

AAMA 507-03 THERMAL PERFORMANCE REPORT

Rendered to:

TUBELITE, INC.

SERIES/MODEL: 14000 Inboard

TYPE: Glazed Wall System

Report No: 65913.01-116-45
Report Date: 06/23/06

AAMA 507-03 THERMAL PERFORMANCE REPORT

Rendered to:

TUBELITE, INC.
4878 Mackinaw Trail
Reed City, Michigan 49677

Report No: 65913.01-116-45
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Project Summary:

Architectural Testing, Inc. (ATI) was contracted by Tubelite, Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the 14000 Inboard Glazed Wall System. The thermal performance ratings were determined in accordance with AAMA 507-03, *Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Building*.

Reference Documents:

AAMA 507-03, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings

NFRC 100-2001, Procedure for Determining Fenestration Product U-Factors

NFRC 200-2001, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

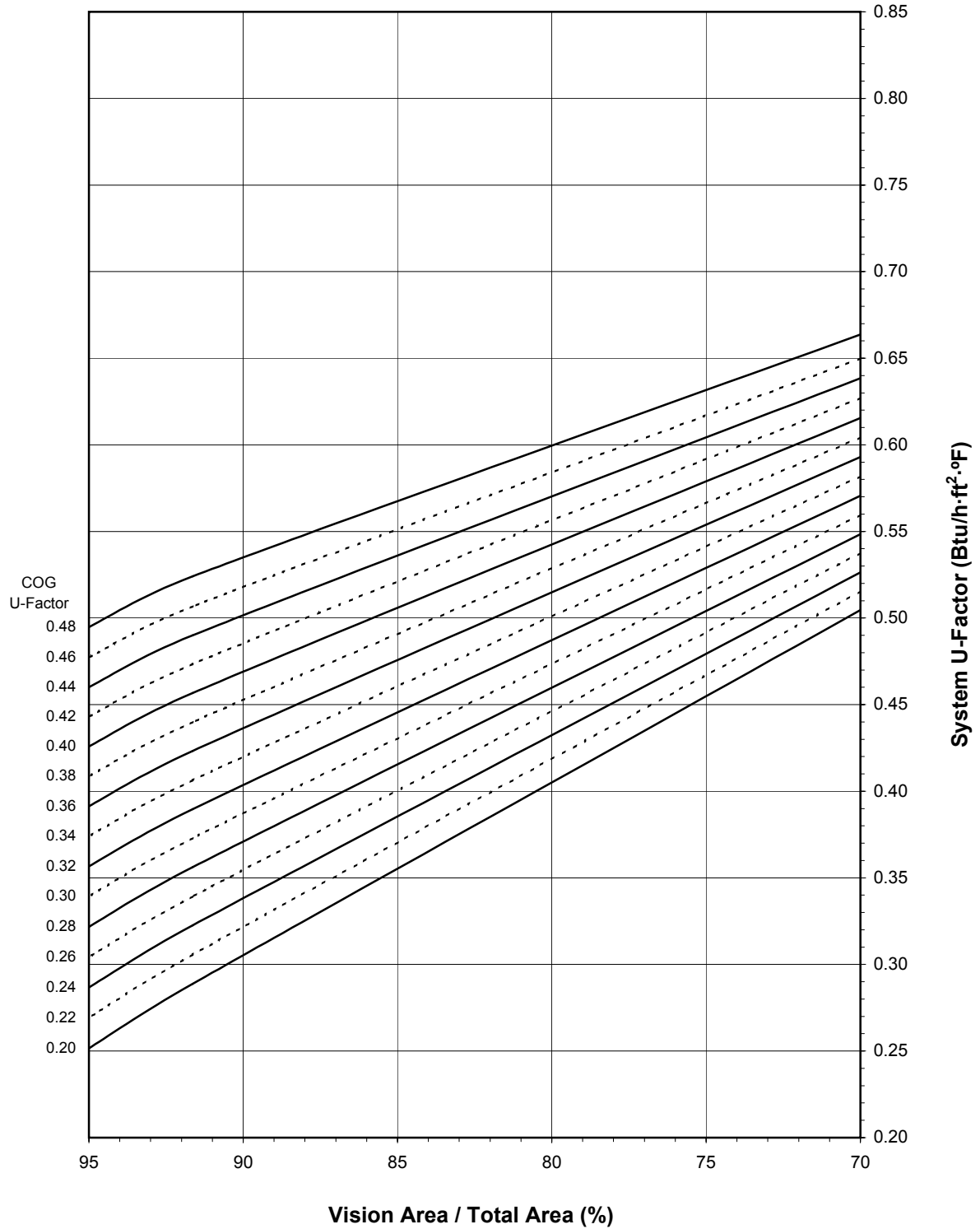
NFRC Technical Interpretation TI-2003-12, Curtain Wall Simulation

