / 0.20 / 0.19					VT (N / <1 / >1) 0.53 / 0.47 / 0.42		CR	48
125	3mm BZ Arg 3mm - 7/8"											
	0.129	0.625	0.118					ARG90			BZ	SS-D N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.53 / 0.47 / 0.42					VT (N / <1 / >1) 0.51 / 0.46 / 0.41		CR	47
126	3mm GY Arg 3mm - 7/8"											
	0.129	0.625	0.118					ARG90			GY	SS-D N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.49 / 0.44 / 0.40					VT (N / <1 / >1) 0.46 / 0.41 / 0.37		CR	47
127	3mm BZ Arg 270 3mm - 7/8"											
	0.129	0.625	0.118					ARG90	0.037(#3)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.43 / 0.39 / 0.35		CR	61
128	3mm GY Arg 270 3mm - 7/8"											
	0.129	0.625	0.118					ARG90	0.037(#3)		GY	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.28 / 0.26 / 0.23					VT (N / <1 / >1) 0.39 / 0.35 / 0.31		CR	61
129	3mm Arg 180 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.58 / 0.52 / 0.47					VT (N / <1 / >1) 0.66 / 0.59 / 0.53		CR	60
130	3mm Arg 340 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.028(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.35 / 0.32 / 0.29					VT (N / <1 / >1) 0.33 / 0.29 / 0.26		CR	61

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
131	3mm Arg 270 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.39 / 0.35 / 0.32					VT (N / <1 / >1) 0.59 / 0.53 / 0.47		CR	61
132	3mm Arg 366 3mm - 7/8"											
	0.118	0.625	0.117					ARG90	0.022(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.33 / 0.30 / 0.27					VT (N / <1 / >1) 0.54 / 0.49 / 0.43		CR	61
133	3mm 270 Arg 3mm BZ - 7/8"											
	0.118	0.625	0.129					ARG90	0.037(#2)		BZ	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.25					VT (N / <1 / >1) 0.43 / 0.39 / 0.35		CR	61
134	3mm 270 Arg 3mm GY - 7/8"											
	0.118	0.625	0.129					ARG90	0.037(#2)		GY	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.25					VT (N / <1 / >1) 0.39 / 0.35 / 0.31		CR	61
135	3mm 180 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.068(#2)		CL	SS-D N,G,S
	U-Factor 0.28			SHGC (N / <1 / >1) 0.54 / 0.49 / 0.44					VT (N / <1 / >1) 0.66 / 0.59 / 0.52		CR	59
136	3mm 340 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.028(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR	60
137	3mm 270 Arg 5mm - 7/8"											
	0.118	0.562	0.185					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.31 / 0.28 / 0.25					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR	59
138	3mm 366 Arg 5mm - 7/8"											
	0.117	0.562	0.185					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.54 / 0.48 / 0.43		CR	60
139	3mm 366 Arg 180 3mm - 7/8"											
	0.117	0.625	0.118					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.52 / 0.47 / 0.42		CR	62
140	3mm 270 Arg 270 3mm - 7/8"											
	0.118	0.625	0.118					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.28 / 0.26 / 0.23					VT (N / <1 / >1) 0.50 / 0.45 / 0.40		CR	62

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type	
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance		
141	4mm Arg 4mm - 7/8"												
	0.154	0.563	0.154					ARG90		CL	SS-D	N,G,S	
	U-Factor		0.45	SHGC (N / <1 / >1)					0.63 / 0.57 / 0.51	VT (N / <1 / >1)		0.68 / 0.61 / 0.55	CR
142	4mm 180 Arg 4mm - 7/8"												
	0.160	0.563	0.154					ARG90	0.068(#2)		CL	SS-D	N,G,S
	U-Factor		0.28	SHGC (N / <1 / >1)					0.53 / 0.48 / 0.43	VT (N / <1 / >1)		0.66 / 0.59 / 0.53	CR
143	4mm 270 Arg 4mm - 7/8"												
	0.157	0.563	0.154					ARG90	0.037(#2)		CL	SS-D	N,G,S
	U-Factor		0.27	SHGC (N / <1 / >1)					0.30 / 0.28 / 0.25	VT (N / <1 / >1)		0.58 / 0.52 / 0.46	CR
144	4mm 366 Arg 4mm - 7/8"												
	0.153	0.563	0.154					ARG90	0.022(#2)		CL	SS-D	N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)					0.23 / 0.21 / 0.19	VT (N / <1 / >1)		0.54 / 0.48 / 0.43	CR
145	4mm SCBZ Arg 4mm - 7/8"												
	0.154	0.563	0.154					ARG90		BZ	SS-D	N,G,S	
	U-Factor		0.43	SHGC (N / <1 / >1)					0.30 / 0.27 / 0.24	VT (N / <1 / >1)		0.19 / 0.17 / 0.15	CR
146	4mm SCBZ Arg 270 4mm - 7/8"												
	0.154	0.563	0.157					ARG90	0.037(#3)		BZ	SS-D	N,G,S
	U-Factor		0.27	SHGC (N / <1 / >1)					0.14 / 0.13 / 0.12	VT (N / <1 / >1)		0.16 / 0.14 / 0.13	CR
147	4mm Arg 180 4mm - 7/8"												
	0.154	0.563	0.160					ARG90	0.068(#3)		CL	SS-D	N,G,S
	U-Factor		0.28	SHGC (N / <1 / >1)					0.56 / 0.51 / 0.45	VT (N / <1 / >1)		0.66 / 0.59 / 0.53	CR
148	4mm Arg 270 4mm - 7/8"												
	0.154	0.563	0.157					ARG90	0.037(#3)		CL	SS-D	N,G,S
	U-Factor		0.27	SHGC (N / <1 / >1)					0.38 / 0.34 / 0.31	VT (N / <1 / >1)		0.58 / 0.52 / 0.46	CR
149	4mm Arg 366 4mm - 7/8"												
	0.154	0.563	0.153					ARG90	0.022(#3)		CL	SS-D	N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)					0.33 / 0.30 / 0.27	VT (N / <1 / >1)		0.54 / 0.48 / 0.43	CR
150	4mm 270 Arg SCBZ 4mm - 7/8"												
	0.157	0.563	0.154					ARG90	0.037(#2)		BZ	SS-D	N,G,S
	U-Factor		0.27	SHGC (N / <1 / >1)					0.26 / 0.23 / 0.21	VT (N / <1 / >1)		0.16 / 0.14 / 0.13	CR

