



#16-211 SCHOOLHOUSE ST
COQUITLAM
BRITISH COLUMBIA
V3H 1X3
T: 604.527.8378
F: 604.527.8368
www.qai.org • info@qai.org

TEST REPORT

REPORT NUMBER T691-7

Edition 1: May 9, 2011
Contents: Pages 1-14

Daylitter Skylights Inc.
4290 Roof Window

Quality Auditing Institute
Test Report #: T691-7
Client: Dayliter Skylights Inc.
Date: May 9, 2011

Test Method:	CSA A440.2-09 “Fenestration Energy Performance” – Computer Simulation Method
Manufacturer /Client:	Dayliter Skylights Inc.
Manufacturer /Client Address:	5492 275 th Street, Langley, BC, V4W 3X7
Model Number:	4290 Roof Window
Report Number:	T691-7
Description:	Width: 1200mm, Height 1200mm See Appendix A for CAD Drawings and Part Numbers
Test Lab:	Quality Auditing Institute Ltd. #16-211 Schoolhouse Street, Coquitlam, BC

Test Conditions:

Quality Auditing Institute Ltd. (QAI) was retained by Daylitter Skylights Inc. to perform testing in accordance with the computer simulation method requirements of CSA A440.2-09 on a 4290 Roof Window.

The overall coefficient of heat transfer and solar-optical properties were determined by computer simulation using THERM5 and WINDOW5 software. The WINDOW software program models the one-dimensional heat flow through the center-of-glass portion of the skylight. The THERM software program models the two-dimensional heat flow through the frame, edge-of-glass, divider, and divider-edge portions of the skylight. Input data for both programs is based on manufacturer's specifications.

Product drawings and specifications were supplied by Daylitter Skylights Inc. and are shown in Appendix A. The most currently approved spectral data files were used. Defaults for material thermal and optical properties are given in the computer programs. When values other than defaults are used, they are documented in this report.

Ratings are determined for a fixed set of environmental conditions and a specific product size. Actual product performance may be affected by variations in the product dimensions, assembly details, installation method, and environmental conditions.

Quality Auditing Institute Ltd. and its employees do not recommend or warrant any product for any specific use.

Summary of Results:

4290 Roof Window
 Size: 1200mm x 1200mm

Simulation Summary

Model Code	Number Of Layers	Exterior Layer	Interior Layer	Emissivity Surface 2	Emissivity Surface 3	Cavity 1	Spacer Bar Type	Grille Bar	Air Leakage (m ³ /hr/m)	Visual Transmittance Total Skylight	Skylight U-Value (W/m ² K)	Skylight SHGC	Energy Rating (ER)
4290RW_GO1	2	4mm Cardinal 366	4mm Clear	0.022	-	12.7mm Argon	Superspacer	None	N/A	0.57	2.79	0.25	N/A

Notes:

Surfaces are numbered from exterior (1) to Interior.
 All glazing surface emissivities are assumed to be 0.84 unless otherwise stated.
 The gas fill method is single probe with 90% argon fill.

Comments/Conclusion:

Quality Auditing Institute Ltd., with lab facilities located in Coquitlam, British Columbia, performed testing in accordance with the computer simulation method specified in CSA A440.2-09 on a Dayliter Skylights Inc. 4290 Roof Window.

Results are based on product specifications provided by Dayliter Skylights Inc. found in appendix A of this report.

The report relates only to the items tested. Test results in this report may not be reproducible in the field.

Person(s) Authorizing Report:

<hr/>	<hr/> Kevin Nam <hr/>	<hr/> Project Manager <hr/>	<hr/> 09/05/11 <hr/>
Name (Signature)	Name (Printed)	Title	(dd/mm/yy)

