Intertek | Architectural Testing

AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

CR LAURENCE CO., INC.

SERIES/MODEL: StormWall XL Curtain Wall
TYPE: Glazed Wall System

Report No: **C2680.05-116-45**
Report Date: **10/14/2016**

130 Derry Court
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AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

CR LAURENCE CO., INC.
2503 East Vernon Avenue
Los Angeles, California 90058

Report No:	C2680.05-116-45
Report Date:	10/14/2016
Simulation Date:	11/27/2012

Project Summary:

Architectural Testing, Inc., an Intertek company (Intertek-ATI), was contracted by CR Laurence CO., Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the StormWall XL Curtain Wall Glazed Wall System. The thermal performance ratings were determined in accordance with AAMA 507-15, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings.

Reference Documents:

AAMA 507-15, *Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings*

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*

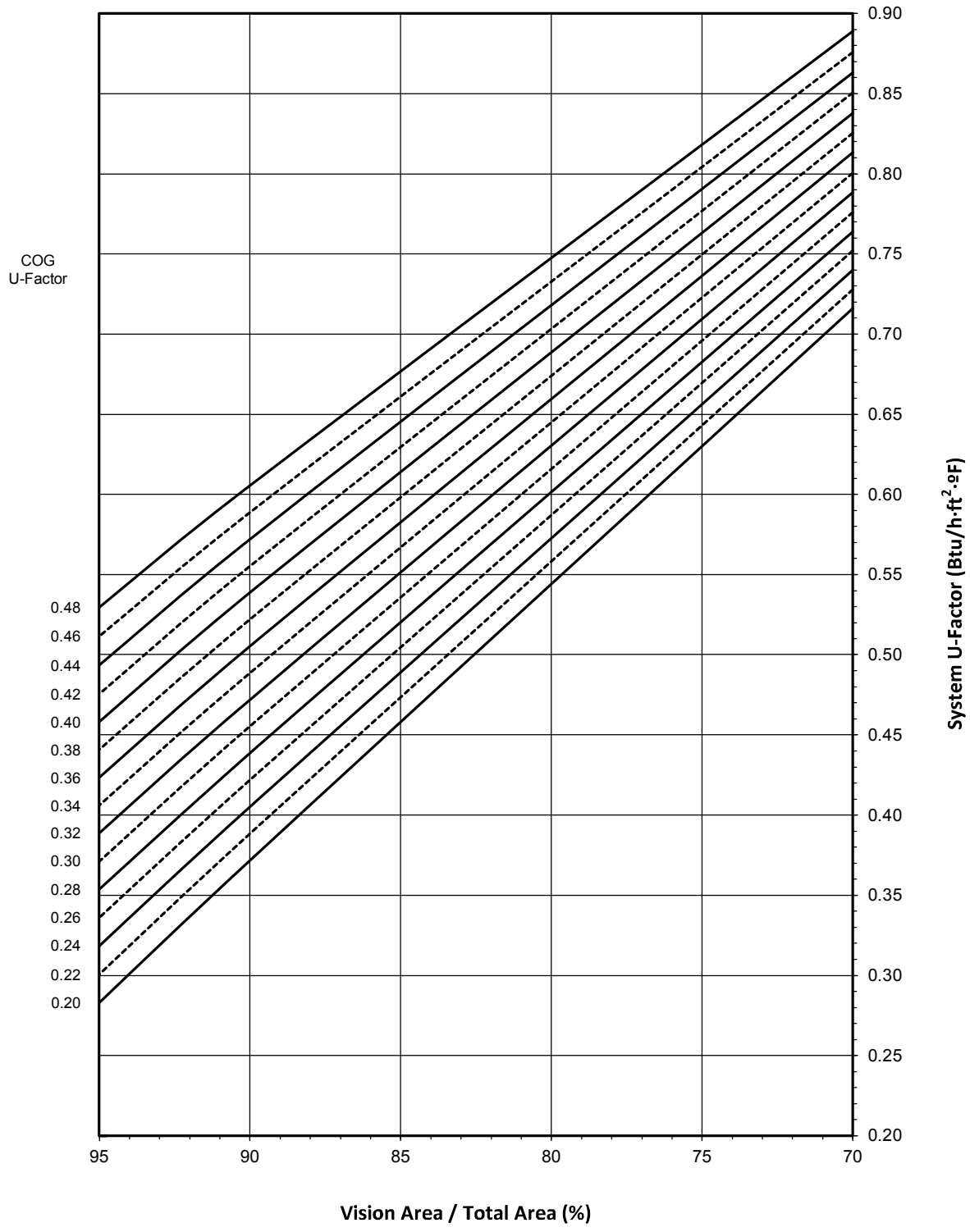
Simulation Specimen Description:

Series/Model:	StormWall XL Curtain Wall
Type:	Glazed Wall System
Frame Material:	Aluminum Thermally Broken Framing System
Material Finish:	Painted Aluminum
Specimen Size:	2000mm wide by 2000mm high (78-3/4" by 78-3/4")
Configuration:	Two vision lites separated by one intermediate vertical
Drawing Reference:	Oldcastle Drawing RELIANCE STORMMAX, dated 5/4/12

CR Laurence CO., Inc.

StormWall XL Curtain Wall - Glazed Wall System

System U-Factor vs. Percentage of Vision Area

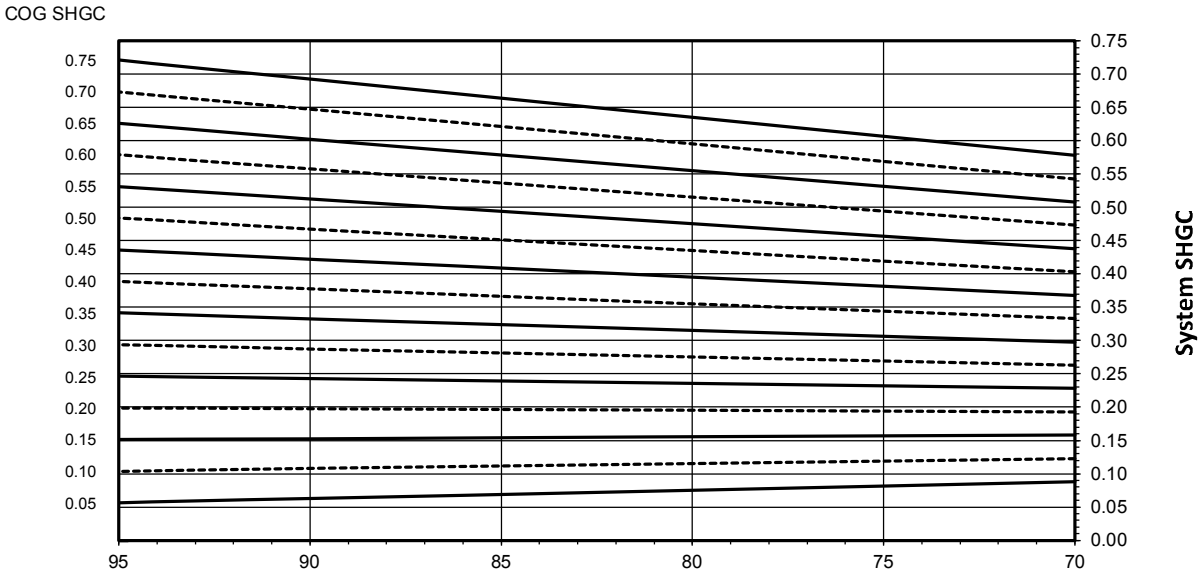


Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer

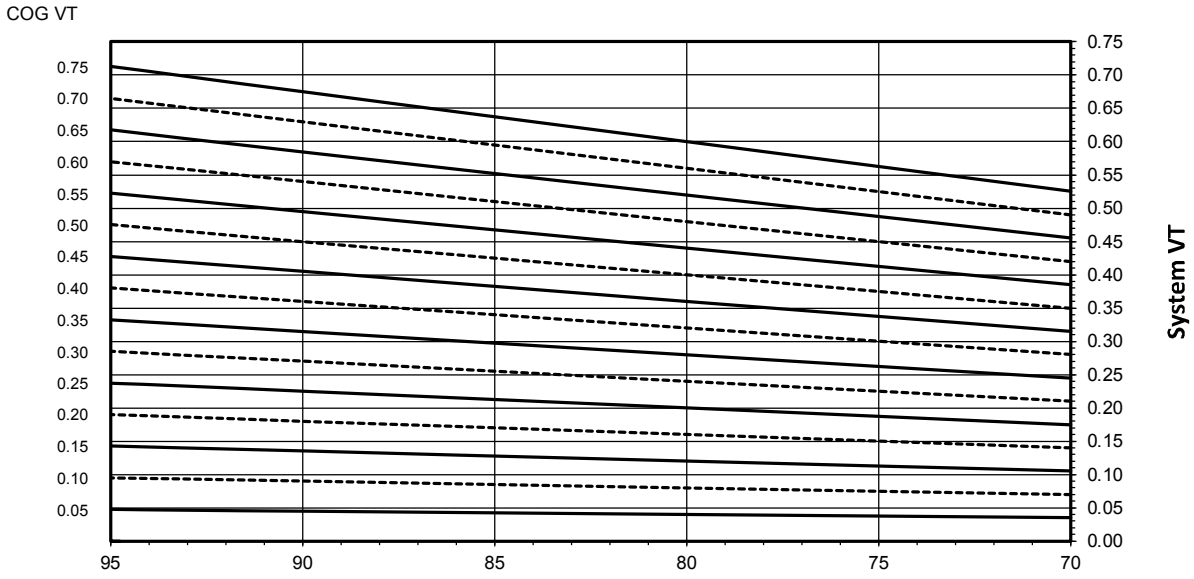
CR Laurence CO., Inc.

StormWall XL Curtain Wall - Glazed Wall System

System SHGC vs. Percentage of Vision Area



System VT vs. Percentage of Vision Area



CR Laurence CO., Inc.
StormWall XL Curtain Wall - Glazed Wall System

Size Specific U-Factor Matrix*

Glazing Option	Center of Glass U-Factor	Overall U-Factor
1	0.48	0.61
2	0.46	0.59
3	0.44	0.58
4	0.42	0.56
5	0.40	0.54
6	0.38	0.53
7	0.36	0.51
8	0.34	0.49
9	0.32	0.48
10	0.30	0.46
11	0.28	0.44
12	0.26	0.43
13	0.24	0.41
14	0.22	0.39
15	0.20	0.38

Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer

CR Laurence CO., Inc.
StormWall XL Curtain Wall - Glazed Wall System

Size Specific SHGC Matrix*

Center of Glass SHGC	Overall SHGC
0.75	0.69
0.70	0.65
0.65	0.60
0.60	0.56
0.55	0.51
0.50	0.47
0.45	0.42
0.40	0.38
0.35	0.33
0.30	0.29
0.25	0.24
0.20	0.20
0.15	0.15
0.10	0.11
0.05	0.06

Size Specific VT Matrix*

Center of Glass VT	Overall VT
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.54
0.55	0.49
0.50	0.45
0.45	0.40
0.40	0.36
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04

*Size Specific U-Factor, SHGC, and VT Matrices are based on the standard Glazed Wall System specimen size of 2000mm wide by 2000mm high (78-3/4" by 78-3/4"). This represents 89.8% Vision Area / Total Area.

