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AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

CR LAURENCE CO., INC.

SERIES/MODEL: 45X-High Performance Dual Thermally Broken Storefront
TYPE: Glazed Wall System

Report No: F4785.03-116-45
Report Date: 04/27/16

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AAMA 507-15 THERMAL PERFORMANCE REPORT

Rendered to:

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

Report No:	F4785.03-116-45
Simulation Date:	03/16/16
Report Date:	04/27/16

Project Summary:

Architectural Testing, Inc., a subsidiary of Intertek (Intertek-ATI), was contracted by CR Laurence Co., Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the 45X-High Performance Dual Thermally Broken Storefront 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

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*

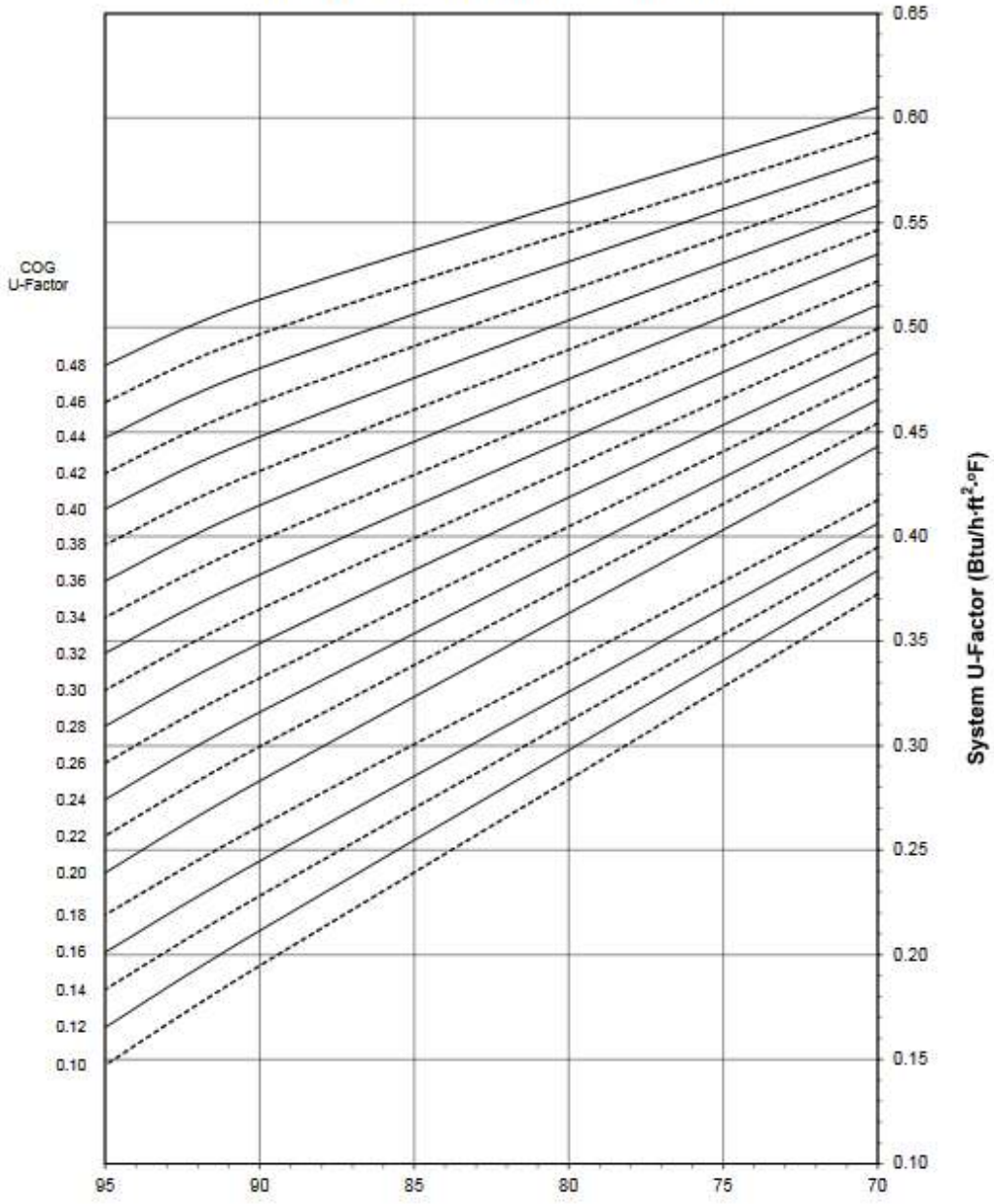
Simulation Specimen Description:

Series/Model:	45X-High Performance Dual Thermally Broken Storefront
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

CR Laurence Co., Inc.