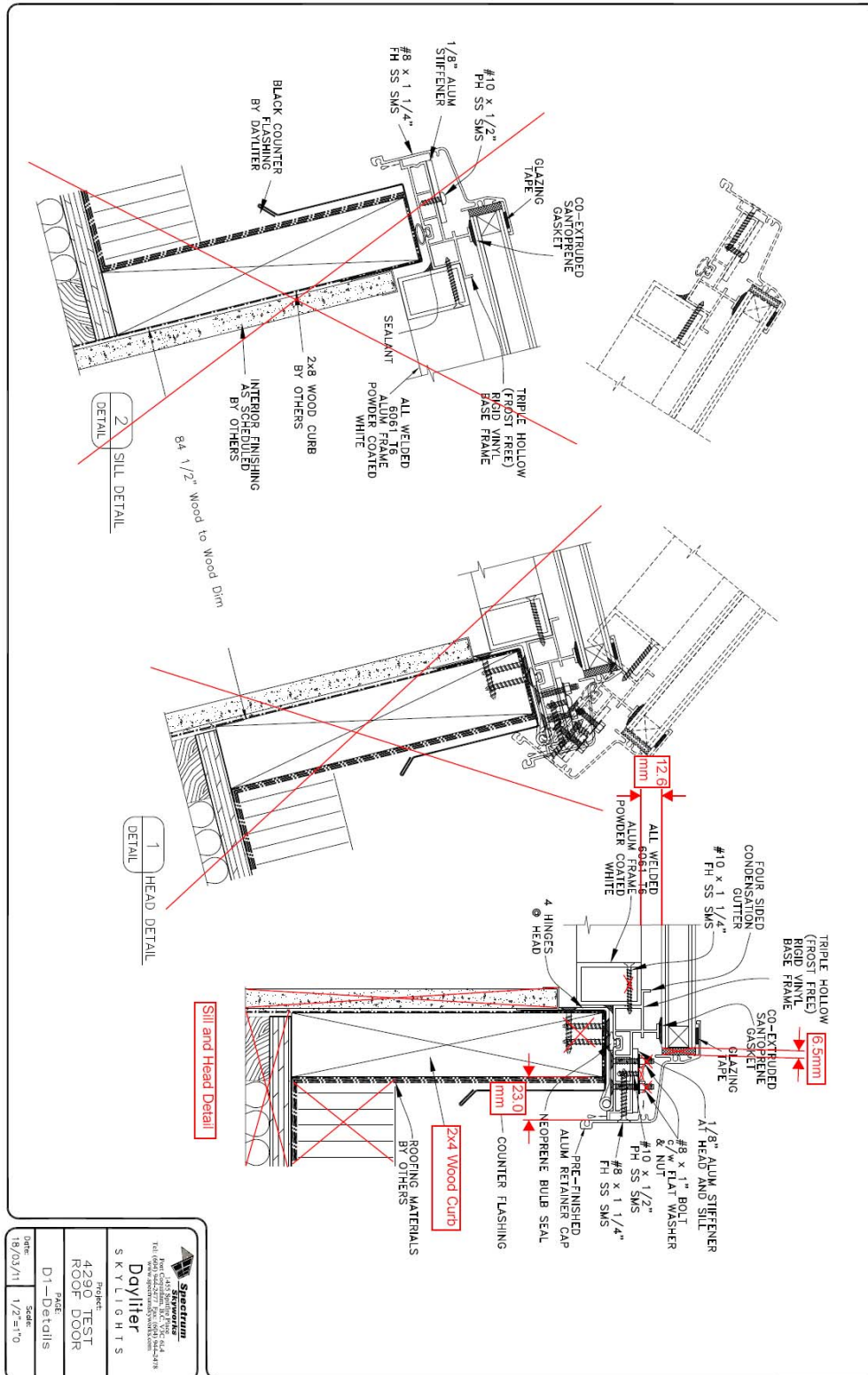
Reviewed by:

<hr/>	<hr/> Kevin Saito <hr/>	<hr/> Division Manager <hr/>	<hr/> 09/05/11 <hr/>
Name (Signature)	Name (Printed)	Title	(dd/mm/yy)