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							70% Vision Area	*NFRC 100-2010*	*95% Vision Area*
							25.52" by 25.52"	*78.74" by 78.74"*	*163.19" by 163.19"*
1	0.48	43.7	Head	1.3750	1.8884	0.4414	0.8888	0.6091	0.5296
			L. Jamb	1.3750	1.8949	0.4351			
			R. Jamb	1.3750	1.8951	0.4423			
			Mullion	2.7500	1.8950	0.4387			
			Sill	1.3750	1.8888	0.4413			
2	0.46	44.8	Head	1.3750	1.8846	0.4272	0.8759	0.5924	0.5116
			L. Jamb	1.3750	1.8909	0.4210			
			R. Jamb	1.3750	1.8911	0.4281			
			Mullion	2.7500	1.8910	0.4245			
			Sill	1.3750	1.8849	0.4272			
3	0.44	45.8	Head	1.3750	1.8808	0.4132	0.8631	0.5757	0.4936
			L. Jamb	1.3750	1.8870	0.4069			
			R. Jamb	1.3750	1.8873	0.4141			
			Mullion	2.7500	1.8871	0.4105			
			Sill	1.3750	1.8812	0.4131			
4	0.42	46.8	Head	1.3750	1.8772	0.3992	0.8505	0.5590	0.4755
			L. Jamb	1.3750	1.8833	0.3929			
			R. Jamb	1.3750	1.8836	0.4001			
			Mullion	2.7500	1.8834	0.3965			
			Sill	1.3750	1.8776	0.3992			
5	0.40	47.9	Head	1.3750	1.8737	0.3854	0.8379	0.5423	0.4582
			L. Jamb	1.3750	1.8798	0.3791			
			R. Jamb	1.3750	1.8800	0.3863			
			Mullion	2.7500	1.8799	0.3827			
			Sill	1.3750	1.8741	0.3853			
6	0.38	48.9	Head	1.3750	1.8704	0.3716	0.8254	0.5257	0.4410
			L. Jamb	1.3750	1.8763	0.3653			
			R. Jamb	1.3750	1.8765	0.3725			
			Mullion	2.7500	1.8764	0.3689			
			Sill	1.3750	1.8707	0.3716			
7	0.36	50.0	Head	1.3750	1.8671	0.3580	0.8129	0.5091	0.4237
			L. Jamb	1.3750	1.8730	0.3517			
			R. Jamb	1.3750	1.8731	0.3589			
			Mullion	2.7500	1.8730	0.3553			
			Sill	1.3750	1.8675	0.3580			
8	0.34	51.0	Head	1.3750	1.8640	0.3444	0.8006	0.4924	0.4063
			L. Jamb	1.3750	1.8698	0.3381			
			R. Jamb	1.3750	1.8698	0.3453			
			Mullion	2.7500	1.8698	0.3417			
			Sill	1.3750	1.8643	0.3444			
9	0.32	52.0	Head	1.3750	1.8609	0.3309	0.7883	0.4758	0.3889
			L. Jamb	1.3750	1.8666	0.3246			
			R. Jamb	1.3750	1.8667	0.3318			
			Mullion	2.7500	1.8667	0.3282			
			Sill	1.3750	1.8613	0.3309			

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							70% Vision Area 25.52" by 25.52"	*NFRC 100-2010* 78.74" by 78.74"	*95% Vision Area* 163.19" by 163.19"
10	0.30	53.1	Head	1.3750	1.8577	0.3175	0.7760	0.4591	0.3714
			L. Jamb	1.3750	1.8633	0.3111			
			R. Jamb	1.3750	1.8633	0.3183			
			Mullion	2.7500	1.8633	0.3147			
			Sill	1.3750	1.8580	0.3174			
11	0.28	54.2	Head	1.3750	1.8548	0.3041	0.7638	0.4424	0.3538
			L. Jamb	1.3750	1.8603	0.2978			
			R. Jamb	1.3750	1.8603	0.3050			
			Mullion	2.7500	1.8603	0.3014			
			Sill	1.3750	1.8551	0.3041			
12	0.26	55.2	Head	1.3750	1.8524	0.2909	0.7519	0.4258	0.3363
			L. Jamb	1.3750	1.8579	0.2846			
			R. Jamb	1.3750	1.8578	0.2918			
			Mullion	2.7500	1.8578	0.2882			
			Sill	1.3750	1.8527	0.2909			
13	0.24	56.3	Head	1.3750	1.8497	0.2777	0.7399	0.4091	0.3186
			L. Jamb	1.3750	1.8551	0.2714			
			R. Jamb	1.3750	1.8550	0.2785			
			Mullion	2.7500	1.8551	0.2750			
			Sill	1.3750	1.8501	0.2777			
14	0.22	57.3	Head	1.3750	1.8471	0.2646	0.7279	0.3925	0.3009
			L. Jamb	1.3750	1.8525	0.2582			
			R. Jamb	1.3750	1.8524	0.2654			
			Mullion	2.7500	1.8524	0.2618			
			Sill	1.3750	1.8474	0.2645			
15	0.20	58.4	Head	1.3750	1.8446	0.2515	0.7160	0.3758	0.2833
			L. Jamb	1.3750	1.8499	0.2451			
			R. Jamb	1.3750	1.8498	0.2523			
			Mullion	2.7500	1.8498	0.2487			
			Sill	1.3750	1.8450	0.2514			

This report is reissued into the name of CR Laurence Co., Inc. through written aurthorization of Oldcastle BuildingEnvelope, to whom the original report was rendered. The original Oldcastle BuildingEnvelope report number is #C2680.01-116-45.

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 November 27, 2017.