45X-High Performance Dual Thermally Broken Storefront - Glazed Wall System

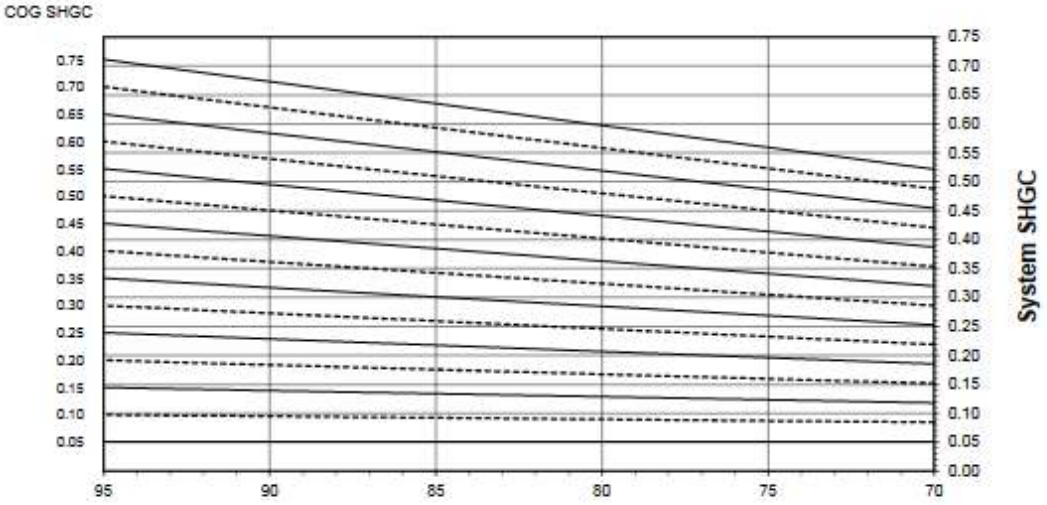
System U-Factor vs. Percentage of Vision Area



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

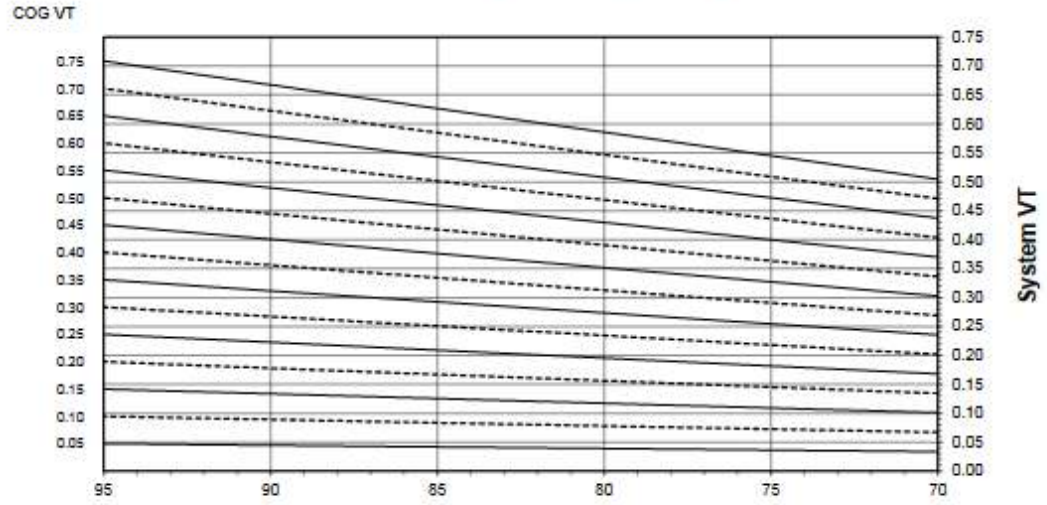
CR Laurence Co., Inc.
45X-High Performance Dual Thermally Broken Storefront - Glazed Wall System