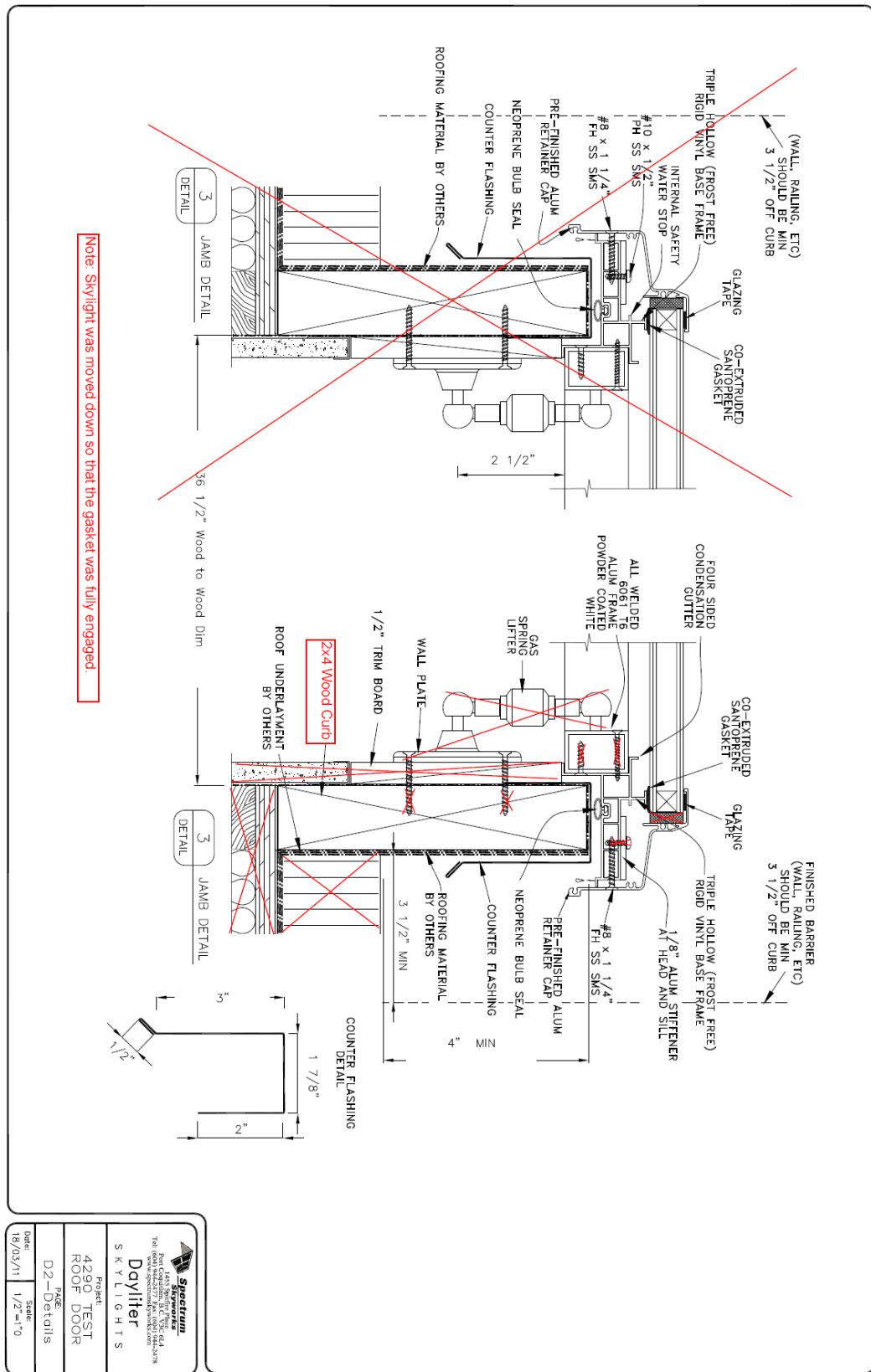
APPENDIX A

Section	Page	Title
A	7-8	Cross-sectional Detail Drawings
	9-10	Frame Drawings
	11	Aluminum Box Reinforcement
B	12	Spacer Bar
C	13-14	Modeling Data Sheets