Simulation Specimen Description:

Series/Model:	14000 Inboard
Type:	Glazed Wall System
Frame Material:	Thermally Broken Aluminum Framing System
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:	Tubelite Drawing 14000 Inboard

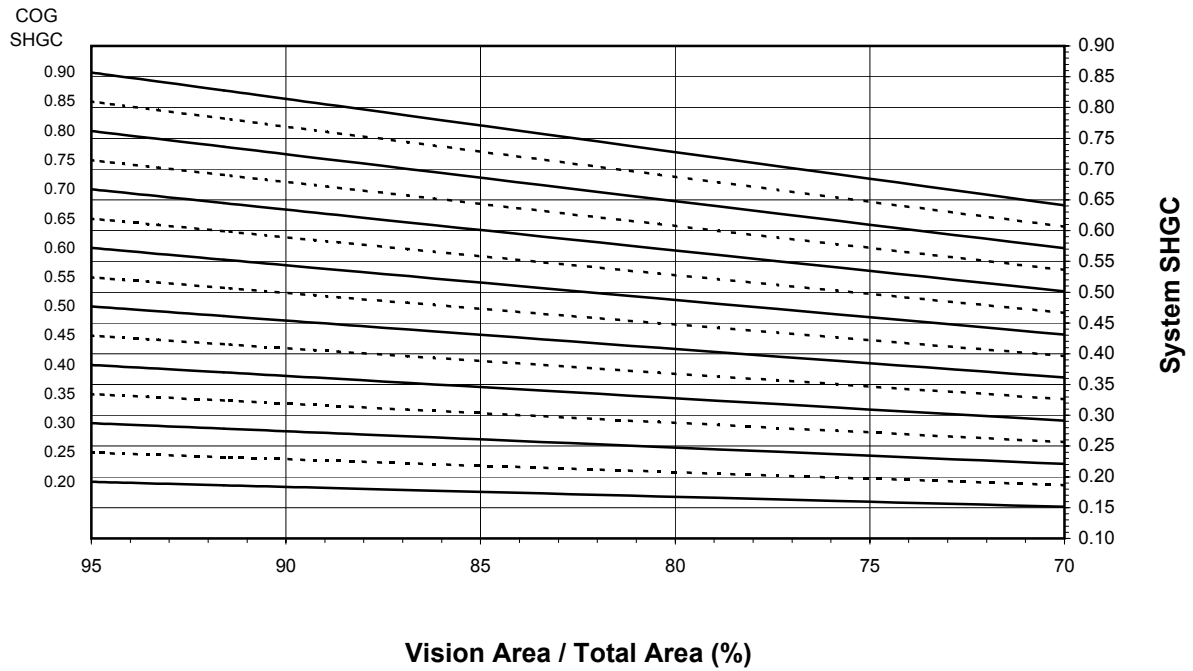
Tubelite, Inc.
14000 Inboard Glazed Wall System