System SHGC vs. Percentage of Vision Area



Vision Area / Total Area (%)

System VT vs. Percentage of Vision Area



Vision Area / Total Area (%)

CR Laurence Co., Inc.
45X-High Performance Dual Thermally Broken Storefront - Glazed Wall System

Size Specific U-Factor Matrix*

Glazing Option	Center of Glass U-Factor	Overall U-Factor
1	0.48	0.51
2	0.46	0.50
3	0.44	0.48
4	0.42	0.46
5	0.40	0.45
6	0.38	0.43
7	0.36	0.41
8	0.34	0.40
9	0.32	0.38
10	0.30	0.36
11	0.28	0.35
12	0.26	0.33
13	0.24	0.32
14	0.22	0.30
15	0.20	0.28
16	0.18	0.26
17	0.16	0.24
18	0.14	0.23
19	0.12	0.21
20	0.10	0.19

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.
45X-High Performance Dual Thermally Broken Storefront - Glazed Wall System

Size Specific SHGC Matrix*

Center of Glass SHGC	Overall SHGC
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.54
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.09
0.05	0.05

Size Specific VT Matrix*

Center of Glass VT	Overall VT
0.75	0.67
0.70	0.62
0.65	0.58
0.60	0.53
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 90.1% 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*
							24.49" by 24.49"	*78.74" by 78.74"*	*157.87" by 157.87"*
1	0.48	43.7	Head	2.1350	0.8686	0.5050	0.6052	0.5127	0.4819
			L. Jamb	1.1350	0.8456	0.4864			
			R. Jamb	1.1350	0.8239	0.4933			
			Mullion	2.2700	0.8348	0.4899			
			Sill	2.1350	0.8068	0.5044			
2	0.46	44.8	Head	2.1350	0.8679	0.4909	0.5933	0.4963	0.4643
			L. Jamb	1.1350	0.8428	0.4720			
			R. Jamb	1.1350	0.8211	0.4788			
			Mullion	2.2700	0.8320	0.4754			
			Sill	2.1350	0.8059	0.4903			
3	0.44	45.8	Head	2.1350	0.8671	0.4768	0.5816	0.4799	0.4473
			L. Jamb	1.1350	0.8401	0.4576			
			R. Jamb	1.1350	0.8185	0.4645			
			Mullion	2.2700	0.8293	0.4610			
			Sill	2.1350	0.8050	0.4762			
4	0.42	46.8	Head	2.1350	0.8665	0.4629	0.5698	0.4635	0.4303
			L. Jamb	1.1350	0.8376	0.4433			
			R. Jamb	1.1350	0.8158	0.4502			
			Mullion	2.2700	0.8267	0.4467			
			Sill	2.1350	0.8042	0.4622			
5	0.40	47.9	Head	2.1350	0.8658	0.4490	0.5582	0.4472	0.4132
			L. Jamb	1.1350	0.8350	0.4291			
			R. Jamb	1.1350	0.8133	0.4360			
			Mullion	2.2700	0.8241	0.4326			
			Sill	2.1350	0.8034	0.4483			
6	0.38	48.9	Head	2.1350	0.8652	0.4353	0.5466	0.4308	0.3961
			L. Jamb	1.1350	0.8325	0.4150			
			R. Jamb	1.1350	0.8108	0.4219			
			Mullion	2.2700	0.8216	0.4184			
			Sill	2.1350	0.8026	0.4344			
7	0.36	50.0	Head	2.1350	0.8645	0.4215	0.5350	0.4143	0.3788
			L. Jamb	1.1350	0.8298	0.4010			
			R. Jamb	1.1350	0.8081	0.4078			
			Mullion	2.2700	0.8189	0.4044			
			Sill	2.1350	0.8017	0.4207			
8	0.34	51.0	Head	2.1350	0.8640	0.4080	0.5222	0.3974	0.3614
			L. Jamb	1.1350	0.8195	0.3869			
			R. Jamb	1.1350	0.7973	0.3937			
			Mullion	2.2700	0.8084	0.3903			
			Sill	2.1350	0.8011	0.4070			
9	0.32	52.0	Head	2.1350	0.8634	0.3944	0.5107	0.3811	0.3443
			L. Jamb	1.1350	0.8172	0.3730			
			R. Jamb	1.1350	0.7950	0.3798			
			Mullion	2.2700	0.8061	0.3764			
			Sill	2.1350	0.8004	0.3934			