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
151	4mm 366 Arg 180 4mm - 7/8"											
	0.153	0.563	0.160					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.52 / 0.46 / 0.41		CR	61
152	4mm 270 Arg 270 4mm - 7/8"											
	0.157	0.563	0.157					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.28 / 0.25 / 0.23					VT (N / <1 / >1) 0.49 / 0.44 / 0.39		CR	61
153	5mm Arg 5mm - 7/8"											
	0.185	0.500	0.185					ARG90			CL	SS-D N,G,S
	U-Factor 0.43			SHGC (N / <1 / >1) 0.63 / 0.56 / 0.50					VT (N / <1 / >1) 0.68 / 0.61 / 0.54		CR	46
154	5mm 180 Arg 5mm - 7/8"											
	0.187	0.500	0.185					ARG90	0.068(#2)		CL	SS-D N,G,S
	U-Factor 0.27			SHGC (N / <1 / >1) 0.52 / 0.47 / 0.42					VT (N / <1 / >1) 0.65 / 0.58 / 0.52		CR	59
155	5mm 340 Arg 5mm - 7/8"											
	0.185	0.500	0.185					ARG90	0.028(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.15 / 0.14 / 0.13					VT (N / <1 / >1) 0.32 / 0.29 / 0.26		CR	60
156	5mm 270 Arg 5mm - 7/8"											
	0.197	0.500	0.185					ARG90	0.037(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.30 / 0.28 / 0.25					VT (N / <1 / >1) 0.58 / 0.52 / 0.46		CR	59
157	5mm 366 Arg 5mm - 7/8"											
	0.187	0.500	0.185					ARG90	0.022(#2)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.53 / 0.48 / 0.42		CR	60
158	5mm 180 Arg 5mm i89 - 7/8"											
	0.187	0.500	0.187					ARG90	0.068(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.23			SHGC (N / <1 / >1) 0.50 / 0.45 / 0.41					VT (N / <1 / >1) 0.64 / 0.57 / 0.51		CR	46
159	5mm 340 Arg 5mm i89 - 7/8"											
	0.185	0.500	0.187					ARG90	0.028(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.15 / 0.13 / 0.12					VT (N / <1 / >1) 0.31 / 0.28 / 0.25		CR	47
160	5mm 270 Arg 5mm i89 - 7/8"											
	0.197	0.500	0.187					ARG90	0.037(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor 0.22			SHGC (N / <1 / >1) 0.30 / 0.27 / 0.24					VT (N / <1 / >1) 0.56 / 0.50 / 0.45		CR	47

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC)					Visible Transmittance (VT)		Condensation Resistance	
				Grids (None / <1 / >=1)					Grids (None / <1 / >=1)			
161	5mm 366 Arg 5mm i89 - 7/8"											
	0.187	0.500	0.187					ARG90	0.022(#2) / 0.149(#4)		CL	SS-D N,G,S
	U-Factor		0.22	SHGC (N / <1 / >1)				0.23 / 0.20 / 0.19		VT (N / <1 / >1)		0.52 / 0.47 / 0.41
162	5mm BZ Arg 5mm - 7/8"											
	0.184	0.500	0.185					ARG90			BZ	SS-D N,G,S
	U-Factor		0.43	SHGC (N / <1 / >1)				0.47 / 0.42 / 0.38		VT (N / <1 / >1)		0.44 / 0.40 / 0.35
163	5mm GY Arg 5mm - 7/8"											
	0.184	0.500	0.185					ARG90			GY	SS-D N,G,S
	U-Factor		0.43	SHGC (N / <1 / >1)				0.42 / 0.38 / 0.34		VT (N / <1 / >1)		0.38 / 0.34 / 0.30
164	5mm BZ Arg 270 5mm - 7/8"											
	0.184	0.500	0.197					ARG90	0.037(#3)		BZ	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.27 / 0.25 / 0.22		VT (N / <1 / >1)		0.38 / 0.34 / 0.30
165	5mm GY Arg 270 5mm - 7/8"											
	0.184	0.500	0.197					ARG90	0.037(#3)		GY	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.25 / 0.23 / 0.20		VT (N / <1 / >1)		0.32 / 0.29 / 0.26
166	5mm Arg 180 5mm - 7/8"											
	0.185	0.500	0.187					ARG90	0.068(#3)		CL	SS-D N,G,S
	U-Factor		0.27	SHGC (N / <1 / >1)				0.55 / 0.50 / 0.45		VT (N / <1 / >1)		0.65 / 0.58 / 0.52
167	5mm Arg 270 5mm - 7/8"											
	0.185	0.500	0.197					ARG90	0.037(#3)		CL	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.38 / 0.34 / 0.31		VT (N / <1 / >1)		0.58 / 0.52 / 0.46
168	5mm Arg 366 5mm - 7/8"											
	0.185	0.500	0.187					ARG90	0.022(#3)		CL	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.32 / 0.29 / 0.26		VT (N / <1 / >1)		0.53 / 0.48 / 0.42
169	5mm 270 Arg 5mm BZ - 7/8"											
	0.197	0.500	0.184					ARG90	0.037(#2)		BZ	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.29 / 0.27 / 0.24		VT (N / <1 / >1)		0.38 / 0.34 / 0.30
170	5mm 270 Arg 5mm GY - 7/8"											
	0.197	0.500	0.184					ARG90	0.037(#2)		GY	SS-D N,G,S
	U-Factor		0.26	SHGC (N / <1 / >1)				0.29 / 0.26 / 0.24		VT (N / <1 / >1)		0.32 / 0.29 / 0.26

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
171	5mm 366 Arg 180 5mm - 7/8"											
	0.187	0.500	0.187					ARG90	0.022(#2) / 0.068(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.23 / 0.21 / 0.19					VT (N / <1 / >1) 0.51 / 0.46 / 0.41		CR	60
172	5mm 270 Arg 270 5mm - 7/8"											
	0.197	0.500	0.197					ARG90	0.037(#2) / 0.037(#3)		CL	SS-D N,G,S
	U-Factor 0.26			SHGC (N / <1 / >1) 0.28 / 0.25 / 0.23					VT (N / <1 / >1) 0.49 / 0.44 / 0.39		CR	60
173	6mm Arg 6mm - 7/8"											
	0.224	0.375	0.224					ARG90			CL	SS-D N
	U-Factor 0.44			SHGC (N) 0.60					VT (N) 0.67		CR	45
174	6mm Arg 6mm - 7/8"											
	0.224	0.375	0.224					ARG90			CL	SS-D G,S
	U-Factor 0.44			SHGC (<1 / >1) 0.54 / 0.49					VT (<1 / >1) 0.60 / 0.53		CR	45
175	6mm 180 Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90	0.068(#2)		CL	SS-D N
	U-Factor 0.28			SHGC (N) 0.51					VT (N) 0.64		CR	56
176	6mm 180 Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90	0.068(#2)		CL	SS-D G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.46 / 0.41					VT (<1 / >1) 0.58 / 0.51		CR	56
177	6mm 270 Arg 6mm - 7/8"											
	0.236	0.375	0.224					ARG90	0.037(#2)		CL	SS-D N
	U-Factor 0.27			SHGC (N) 0.30					VT (N) 0.57		CR	57
178	6mm 270 Arg 6mm - 7/8"											
	0.236	0.375	0.224					ARG90	0.037(#2)		CL	SS-D G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.28 / 0.25					VT (<1 / >1) 0.51 / 0.45		CR	57
179	6mm 366 Arg 6mm - 7/8"											
	0.225	0.375	0.224					ARG90	0.022(#2)		CL	SS-D N
	U-Factor 0.27			SHGC (N) 0.23					VT (N) 0.53		CR	57
180	6mm 366 Arg 6mm - 7/8"											
	0.225	0.375	0.224					ARG90	0.022(#2)		CL	SS-D G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.47 / 0.42		CR	57

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ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
181	6mm BZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	N
	U-Factor 0.44			SHGC (N) 0.43					VT (N) 0.40		CR 45	
182	6mm BZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	G,S
	U-Factor 0.44			SHGC (<1 / >1) 0.39 / 0.35					VT (<1 / >1) 0.36 / 0.32		CR 45	
183	6mm GY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	N
	U-Factor 0.44			SHGC (N) 0.39					VT (N) 0.33		CR 45	
184	6mm GY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	G,S
	U-Factor 0.44			SHGC (<1 / >1) 0.35 / 0.31					VT (<1 / >1) 0.30 / 0.27		CR 45	
185	6mm SCBZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	N
	U-Factor 0.44			SHGC (N) 0.26					VT (N) 0.16		CR 45	
186	6mm SCBZ Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		BZ	SS-D	G,S
	U-Factor 0.44			SHGC (<1 / >1) 0.24 / 0.21					VT (<1 / >1) 0.14 / 0.12		CR 45	
187	6mm SCGY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	N
	U-Factor 0.44			SHGC (N) 0.23					VT (N) 0.13		CR 45	
188	6mm SCGY Arg 6mm - 7/8"											
	0.223	0.375	0.224					ARG90		GY	SS-D	G,S
	U-Factor 0.44			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.12 / 0.10		CR 45	
189	6mm BZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	N
	U-Factor 0.27			SHGC (N) 0.26					VT (N) 0.34		CR 57	
190	6mm BZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.23 / 0.21					VT (<1 / >1) 0.30 / 0.27		CR 57	