System U-Factor vs. Percentage of Vision Area

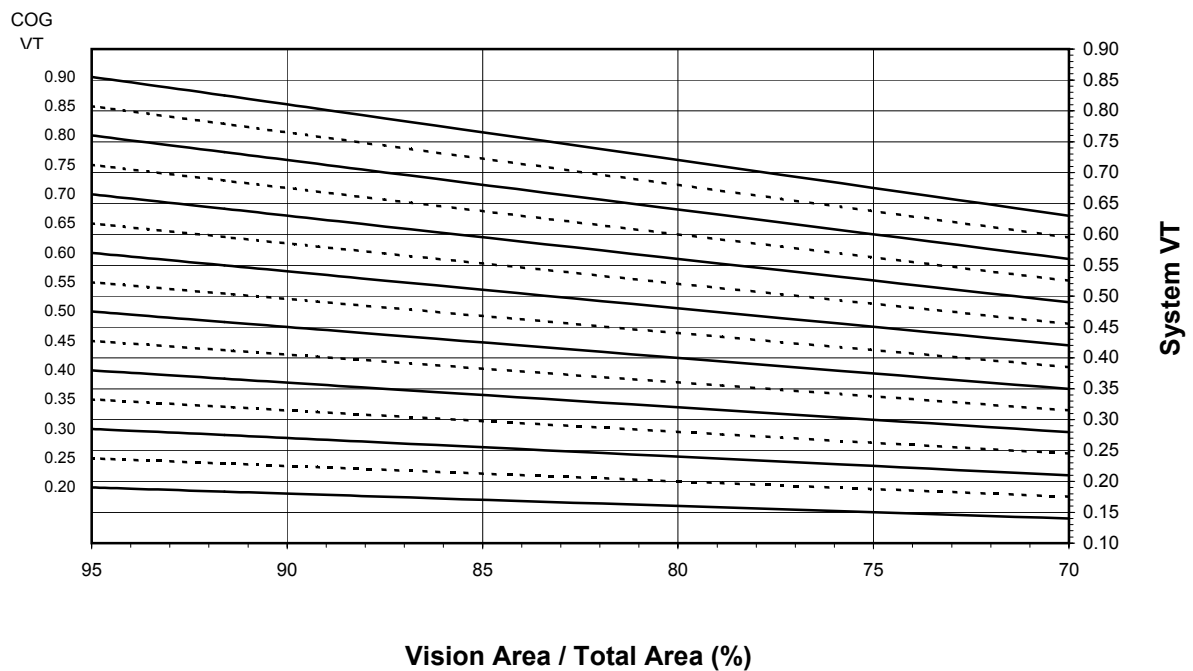


Tubelite, Inc.
14000 Inboard Glazed Wall System

System SHGC vs. Percentage of Vision Area



System VT vs. Percentage of Vision Area



Tubelite, Inc.
14000 Inboard Glazed Wall System

Size Specific U-Factor Matrix*

Glazing Option	Center of Glass U-Factor	Overall U-Factor
1	0.48	0.52
2	0.46	0.51
3	0.44	0.49
4	0.42	0.47
5	0.40	0.46
6	0.38	0.44
7	0.36	0.42
8	0.34	0.41
9	0.32	0.39
10	0.30	0.37
11	0.28	0.36
12	0.26	0.34
13	0.24	0.32
14	0.22	0.31
15	0.20	0.29

Size Specific SHGC Matrix*

Center of Glass SHGC	Overall SHGC
0.90	0.83
0.85	0.78
0.80	0.74
0.75	0.69
0.70	0.64
0.65	0.60
0.60	0.55
0.55	0.51
0.50	0.46
0.45	0.42
0.40	0.37
0.35	0.32
0.30	0.28
0.25	0.23
0.20	0.19

Size Specific VT Matrix*

Center of Glass VT	Overall VT
0.90	0.82
0.85	0.78
0.80	0.73
0.75	0.69
0.70	0.64
0.65	0.60
0.60	0.55
0.55	0.50
0.50	0.46
0.45	0.41
0.40	0.37
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18

*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 91.6% 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 100-2001	95% Vision Area
							20.77" by 20.77"	78.74" by 78.74"	132.68" by 132.68"
1	0.48	43.7	Head	1.1190	0.9254	0.5462	0.6637	0.5241	0.4948
			Vertical	2.2383	0.9923	0.5481			
			Sill	1.1190	0.9292	0.5502			
2	0.46	44.8	Head	1.1190	0.9234	0.5321	0.6499	0.5067	0.4772
			Vertical	2.2383	0.9812	0.5334			
			Sill	1.1190	0.9272	0.5361			
3	0.44	45.8	Head	1.1190	0.9221	0.5182	0.6384	0.4900	0.4601
			Vertical	2.2383	0.9799	0.5196			
			Sill	1.1190	0.9259	0.5222			
4	0.42	46.8	Head	1.1190	0.9208	0.5045	0.6270	0.4734	0.4431
			Vertical	2.2383	0.9786	0.5059			
			Sill	1.1190	0.9246	0.5085			
5	0.40	47.9	Head	1.1190	0.9195	0.4907	0.6155	0.4567	0.4259
			Vertical	2.2383	0.9774	0.4921			
			Sill	1.1190	0.9233	0.4947			
6	0.38	48.9	Head	1.1190	0.9183	0.4771	0.6043	0.4400	0.4086
			Vertical	2.2383	0.9762	0.4785			
			Sill	1.1190	0.9221	0.4811			
7	0.36	50.0	Head	1.1190	0.9171	0.4635	0.5930	0.4232	0.3914
			Vertical	2.2383	0.9750	0.4649			
			Sill	1.1190	0.9209	0.4675			
8	0.34	51.0	Head	1.1190	0.9159	0.4499	0.5817	0.4064	0.3740
			Vertical	2.2383	0.9739	0.4514			
			Sill	1.1190	0.9197	0.4539			
9	0.32	52.0	Head	1.1190	0.9148	0.4366	0.5706	0.3897	0.3566
			Vertical	2.2383	0.9728	0.4381			
			Sill	1.1190	0.9186	0.4405			
10	0.30	53.6	Head	1.1190	0.9137	0.4232	0.5595	0.3730	0.3392
			Vertical	2.2383	0.9717	0.4248			
			Sill	1.1190	0.9175	0.4271			
11	0.28	54.1	Head	1.1190	0.9126	0.4099	0.5485	0.3561	0.3217
			Vertical	2.2383	0.9706	0.4115			
			Sill	1.1190	0.9164	0.4139			
12	0.26	55.2	Head	1.1190	0.9116	0.3966	0.5374	0.3393	0.3042
			Vertical	2.2383	0.9696	0.3982			
			Sill	1.1190	0.9154	0.4006			
13	0.24	56.3	Head	1.1190	0.9106	0.3834	0.5264	0.3225	0.2867
			Vertical	2.2383	0.9686	0.3850			
			Sill	1.1190	0.9143	0.3874			
14	0.22	57.3	Head	1.1190	0.9096	0.3703	0.5155	0.3057	0.2691
			Vertical	2.2383	0.9677	0.3719			
			Sill	1.1190	0.9134	0.3742			
15	0.20	58.4	Head	1.1190	0.9086	0.3572	0.5045	0.2889	0.2516
			Vertical	2.2383	0.9668	0.3587			
			Sill	1.1190	0.9124	0.3610			