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:

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Digitally Signed by: Kristen Louder

Kristen L. Louder
Senior Simulation Technician

REVIEWED BY:

Michael J. Thoman

Digitally Signed by: Michael J. Thoman

Kevin S. Louder
Manager - Thermal Testing & Simulations

KLL:KLL
C2680.05-116-45

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Drawings and Bills of Material (9)

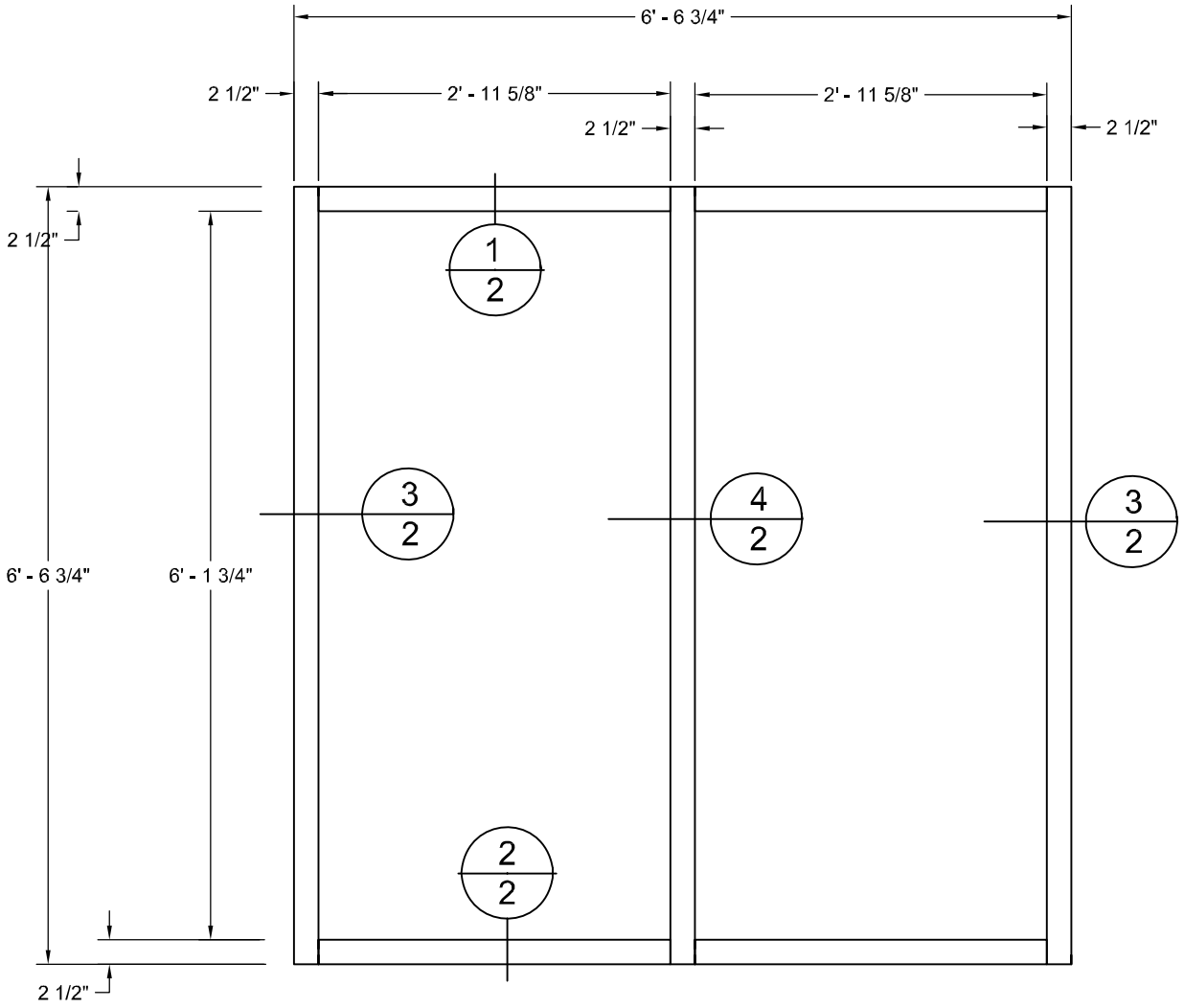
Revision Log

Rev. #	Date	Page(s)	Revision(s)
.05R0	10/14/16	All	Original Report Issue - Reissue of Report No. C2680.01-116-45 in the name of CR Laurence CO., Inc.