NFRC 100/200/500 Summary Sheet 3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
191	6mm GY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	N
	U-Factor 0.27			SHGC (N) 0.23					VT (N) 0.28		CR 57	
192	6mm GY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.25 / 0.23		CR 57	
193	6mm SCBZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	N
	U-Factor 0.27			SHGC (N) 0.13					VT (N) 0.13		CR 57	
194	6mm SCBZ Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	BZ	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.12 / 0.11					VT (<1 / >1) 0.12 / 0.10		CR 57	
195	6mm SCGY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	N
	U-Factor 0.27			SHGC (N) 0.12					VT (N) 0.11		CR 57	
196	6mm SCGY Arg 270 6mm - 7/8"											
	0.223	0.375	0.236					ARG90	0.037(#3)	GY	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.11 / 0.10					VT (<1 / >1) 0.10 / 0.09		CR 57	
197	6mm Arg 180 6mm - 7/8"											
	0.224	0.375	0.223					ARG90	0.068(#3)	CL	SS-D	N
	U-Factor 0.28			SHGC (N) 0.54					VT (N) 0.64		CR 56	
198	6mm Arg 180 6mm - 7/8"											
	0.224	0.375	0.223					ARG90	0.068(#3)	CL	SS-D	G,S
	U-Factor 0.30			SHGC (<1 / >1) 0.48 / 0.43					VT (<1 / >1) 0.58 / 0.51		CR 56	
199	6mm Arg 270 6mm - 7/8"											
	0.224	0.375	0.236					ARG90	0.037(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.37					VT (N) 0.57		CR 57	
200	6mm Arg 270 6mm - 7/8"											
	0.224	0.375	0.236					ARG90	0.037(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.34 / 0.30					VT (<1 / >1) 0.51 / 0.45		CR 57	

NFRC 100/200/500 Summary Sheet

3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
201	6mm Arg 366 6mm - 7/8"											
	0.224	0.375	0.225					ARG90	0.022(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.32					VT (N) 0.53		CR 57	
202	6mm Arg 366 6mm - 7/8"											
	0.224	0.375	0.225					ARG90	0.022(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.29 / 0.26					VT (<1 / >1) 0.47 / 0.42		CR 57	
203	6mm Arg 340 6mm - 7/8"											
	0.224	0.375	0.224					ARG90	0.028(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.33					VT (N) 0.32		CR 57	
204	6mm Arg 340 6mm - 7/8"											
	0.224	0.375	0.224					ARG90	0.028(#3)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.30 / 0.27					VT (<1 / >1) 0.28 / 0.25		CR 57	
205	6mm 270 Arg 6mm BZ - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	N
	U-Factor 0.27			SHGC (N) 0.29					VT (N) 0.34		CR 57	
206	6mm 270 Arg 6mm BZ - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.26 / 0.24					VT (<1 / >1) 0.30 / 0.27		CR 57	
207	6mm 270 Arg 6mm GY - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	N
	U-Factor 0.27			SHGC (N) 0.29					VT (N) 0.28		CR 57	
208	6mm 270 Arg 6mm GY - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.26 / 0.23					VT (<1 / >1) 0.25 / 0.23		CR 57	
209	6mm 270 Arg SCBZ 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	N
	U-Factor 0.27			SHGC (N) 0.21					VT (N) 0.13		CR 57	
210	6mm 270 Arg SCBZ 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	BZ	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.12 / 0.11		CR 57	

NFRC 100/200/500 Summary Sheet

3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
211	6mm 270 Arg SCGY 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	N
	U-Factor 0.27			SHGC (N) 0.21					VT (N) 0.11		CR 57	
212	6mm 270 Arg SCGY 6mm - 7/8"											
	0.236	0.375	0.223					ARG90	0.037(#2)	GY	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.10 / 0.09		CR 57	
213	6mm 366 Arg 180 6mm - 7/8"											
	0.225	0.375	0.223					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.23					VT (N) 0.51		CR 57	
214	6mm 366 Arg 180 6mm - 7/8"											
	0.225	0.375	0.223					ARG90	0.022(#2) / 0.068(#3)	CL	SS-D	G,S
	U-Factor 0.28			SHGC (<1 / >1) 0.21 / 0.19					VT (<1 / >1) 0.45 / 0.40		CR 57	
215	6mm 270 Arg 270 6mm - 7/8"											
	0.236	0.375	0.236					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.28					VT (N) 0.48		CR 57	
216	6mm 270 Arg 270 6mm - 7/8"											
	0.236	0.375	0.236					ARG90	0.037(#2) / 0.037(#3)	CL	SS-D	G,S
	U-Factor 0.28			SHGC (<1 / >1) 0.25 / 0.23					VT (<1 / >1) 0.43 / 0.39		CR 57	
217	2mm 270 Arg 2mm Arg 2mm - 7/8"											
	0.087	0.297	0.087	0.297	0.087			ARG90	0.037(#2)	CL	SS-D	N
	U-Factor 0.25			SHGC (N) 0.29					VT (N) 0.55		CR 63	
218	2mm 270 Arg 2mm Arg 2mm - 7/8"											
	0.087	0.297	0.087	0.297	0.087			ARG90	0.037(#2)	CL	SS-D	G,S
	U-Factor 0.26			SHGC (<1 / >1) 0.26 / 0.24					VT (<1 / >1) 0.49 / 0.43		CR 63	
219	2mm 366 Arg 2mm 180 Arg 2mm i89 - 7/8"											
	0.087	0.297	0.087	0.297	0.087			ARG90	0.022(#2) / 0.068(#4) / 0.149(#6)	CL	SS-D	N
	U-Factor 0.18			SHGC (N) 0.20					VT (N) 0.47		CR 56	
220	2mm 366 Arg 2mm 180 Arg 2mm i89 - 7/8"											
	0.087	0.297	0.087	0.297	0.087			ARG90	0.022(#2) / 0.068(#4) / 0.149(#6)	CL	SS-D	G,S
	U-Factor 0.19			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.42 / 0.38		CR 56	

NFRC 100/200/500 Summary Sheet
3410 Picture Window

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
221	3mm 270 Arg 3mm Arg 3mm - 7/8"											
	0.118	0.250	0.118	0.250	0.118			ARG90	0.037(#2)	CL	SS-D	N
	U-Factor 0.27			SHGC (N) 0.29					VT (N) 0.54		CR 62	
222	3mm 270 Arg 3mm Arg 3mm - 7/8"											
	0.118	0.250	0.118	0.250	0.118			ARG90	0.037(#2)	CL	SS-D	G,S
	U-Factor 0.29			SHGC (<1 / >1) 0.26 / 0.24					VT (<1 / >1) 0.48 / 0.43		CR 62	
223	3mm 366 Arg 3mm 180 Arg 3mm i89 - 7/8"											
	0.117	0.250	0.118	0.250	0.117			ARG90	0.022(#2) / 0.068(#4) / 0.149(#6)	CL	SS-D	N
	U-Factor 0.19			SHGC (N) 0.20					VT (N) 0.47		CR 52	
224	3mm 366 Arg 3mm 180 Arg 3mm i89 - 7/8"											
	0.117	0.250	0.118	0.250	0.117			ARG90	0.022(#2) / 0.068(#4) / 0.149(#6)	CL	SS-D	G,S
	U-Factor 0.20			SHGC (<1 / >1) 0.19 / 0.17					VT (<1 / >1) 0.42 / 0.37		CR 52	

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 system opening.