Detailed drawings, simulation data disks, and a copy of this report will be retained by ATI for a period of four years. The above results are the exclusive property of the client so named herein and are applicable to the sample simulated. This report does not constitute an opinion or endorsement by this laboratory. This report may not be reproduced except in full without the approval of ATI.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

REVIEWED BY:

Kevin S. Louder
Project Engineer

Michael J. Thoman
Director - Simulations and Thermal Testing
Simulator In Responsible Charge

KSL:ksl
65913.01-116-45

Attachments (pages):

Appendix A: Drawings and Bills of Material (1)

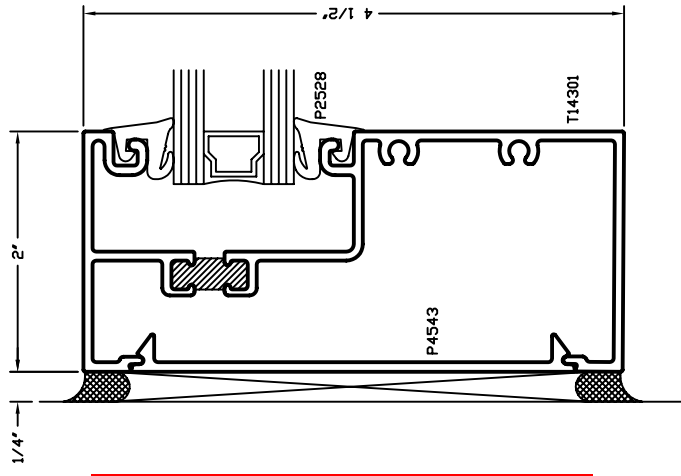
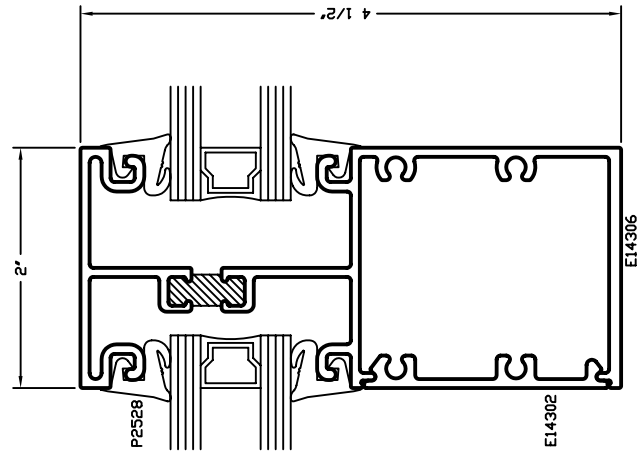
Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.01 R0	6/23/2006	All	Original Report Issue



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

Appendix A



ATI

Report # 65913

Date 6/22/06

Simulator *Ken Lamb*