All drawings and Bills of Material used in simulating this product are enclosed in this Appendix.

Appendix A

C2680.05-116-45



GENERAL TEST INFORMATION

AAMA 507 SIMULATIONS
AAMA 1503
NFRC 100
NFRC 100, 200, 500 SIMULATIONS

GLAZING SCHEDULE

GLASS COMPOSITION	MANUFACTURER NAME
1 5/16" STORMGLASS INSULATED GLASS CONSISTING OF 1/4" TEMP - 1/2" AIR SPACE - 1/4" H.S. .075 INTERLAYER - 1/4" H.S.	VANCEVA STORMGLASS

BILL OF MATERIAL

QTY	PART NO.	DESCRIPTION	LENGTH	NOTES
EXTRUSIONS				
	XL500-BP	Vertical/Jamb	78 3/4"	
	XL162-BP	Pressure Plate	78 3/4"	
	XL110-BP	Face Cap	78 3/4"	
	XL500-BP	Mullion	35 5/8"	
	XL162-BP	Pressure Plate	35 3/8"	
	XL110-BP	Face Cap	35 9/16"	

ACCESSORIES	
XLSB-2102	Setting Block
XLF-009	#14 x 1 1/2" HH
XLC-325	#12 - 14 x 1 1/2" HWH Elco Drill Flex
XLF-118	#10 x 1" PFH
XLB-183-01	Shear Block
XLG-117	Exterior Gasket
XLG-107	Isolator Gasket
XLG-5185	Interior Spacer Gasket

C.R.LAURENCE CO.
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www.crlaurence.com

DRAWN BY: CH | APPROVED BY: | SCALE: FULL SIZE | DATE: 07/06/16 | EXTRUSION BASE PART NO.: XL

PART DESCRIPTION: STORMWALL XL ELEVATION | DWG #: ELEVATION

BRAND: US ALUMINUM

NOTES: THERMAL TEST DRAWINGS

REV	DESCRIPTION	DATE	APPD

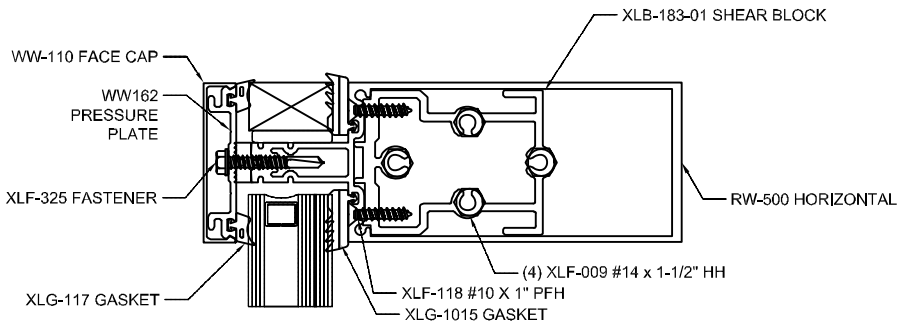
UNLESS OTHERWISE SPECIFIED:
ANSI/B4.1-2009 TOLERANCES FOR
ALUMINUM EXTRUSIONS APPLY

UNSPECIFIED CORNER RAD: IN.
UNSPECIFIED WALL THICKNESS: IN.