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 Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy.

Intertek-ATI is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The values included in this report are not considered in compliance with ANSI/NFRC 100, ANSI/NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable.

Intertek-ATI will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Intertek-ATI for the entire test record retention period. The test record retention end date for this report is February 1, 2020.

Results obtained are simulated values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the product simulated. This report may not be reproduced, except in full, without the written approval of Intertek-ATI

For INTERTEK-ATI:

SIMULATED BY:

REVIEWED BY:

Emmett T. Houlihan
Simulation Technician
NFRC Certified Simulator

Andrew C. Walczak
Simulations Project Manager
Simulator-In-Responsible-Charge

ETH:eth

F3149.01-201-45

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Drawings and Bills of Material (11)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
01-R0	02/01/16	NA	Original report issue. Work requested by Mr. Blake Doll of Coeur d'Alene Window Company.



All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

Appendix A

F3149.01-201-45

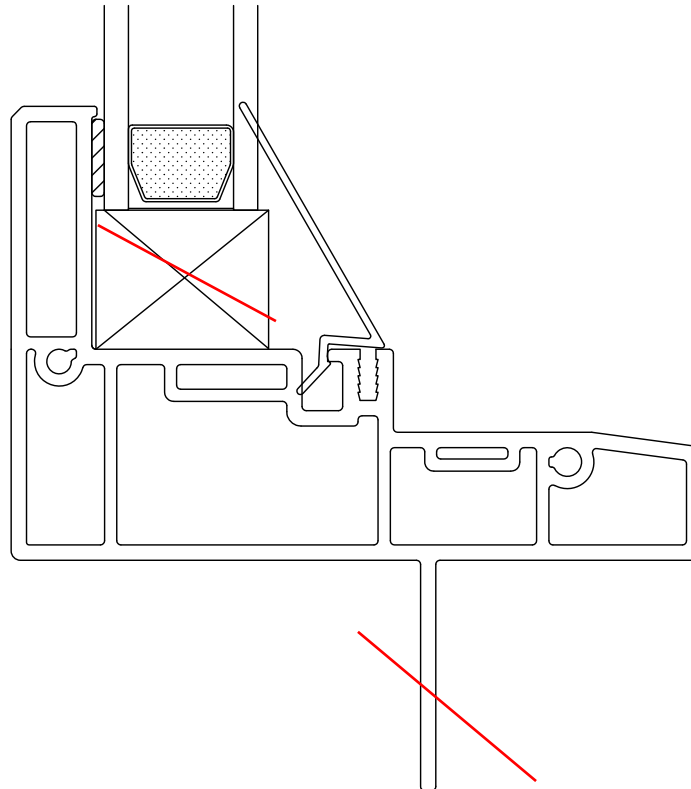
3400 Picture Window	
Part	Part #
Casement Fixed Frame	KE2010
Glazing Bead	KE2046
Setting Block	6152
Setting Block Glue	IPS-56-1021
Glazing Tape	VG1216W-FC515

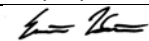


Report #: F3149.01-201-45

Date: 01/22/2016

Verified by:



	Report #:	F3149.01-201-45
	Date:	01/22/2016
	Verified by:	

CYCLOID
DESIGNS



DWG: 310-L4

DATE: 23-MAY-98

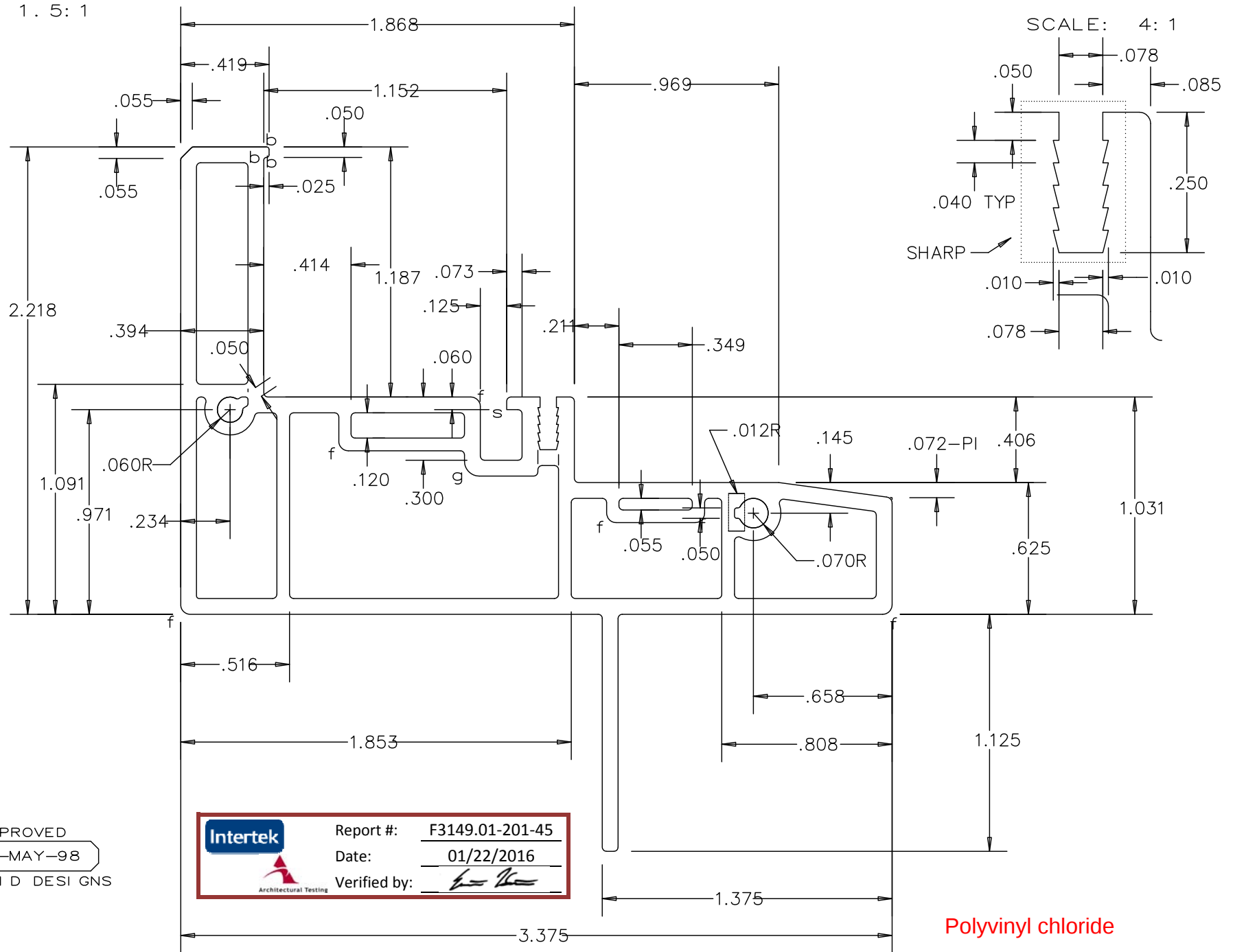
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WOODINVILLE, WASH
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EXTERNAL WALL: X.XXX
INTERNAL WALL: X.XXX
CORNER TYP: X.XXXR
WEIGHT: X.XXX LB/FT