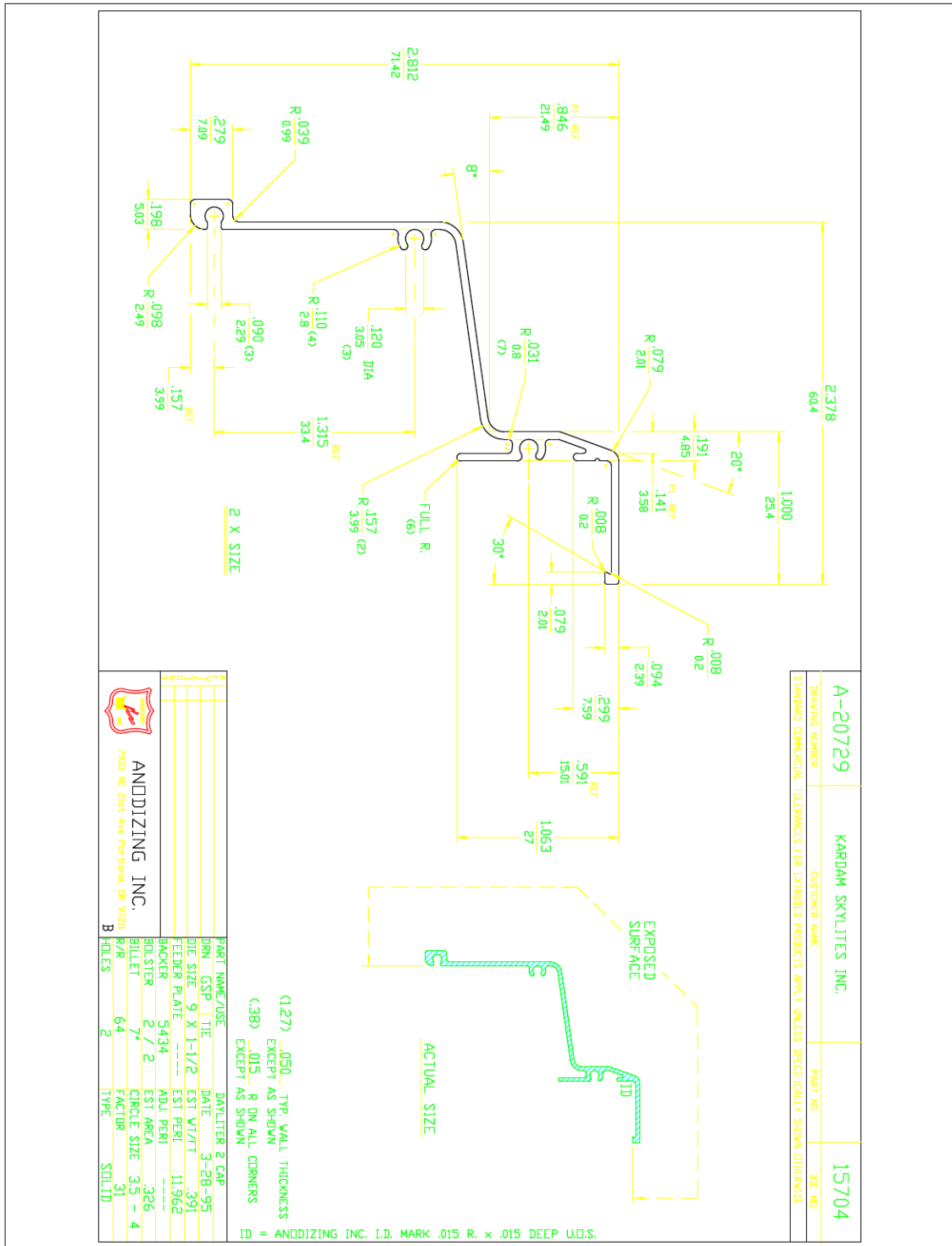
Appendix A: Detail Drawings

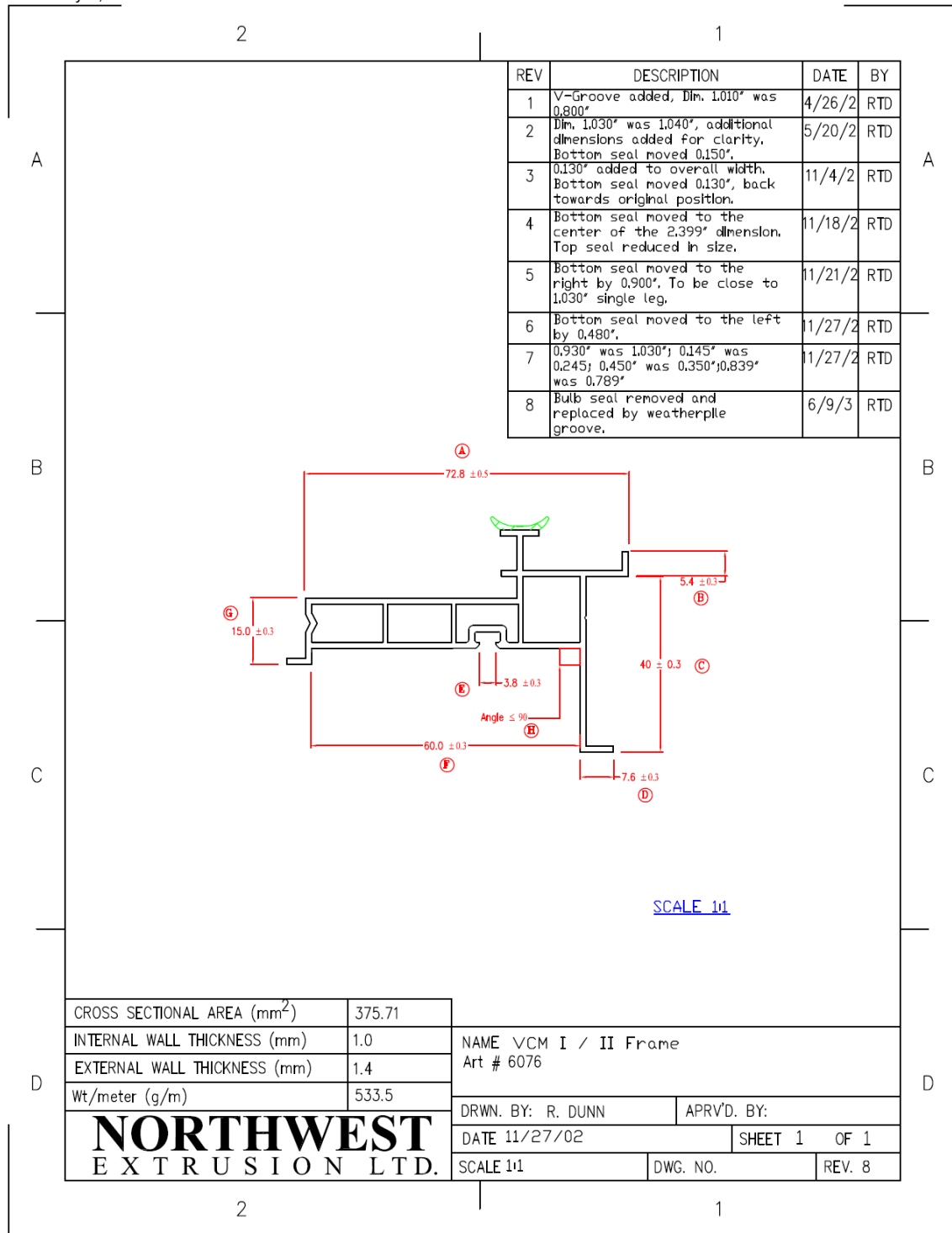


 Spectrum 14000 W. 10th Ave. Suite 100 Denver, CO 80202 TEL: 303.440.8800 FAX: 303.440.8801 WWW.SPECTRUMQA.COM	
Project: Daylitter SKYLIGHTS	
Project: 4290 TEST ROOF DOOR	
Date: 10/03/11	Scale: 1/2"=1'-0"

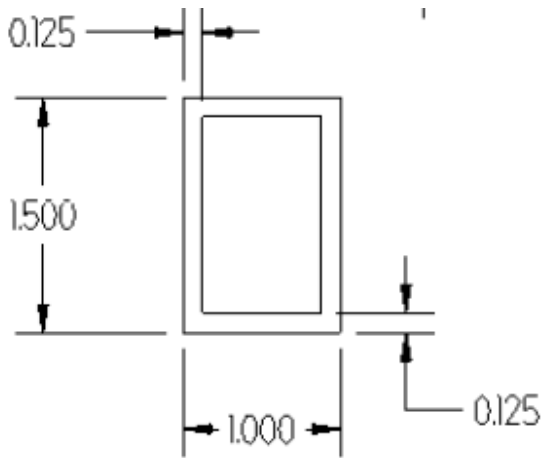


Quality Auditing Institute 14000 W. 10th St., Suite 100 Overland Park, KS 66204 Tel: (913) 241-1111 www.qualityauditing.com	
Daylitter SKYLIGHTS	
Project:	4290 TEST ROOF DOOR
Page:	D2 - Details
Date:	18/03/11
Scale:	1/2" = 1'0"