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 24.49" by 24.49"	*NFRC 100-2010* 78.74" by 78.74"	*95% Vision Area* 157.87" by 157.87"
10	0.30	53.1	Head	2.1350	0.8629	0.3809	0.4993	0.3646	0.3267
			L. Jamb	1.1350	0.8150	0.3592			
			R. Jamb	1.1350	0.7927	0.3660			
			Mullion	2.2700	0.8038	0.3626			
			Sill	2.1350	0.7997	0.3799			
11	0.28	54.2	Head	2.1350	0.8624	0.3675	0.4880	0.3482	0.3094
			L. Jamb	1.1350	0.8128	0.3455			
			R. Jamb	1.1350	0.7905	0.3522			
			Mullion	2.2700	0.8016	0.3489			
			Sill	2.1350	0.7990	0.3664			
12	0.26	55.2	Head	2.1350	0.8619	0.3541	0.4767	0.3316	0.2918
			L. Jamb	1.1350	0.8106	0.3318			
			R. Jamb	1.1350	0.7884	0.3386			
			Mullion	2.2700	0.7995	0.3352			
			Sill	2.1350	0.7984	0.3530			
13	0.24	56.3	Head	2.1350	0.8614	0.3408	0.4654	0.3152	0.2744
			L. Jamb	1.1350	0.8086	0.3182			
			R. Jamb	1.1350	0.7863	0.3249			
			Mullion	2.2700	0.7975	0.3216			
			Sill	2.1350	0.7978	0.3397			
14	0.22	57.3	Head	2.1350	0.8611	0.3274	0.4542	0.2988	0.2569
			L. Jamb	1.1350	0.8068	0.3046			
			R. Jamb	1.1350	0.7845	0.3112			
			Mullion	2.2700	0.7956	0.3079			
			Sill	2.1350	0.7973	0.3262			
15	0.20	58.4	Head	2.1350	0.8607	0.3142	0.4430	0.2823	0.2393
			L. Jamb	1.1350	0.8048	0.2910			
			R. Jamb	1.1350	0.7825	0.2977			
			Mullion	2.2700	0.7937	0.2944			
			Sill	2.1350	0.7967	0.3129			
16	0.18	59.5	Head	2.1350	0.8431	0.2908	0.4174	0.2607	0.2193
			L. Jamb	1.1350	0.7616	0.2665			
			R. Jamb	1.1350	0.7390	0.2719			
			Mullion	2.2700	0.7503	0.2692			
			Sill	2.1350	0.7769	0.2891			
17	0.16	60.6	Head	2.1350	0.8426	0.2775	0.4062	0.2440	0.2013
			L. Jamb	1.1350	0.7593	0.2529			
			R. Jamb	1.1350	0.7367	0.2583			
			Mullion	2.2700	0.7480	0.2556			
			Sill	2.1350	0.7762	0.2757			
18	0.14	61.7	Head	2.1350	0.8428	0.2631	0.3949	0.2274	0.1835
			L. Jamb	1.1350	0.7586	0.2385			
			R. Jamb	1.1350	0.7359	0.2437			
			Mullion	2.2700	0.7473	0.2411			
			Sill	2.1350	0.7763	0.2613			