TITLE: CASEMENT: FIXED SECTION

SCALE: 1.5: 1

a=0.006R
b=0.012R
c=0.015R
d=0.020R
e=0.030R
f=0.045R
g=0.060R
s=SHARP



APPROVED
23-MAY-98
CYCLOID DESIGNS

Intertek
Report #: F3149.01-201-45
Date: 01/22/2016
Verified by: *[Signature]*

Polyvinyl chloride

CYCLOID DESIGNS



DWG: 310-D1

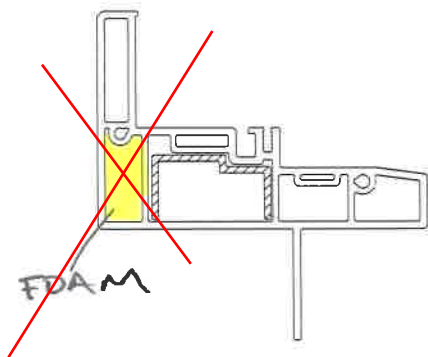
DATE: 07-MAY-98

TITLE: CASEMENT FRAME

KE2010

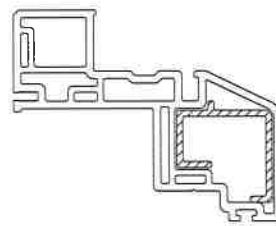
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EXTERNAL WALL: 0.075
INTERNAL WALL: 0.060
CORNER TYP: 0.020R
WEIGHT: 0.746 LB/FT



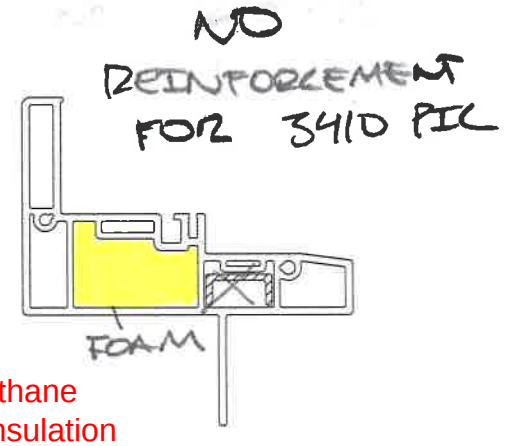
310-A1

$I_x - x = 0.005 \text{ in}^4$
 $I_y - y = 0.033 \text{ in}^4$
 $S_x = 0.052 \text{ in}^3$
 $Zeta = 3.55^\circ$
 $c = 0.631$
 AREA 0.156
 WT/FT 0.18

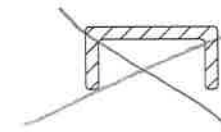


310-A2

$I_x - x = 0.016 \text{ in}^4$
 $I_y - y = 0.025 \text{ in}^4$
 $S_x = 0.047 \text{ in}^3$
 $Zeta = 25.9^\circ$
 $c = 0.527$
 AREA 0.181
 WT/FT 0.217



310-A3



AREA 0.077
 WT/FT 0.092

Intertek



Report #: F3149.01-201-45
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CYCLOID
DESIGNS



DWG: 310-A0

DATE: 23-MAY-98

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TYPICAL WALL: X.XXX
 CORNER TYP: X.XXX
 AREA: X.XXX IN²
 WEIGHT: X.XXX LB/FT
 ALLOY: 6063T6

TITLE: REINFORCING

SCALE: 4:1

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b=0.012R

c=0.015R

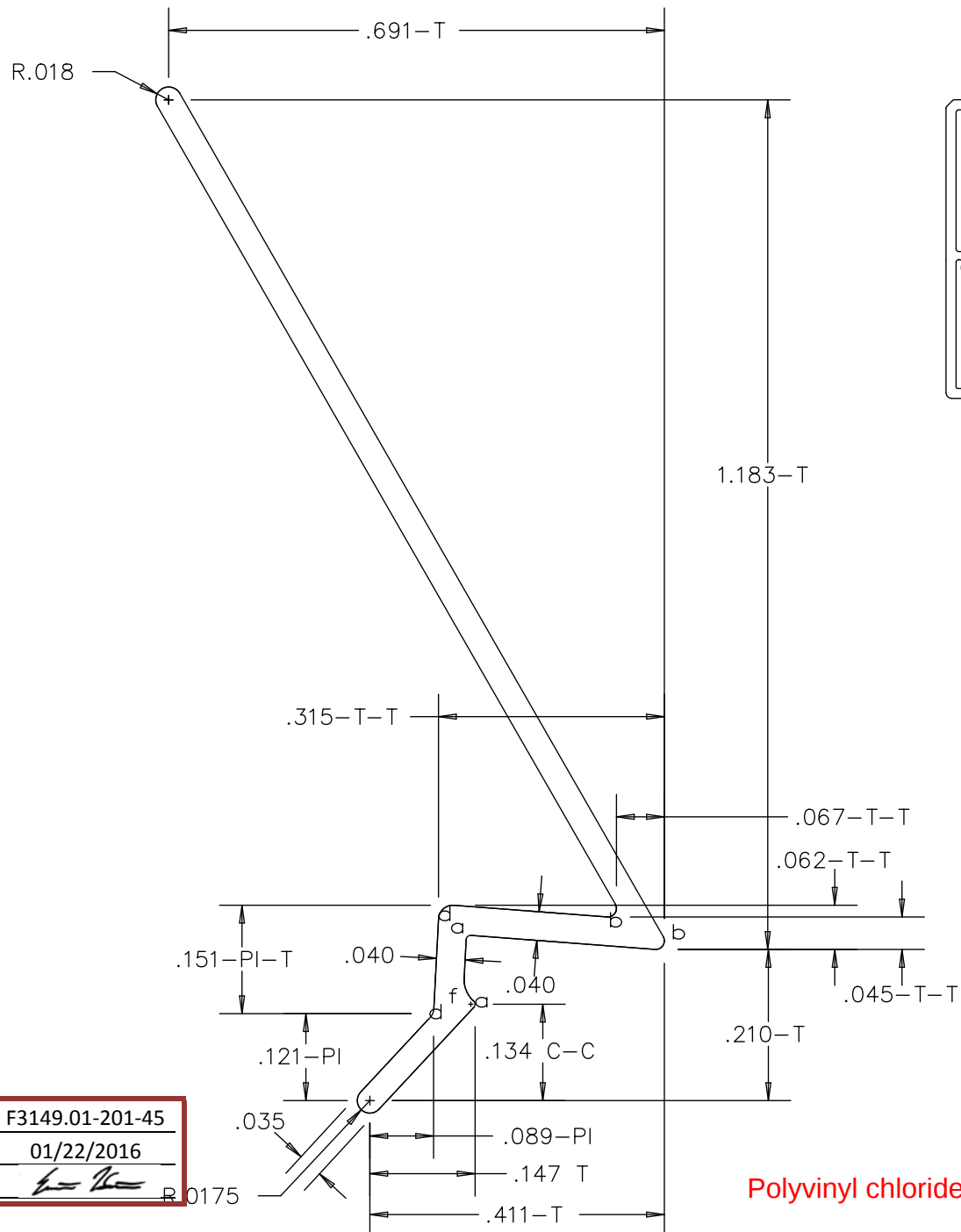
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e=0.030R