Aluminum Box Profile

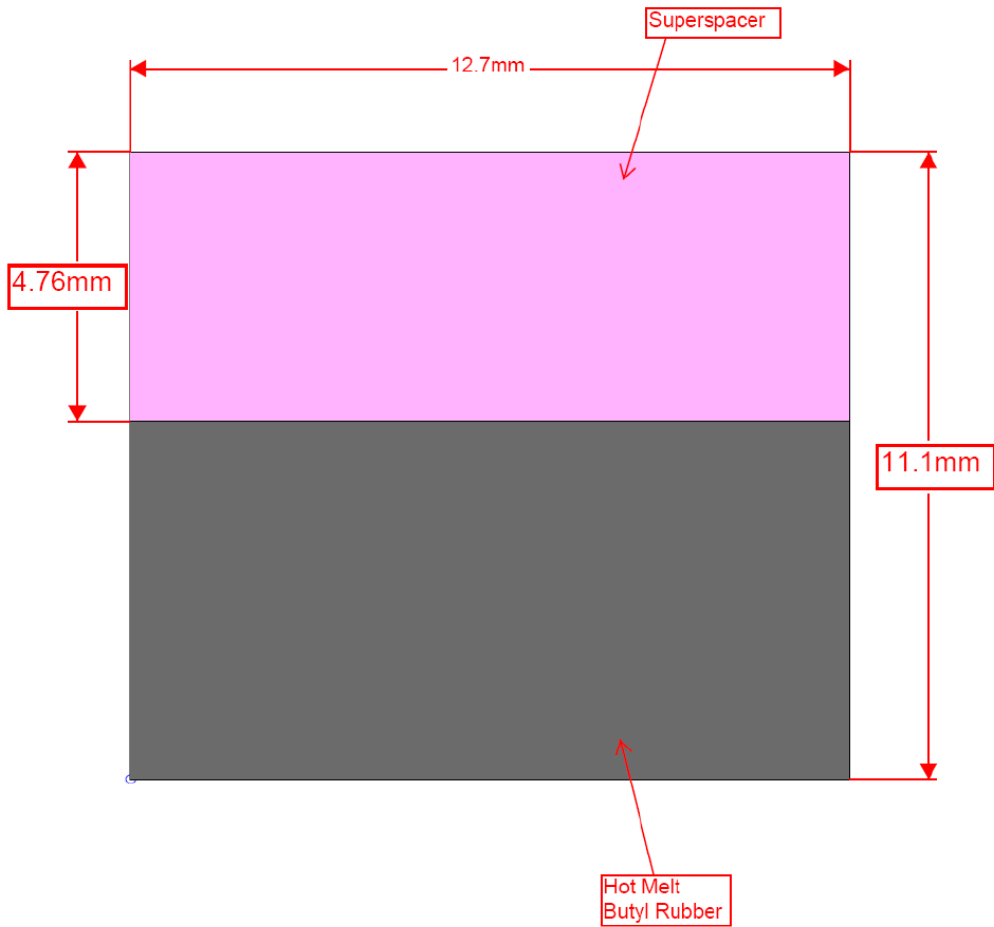


Appendix B: Spacer Bar Drawing

Spacer (1168%)

Therm Version 5.2 (5.2.14) (1 of 1)

Superspacer



Appendix C: Test Data Sheets

Window 5.2a v5.2.17a Report Page 1 05/09/11 09:53:00

ID: 13
 Name: T691-7 4290 Roof Door_G01
 EnvCond: 1 NFRC 100-2002

Type: Skylight
 Tilt: 20
 Width: 1200.0 mm
 Height: 1200.0 mm
 Area: 1.44 m2

U-value: 2.794 W/m2-K
 SHGC: 0.249
 Vt: 0.571
 CI: 53.7

Data for Glazing Systems

ID	Name	COG Area m2	#Lay	Tilt	Uc W/m2	SCc	SHGCc	Vtc	RHG
46	Card366(4)-Arg(12.7)-Cl(4)	1.014	2	20	2.016	0.321	0.276	0.639	212

Glass and Gas Data for Glazing System '46 Card366(4)-Arg(12.7)-Cl(4)'