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*
							24.49" by 24.49"	*78.74" by 78.74"*	*157.87" by 157.87"*
19	0.12	62.8	Head	2.1350	0.8425	0.2496	0.3837	0.2107	0.1654
			L. Jamb	1.1350	0.7565	0.2249			
			R. Jamb	1.1350	0.7338	0.2300			
			Mullion	2.2700	0.7452	0.2274			
			Sill	2.1350	0.7757	0.2478			
20	0.10	63.9	Head	2.1350	0.8421	0.2361	0.3725	0.1939	0.1473
			L. Jamb	1.1350	0.7545	0.2112			
			R. Jamb	1.1350	0.7318	0.2163			
			Mullion	2.2700	0.7432	0.2137			
			Sill	2.1350	0.7751	0.2343			

This report is a reissue of original Report No. F4785.01-116-45. This report is reissued in the name of C.R. Laurence Co., Inc. through written authorization of Oldcastle BuildingEnvelope.

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 March 16, 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:

Allison M. Goodyear

Digitally Signed by: Allison M. Goodyear

Allison M. Goodyear
Simulation Technician

REVIEWED BY:

Digitally Signed by: Kevin Louder

Kevin S. Louder
Project Engineer

AMG:AMG
F4785.03-116-45

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

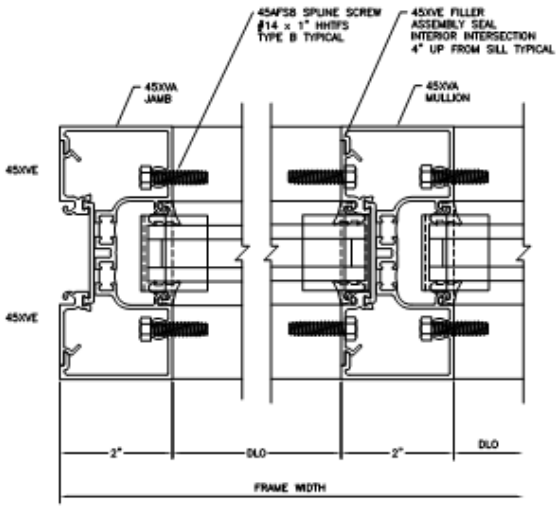
Revision Log

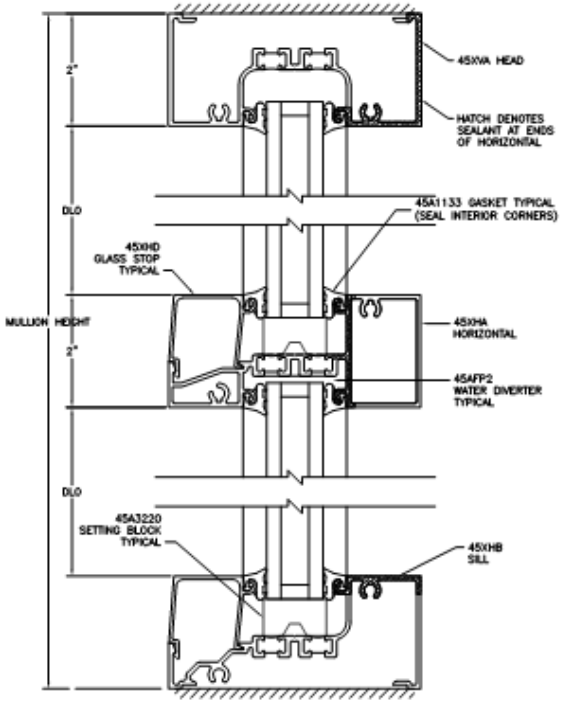
Rev. #	Date	Page(s)	Revision(s)
.03R0	04/27/16	All	Original Report Issue - Reissue of Report No. F4785.01-116-45 in the name of C.R. Laurence Co., Inc.

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

Appendix A

F4785.03-116-45





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REVISIONS

C.R.LAURENCE CO.
ARCHITECTURAL PRODUCTS
2100 E. 38TH Street, Los Angeles, CA 90058
www.crlaurence.com

Job Name:
CRL/US Aluminum ARCTICFRONT
Series 45X-High Performance
Dual Thermally Broken Storefront

Glazing Contractor:

DATE: 11/19/2015
DRAWN BY: GDO
CHECKED BY: XX
SCALE: AS SHOWN
JOB #:

SHT 2 OF 2