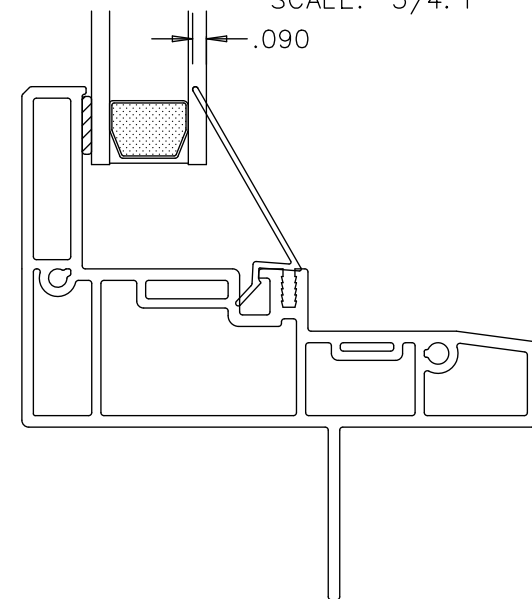
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g=0.060R

s=SHARP



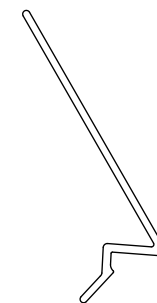
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APPROVED

29-JAN-99

CYCLOID DESIGNS



ACTUAL SIZE

Intertek



Report #: F3149.01-201-45

Date: 01/22/2016

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CYCLOID
DESIGNS



DWG: 310-D11

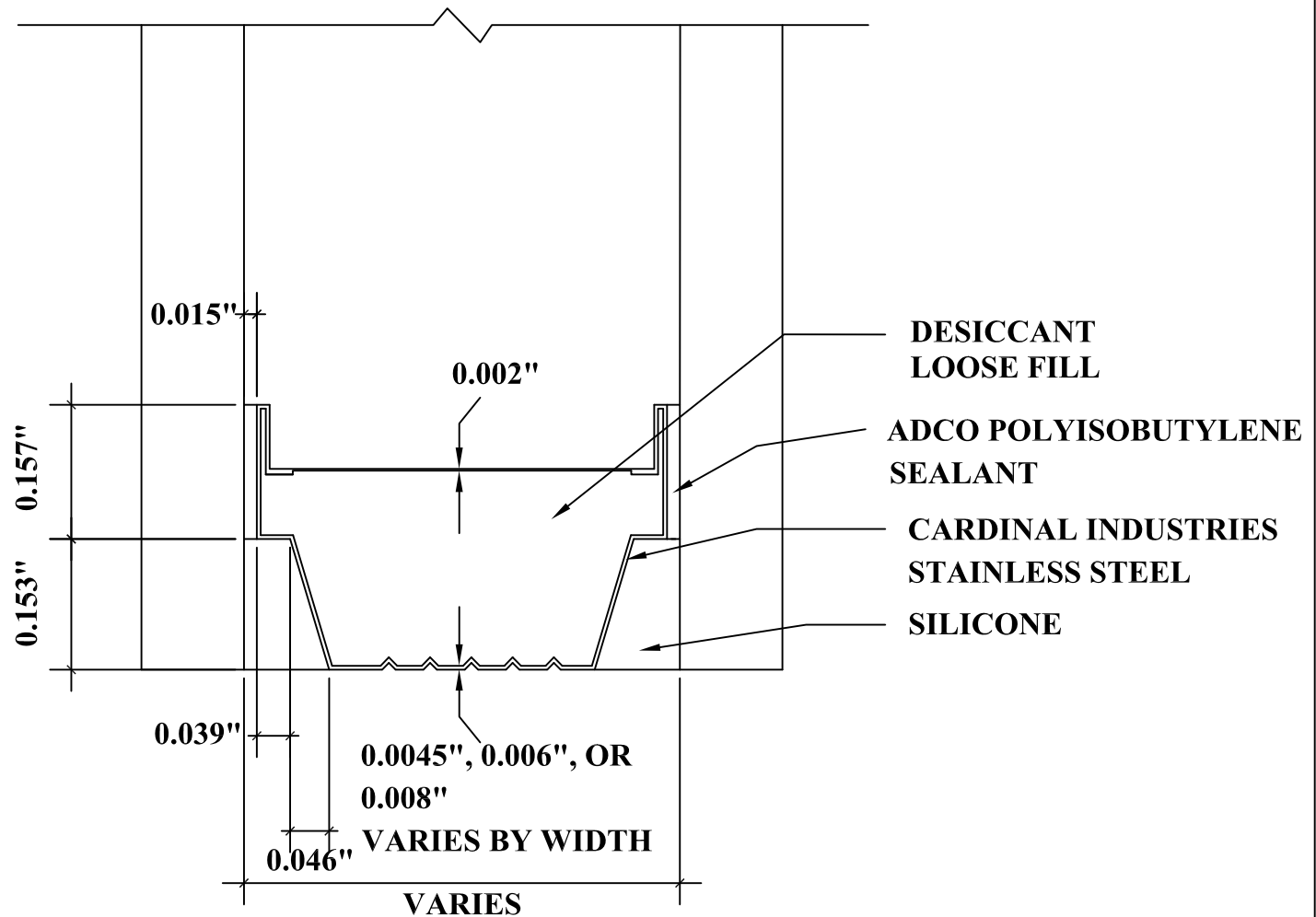
DATE: 28-JAN-99

TITLE: PW GLAZING BEAD .750 GLASS

KE2046

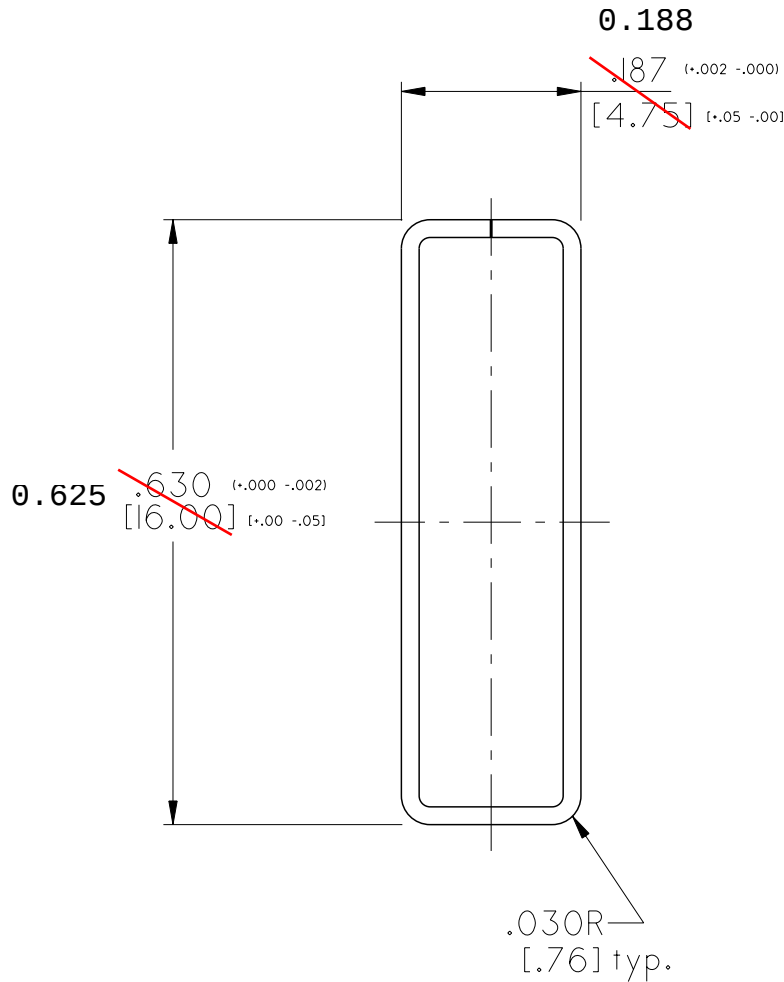
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EXTERNAL WALL: 0.XXX
INTERNAL WALL: 0.XXX
CORNER TYP: 0.XXXR
WEIGHT: 0.044 LB/FT