ID	Name	D(mm)	Tsol	1 Rsol	2 Tvis	1 Rvis	2 Tir	1 Emis	2 Keff			
2155	LoE366-4.CIG #	3.9	.273	.395	.549	.711	.066	.044	.000	.840	.022	1.00
9	Air (10%) / Ar on (90%) Mix	12.7	SF6:	0%	Ar:	0%						.039
5010	CLEAR_4.PPG #	3.9	.812	.075	.075	.895	.086	.086	.000	.840	.840	1.00

Frame Data

Location	ID	Name	Source	Frame Area m2	Edge Area m2	Uframe W/m2-K	Uedge
Header	38	T691-7 VCM He ad_G01.THM	Therm	0.039	0.068	9.1657	2.2124
Left Jamb	39	T691-7 VCM Ja mb_G01.THM	Therm	0.038	0.068	8.9592	2.2362
Right Jamb	39	T691-7 VCM Ja mb_G01.THM	Therm	0.038	0.068	8.9592	2.2362
Sill	40	T691-7 VCM Si ll_G01.THM	Therm	0.038	0.068	8.5740	2.2408

Gas Data

ID	Name	Type	Cond W/m-K	Visc kg/m-s x e-6	Cp J/kg-K	Dens kg/m3	Pran
9	Air (10%) / Argon (90%) Mix	M Mix	0.0171	20.66	558.03	1.7329	0.6758

Window 5.2a v5.2.17a Report Page 2 05/09/11 09:53:00
 Environmental Conditions: 1 NFRC 100-2002

	Tout (C)	Tin (C)	WndSpd (m/s)	Wnd Dir	Solar (W/m2)	Tsky (C)	Esky
Uvalue	-18.0	21.0	5.50	Windward	0.0	-18.0	1.00

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Solar 32.0 24.0 2.80 Windward 783.0 32.0 1.00

Frame Library Data

ID	Name	Source	U-value		Edge Corr	GlzSys Width mm	GlzSys Uc W/m2-K	Width (PFD) mm	Abs
			Frame W/m2-K	Edge W/m2-K					
38	T691-7 VCM Head_G01.THM	Therm	9.1657	2.2124	N/A	20.502	2.016	33.00	0.30
39	T691-7 VCM Jamb_G01.THM	Therm	8.9592	2.2362	N/A	20.502	2.016	32.97	0.30
40	T691-7 VCM Sill_G01.THM	Therm	8.5740	2.2408	N/A	20.502	2.016	32.96	0.30

Divider Library Data

ID	Name	Source	U-value		Edge Corr	GlzSys Width mm	GlzSys Uc W/m2-K	Width (PFD) mm	Abs
			Div W/m2-K	Edge W/m2-K					

No Dividers for this Glazing System

Optical Properties for Glazing System '46 Card366(4)-Arg('

Angle	0	10	20	30	40	50	60	70	80	90	Hemis	
Vtc	: 0.639	0.642	0.634	0.622	0.606	0.574	0.502	0.365	0.170	0.000	0.533	
Rf	: 0.110	0.102	0.100	0.103	0.115	0.137	0.182	0.283	0.515	0.999	0.166	
Rb	: 0.121	0.114	0.113	0.117	0.132	0.162	0.227	0.375	0.648	1.000	0.203	
Tsol	: 0.242	0.244	0.240	0.236	0.230	0.218	0.191	0.139	0.065	0.000	0.202	
Rf	: 0.410	0.405	0.403	0.405	0.413	0.426	0.451	0.514	0.666	0.999	0.440	
Rb	: 0.419	0.415	0.412	0.410	0.411	0.418	0.442	0.509	0.657	1.000	0.438	
Abs1	: 0.339	0.342	0.347	0.349	0.348	0.347	0.348	0.339	0.262	0.001	0.338	
Abs2	: 0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.009	0.007	0.000	0.009	
SHGCc	: 0.276	0.278	0.275	0.271	0.265	0.253	0.226	0.172	0.090	0.000	0.236	
Tdw-K	: 0.205											
Tdw-ISO	: 0.420											
Tuv	: 0.048											

Temperature Distribution (degrees C)

	Winter		Summer	
	Out	In	Out	In
Lay1	-15.3	-15.0	43.2	43.6
Lay2	10.8	11.1	29.2	29.0