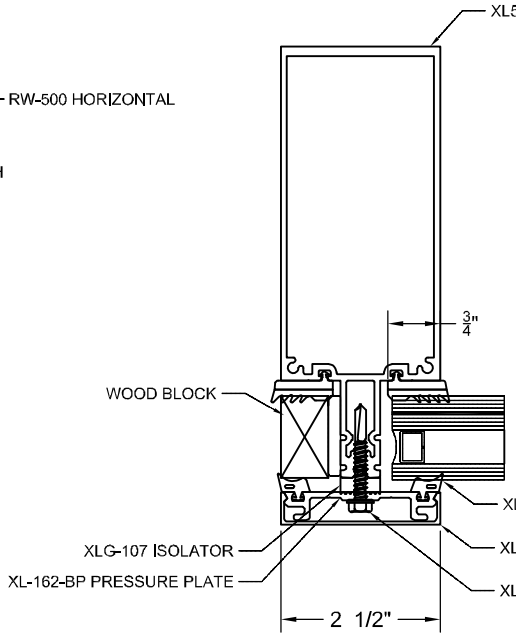
IDENTIFIES CRITICAL CHARACTERISTICS FOR CRL INSPECTION

IDENTIFIES EXPOSED AREA

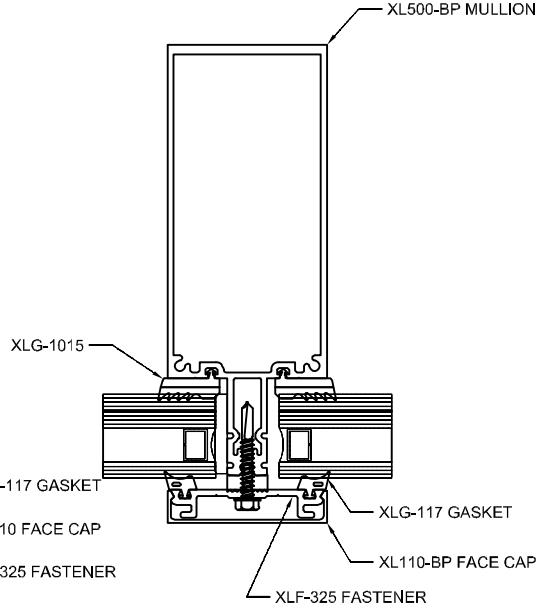
ALLOY & TEMPER: 6063-T6 | SQ. IN.
ESTIMATED AREA: | LB
ESTIMATED WEIGHT / FT: | IN.
ESTIMATED PERIMETER: | IN. | OUT_PER: | IN.
EXP/PAINTED PER: | IN.
CLASS: | CIRC. E. SIZE: | IN.
SECTION PROPERTIES: IN.^4 | IN.^3
IN.^4 | IN.^3



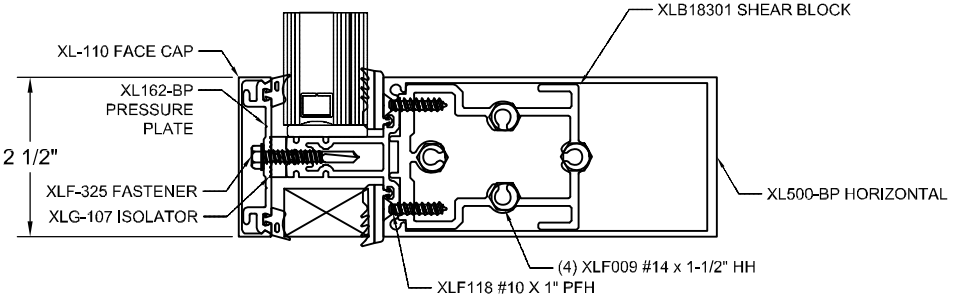
1 HORIZONTAL



3 JAMB



4 MULLION



2 HORIZONTAL

C.R.LAURENCE CO.
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DRAWN BY: CH
APPROVED BY:
SCALE: FULL SIZE
DATE: 07/06/16
EXTRUSION BASE PART NO: XL

PART DESCRIPTION: STORMWALL XL CROSS SECTIONS
BRAND: US ALUMINUM
NOTES: THERMAL TEST DRAWINGS
PAGE #:

REV	DESCRIPTION	DATE	APPD

THE DRAWING AND THE DESIGN SHOWN THEREON IS THE PROPERTY OF C.R.LAURENCE CO., INC. AND USE OR COPIES THEREOF CANNOT BE MADE WITHOUT WRITTEN CONSENT.

UNLESS OTHERWISE SPECIFIED: ANSI H35.2-2007 TOLERANCES FOR ALUMINUM EXTRUSIONS APPLY
UNSPECIFIED CORNER RAD: IN.
UNSPECIFIED WALL THICKNESS: IN.

IDENTIFIES CRITICAL CHARACTERISTICS FOR CRL INSPECTION
IDENTIFIES EXPOSED AREA

ALLOY & TEMPER: 6063-T6
ESTIMATED AREA: 2.08 SQ. IN.
ESTIMATED WEIGHT / FT: 2.85 LB
ESTIMATED PERIMETER: IN.
EXP PAINTED PER: IN. OUT_PER: IN.
CLASS: CIRCLE SIZE: IN.
SECTION PROPERTIES:
Ix: IN.4 Sx: IN.3
Iy: IN.4 Sy: IN.3