DETAIL FOR THERMAL MODELING OF
CARDINAL ENDUR SPACER (SS-D)

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



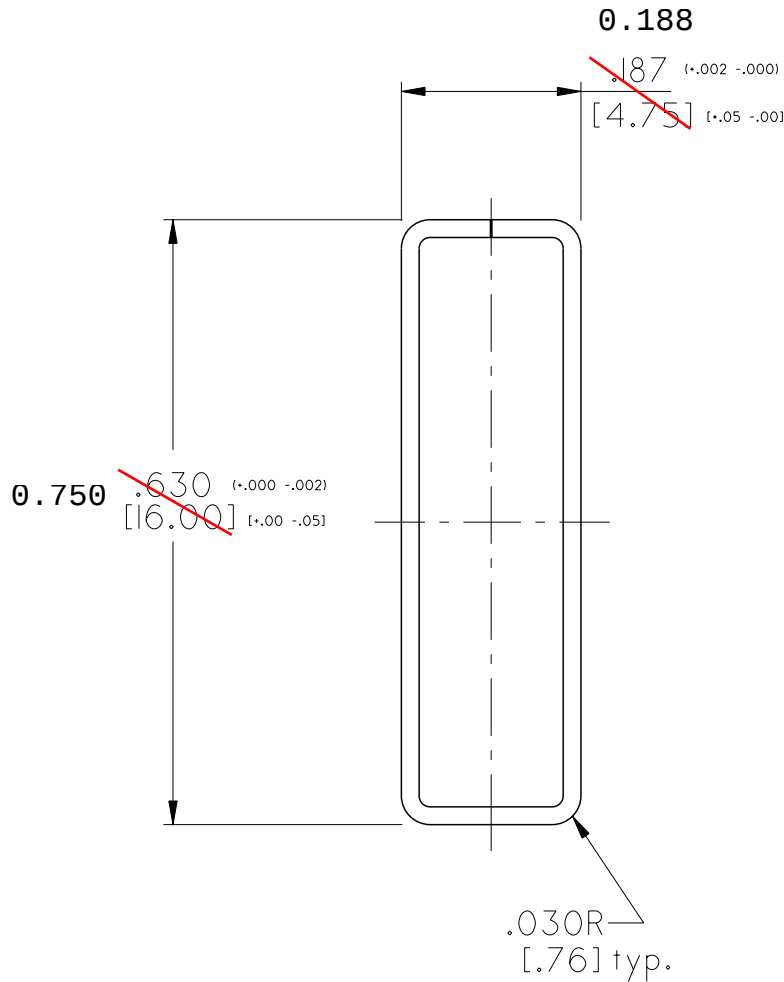
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	Date:	01/22/2016
	Verified by:	<i>[Signature]</i>

FILENAME:.. \MB\0185\316X58

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TOLERANCES EXCEPT AS NOTED		TITLE 3/16 x 5/8 MB (Muntin Bar)			DRN. BY <i>G. Matthews</i>	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATL. .0185 [.47mm] 3105-H24 Aluminum		FINISH ALL BUT ANODIZED		CK. BY
DECIMAL MM .XX .XXX ± .13 .06		SCALE 5:1		DATE 6/15/99		APPR. BY
ANGULAR ± 1°		DWG. NO. 1020101018XX140		S.O. NO.		

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



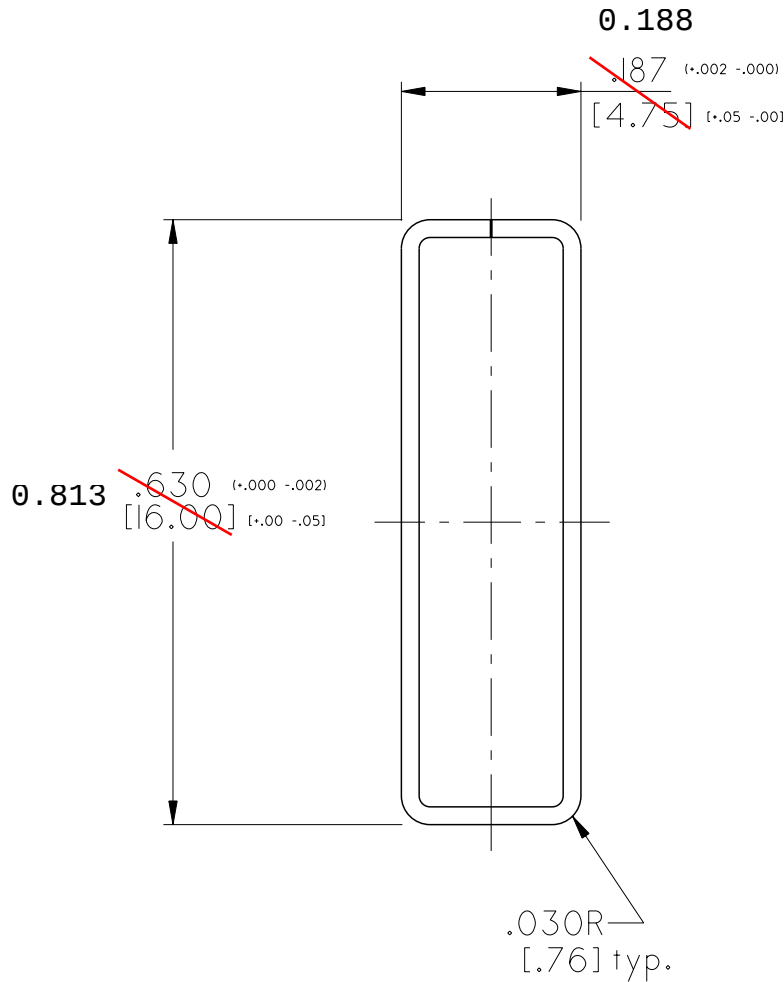
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TOLERANCES EXCEPT AS NOTED		TITLE 3/16 x 5/8 MB (Muntin Bar)			DRN. BY <i>G. Matthews</i>	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATL. .0185 [.47mm] 3105-H24 Aluminum		FINISH ALL BUT ANODIZED		CK. BY
DECIMAL MM .XX .XXX ± .13 .06		SCALE 5:1		DATE 6/15/99		APPR. BY
ANGULAR ± 1°		DWG. NO. 1020101018XX140		S.O. NO.		

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



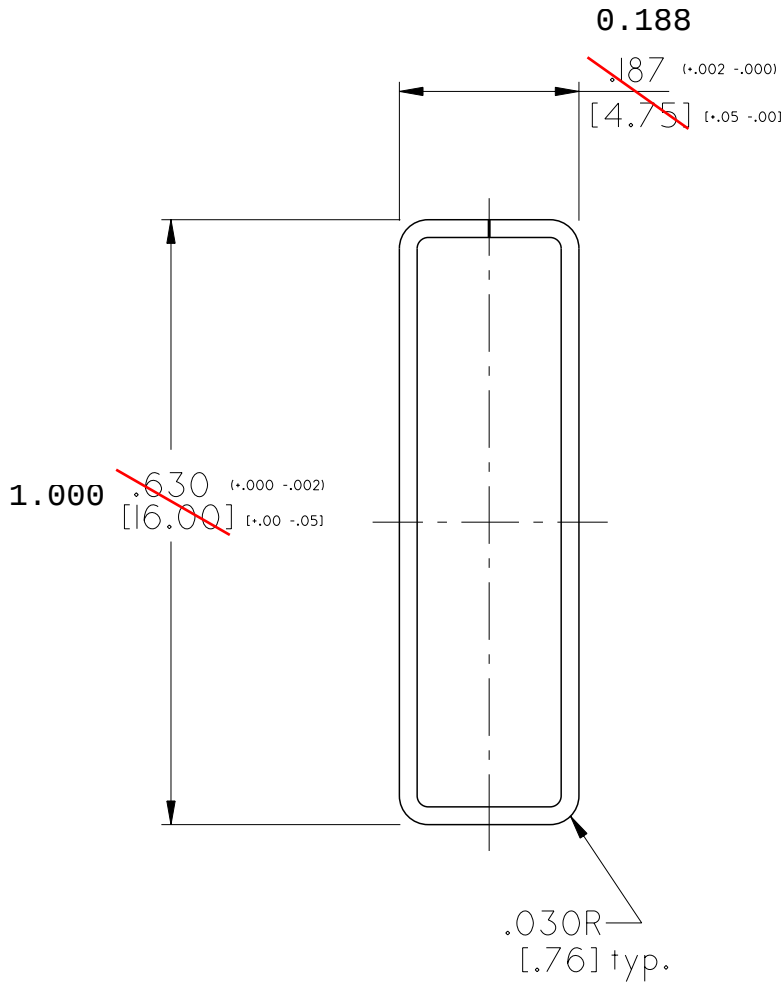
ACTUAL PART
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TOLERANCES EXCEPT AS NOTED		TITLE 3/16 x 5/8 MB (Muntin Bar)			DRN. BY <i>G. Matthews</i>	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATL. .0185 [.47mm] 3105-H24 Aluminum		FINISH ALL BUT ANODIZED		CK. BY
DECIMAL MM .XX .XXX ± .13 .06		SCALE 5:1		DATE 6/15/99		APPR. BY
ANGULAR ± 1°		DWG. NO. 1020101018XX140		S.O. NO.		

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



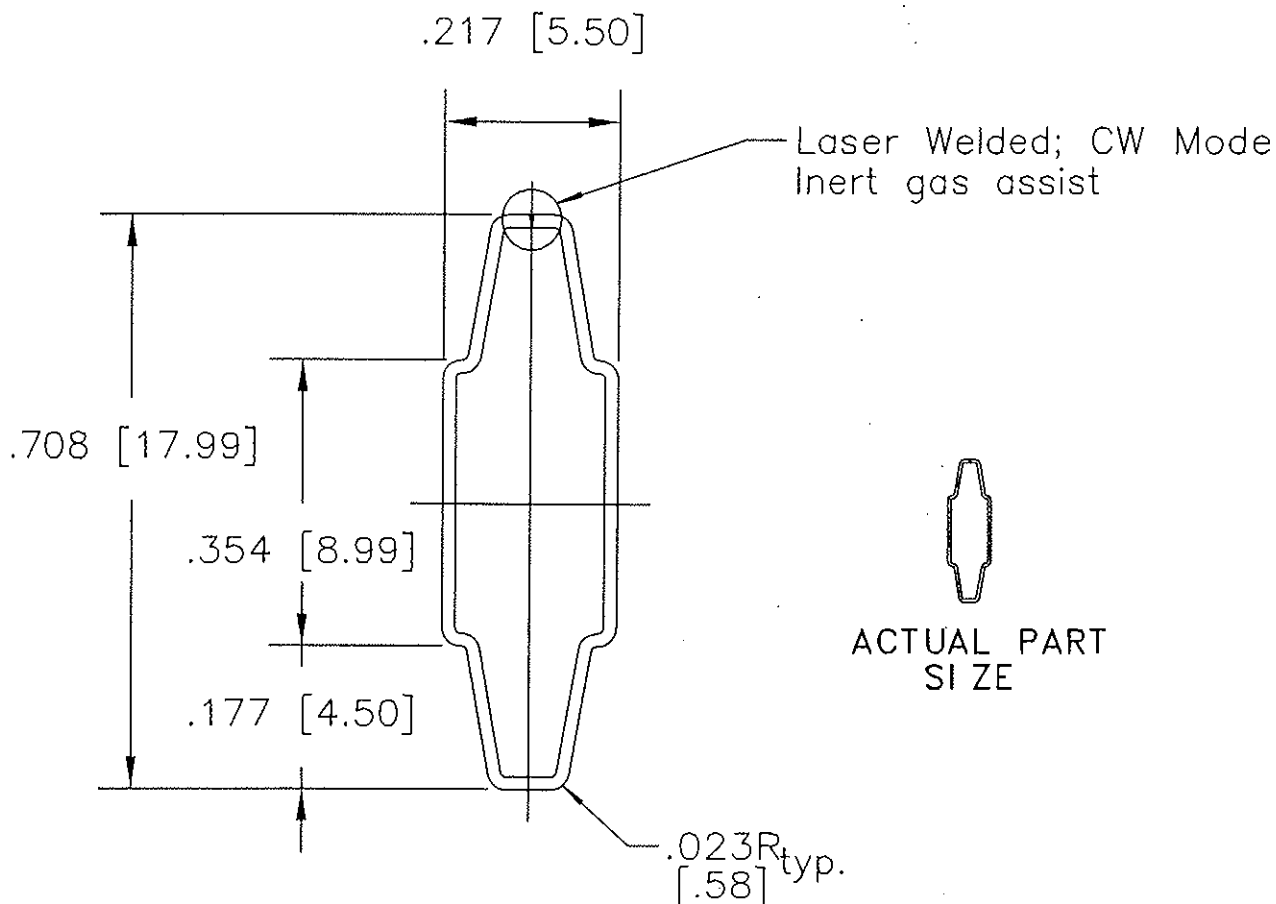
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SIZE

	Report #:	F3149.01-201-45
	Date:	01/22/2016
	Verified by:	<i>[Signature]</i>

FILENAME:.. \MB\0185\316X58

DATE	SYM.	REVISION		AUTH.	DRN.	CK.
			INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.			
TOLERANCES EXCEPT AS NOTED		TITLE 3/16 x 5/8 MB (Muntin Bar)			DRN. BY <i>G. Matthews</i>	
DECIMAL INCHES .XX .XXX .XXXX $\pm .01 .005 .0002$		MATL. .0185 [.47mm] 3105-H24 Aluminum		FINISH ALL BUT ANODIZED		CK. BY
DECIMAL MM .XX .XXX $\pm .13 .06$		SCALE 5:1		DATE 6/15/99		APPR. BY
ANGULAR $\pm 1^\circ$		DWG. NO. 1020101018XX140		S.O. NO.		

NOTE: ALL DIMENSIONS IN [] BRACKETS ARE MM UNLESS NOTED



	Report #:	F3149.01-201-45
	Date:	01/22/2016
	Verified by:	

4/17/97		Weld note changed, Title block changed		GRM	
12/9/92		Initial Release		GRM	
DATE	SYM.	REVISION	AUTH.	DRN.	CK.
		INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.			
TOLERANCES EXCEPT AS NOTED		TITLE		DRN. BY G. Matthews	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		5.5 x 18mm Contour Muntin Bar (CMB)		CK. BY	
DECIMAL MM .XX .XXX ± .13 .06		MATL. .016" [.41mm] 3105 Aluminum		APPR. BY	
ANGULAR ± 1°		FINISH FULL RANGE (MILL, ANOD., PAINTED)		S.O. NO.	
SCALE 4:1		DATE 4/17/97		DWG. NO. 1020301010XX255	

FILENAME: CMB5518J