



TEST REPORT

Report No.: F8967.02-109-44

Rendered to:

VELUX America LLC Greenwood, South Carolina

PRODUCT TYPE: Skylight

SERIES/MODEL: Dynamic Double Dome Poly Smooth/Poly Smooth (6x6) (0.118/0.118

thickness)

SPECIFICATION(S): Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e) (8)

California Code of Regulations, Title 8, Section 3212

Test Date(s): 11/21/16

Report Date: 01/09/18

Test Record Retention End Date: 11/21/20





Report Date: 01/09/18 Page 1 of 6

1.0 Report Issued To: VELUX America LLC

1418 Evans Pond Road

P.O. Box 5001

Greenwood, South Carolina 29648-5001

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")

130 Derry Court

York, Pennsylvania 17406-8405

717-764-7700

3.0 Project Summary:

3.1 Product Type: Skylight

3.2 Series/Model: Dynamic Double Dome Poly Smooth/Poly Smooth (6x6) (0.118/0.118

thickness)

3.3 Compliance Statement: Results obtained are tested values and were secured by using

the designated test method(s).

3.4 Test Date(s): 11/21/16

3.5 Test Record Retention End Date: All test records for this report will be retained until

November 21, 2020.

3.6 Test Location: Intertek-ATI test facility in York, Pennsylvania.

3.7 Test Specimen Source: The test specimen(s) was provided by the client Representative

samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of two

years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen

Company

construction was verified by Intertek-ATI per the drawings located in Appendix B. Any

deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name

Name	company
Robert Beatty	Intertek-ATI
Timothy J. McGill	Intertek-ATI
Richard E. Hartman III	Intertek-ATI





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4.0 Test Specification(s):

Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e) (8)

California Code of Regulations, Title 8, Section 3212

A 400 lb. weight, fabricated from a bag filled with lead shot, was placed on the center of the glazing for a minimum of 60 seconds. The bag was removed and the test unit was inspected for any signs of damage or failure.

Additional Testing:

The specimen was taken to failure using sandbags and placed on the center of the glazing for a minimum of 60 seconds. The highest load causing penetration or damage resulting in a one square foot opening was recorded.

5.0 Evaluation Scope:

Intertek Building & Construction (B&C) was contracted by VELUX America LLC, 1418 Evans Pond Road on December 4, 2017 to evaluate the OSHA fall protection testing to the most recent referenced document. Occupational Safety and Health Administration (OSHA)/U.S. Department of Labor Regulations Standard 29 CFR §1910.29 – Fall protection systems and falling object protection-criteria and practices. Section 1910.29(e)(1) requires a cover to be capable of supporting without failure at least twice the maximum intended load that may be imposed on the cover at any one time.

Intertek Building & Construction (B&C) was contracted by VELUX America LLC, 1418 Evans Pond Road on December 4, 2017 to evaluate the Cal/OSHA fall protection testing to the most recent referenced document. California Code of Regulations, Title 8, Section 3212 §(b), which states, "covers shall be capable of safely supporting the greater of 400 lbs or twice the weight of the employees, equipment and materials that may be imposed on any one square foot area of the cover at any time."





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6.0 Test Specimen Description:

6.1 Product Sizes:

Overall Area: 42.0 ft ²	Width (inches)	Length (inches)				
Overall size	77-3/4	77-3/4				

6.2 Frame Construction:

Frame Member	Material	Description				
Inner Frame	Aluminum	Extruded				
Dome clamp	Aluminum	Extruded				
cover	Aluminum	Extraded				

	Joinery Type	Detail
All corners	Mitered	Miter cut and welded

6.3 Weatherstripping:

Description	Quantity	Location
Custom shaped gasket	1 row	Located around the interior perimeter of
Custom-shaped gasket	1 row	the inner frame





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6.0 Test Specimen Description: (Continued)

6.4 Glazing: No conclusions of any kind regarding the adequacy or inadequacy of the glazing in any glazed test specimen(s) can be made.

Glazing Type	Interior Glaze	Spacer Type	Exterior Glaze	Glazing Method
3/8" wide gap	1/8" smooth polycarbonate	Double- sided adhesive foam spacer	1/8" smooth polycarbonate	The glazing was set from the exterior onto a custom-shaped gasket against the extruded aluminum frame. The glazing was secured using an aluminum extruded dome clamp cover with a bead of sealant on the glazing. The dome clamp cover was secured using #10 x 5/8" pan head self-tapping screws located 5" from corners and one at the midspan of opposite sides of the glazing.

Location	Quantity	Daylight Opening (inches)	Glazing Bite (inches)
Dome	1	72-3/8 x 72-3/8	1

7.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood curb. The curb was tight fitting eliminating the need to shim.

Location	Anchor Description	Anchor Location
Inner Frame	#8 x 1-1/2" pan head screws	8" from corners, 12" on center





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8.0 Test Results: The results are tabulated as follows:

8.1 California (and OSHA) minimum loading:

Test Load	Load Location	Results
400 lbf	Center of dome	No visible damage

Note: The 400 lbf weight was applied perpendicular to the center of the dome. After 60 seconds of rest time, there was no visible damage to the exterior glazing.

8.2 Additional loading (applied on the same unit in the listed order):

Test Load	Load Location	Results		
500 lbf at rest	Center of dome	No visible damage		
600 lbf at rest	Center of dome	No visible damage		
700 lbf at rest	Center of dome	No visible damage		
800 lbf at rest	Center of dome	No visible damage		
900 lbf at rest	Center of dome	No visible damage		
1000 lbf at rest	Center of dome	Dome inverted, frame rolled		
1100 lbf at rest	Center of dome	No additional damage		
1200 lbf at rest	Center of dome	No additional damage		
1300 lbf at rest	Center of dome	No additional damage		
1400 lbf at rest	Center of dome	Dome continued to invert		
1500 lbf at rest	Center of dome	No additional damage		
1600 lbf at rest	Center of dome	See note #1		

Note #1: At 1600 lbf, specimen deglazed causing penetration of the weight.

9.0 Conclusion:

The specimen was evaluated in accordance with Occupational Safety and Health Administration (OSHA)/U.S. Department of Labor Regulations Standard 29 CFR §1910.29(e)(1) to be capable of supporting twice the maximum intended load, up to (450) ft-lb.

The specimen was evaluated in accordance with California Code of Regulations, Title 8, Section 3212 §(b) to be capable of safely supporting loads exceeding 400 ft-lb.





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Intertek-ATI will service this report for the entire test record retention period. Test records 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.

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 specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, Inc.

Richard E. Hartman III Technician

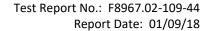
Timothy J. McGill Manager - Product Testing

REH:asm/cmd/abo

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Photograph(s) (1) Appendix-B: Drawing(s) (17)

This report produced from controlled document template ATI 00514, revised 06/26/14.







Appendix A Photograph(s)



Photo No. 1 View of Tested Specimen



Photo No. 2
View of Tested Specimen with 400 Pound Load

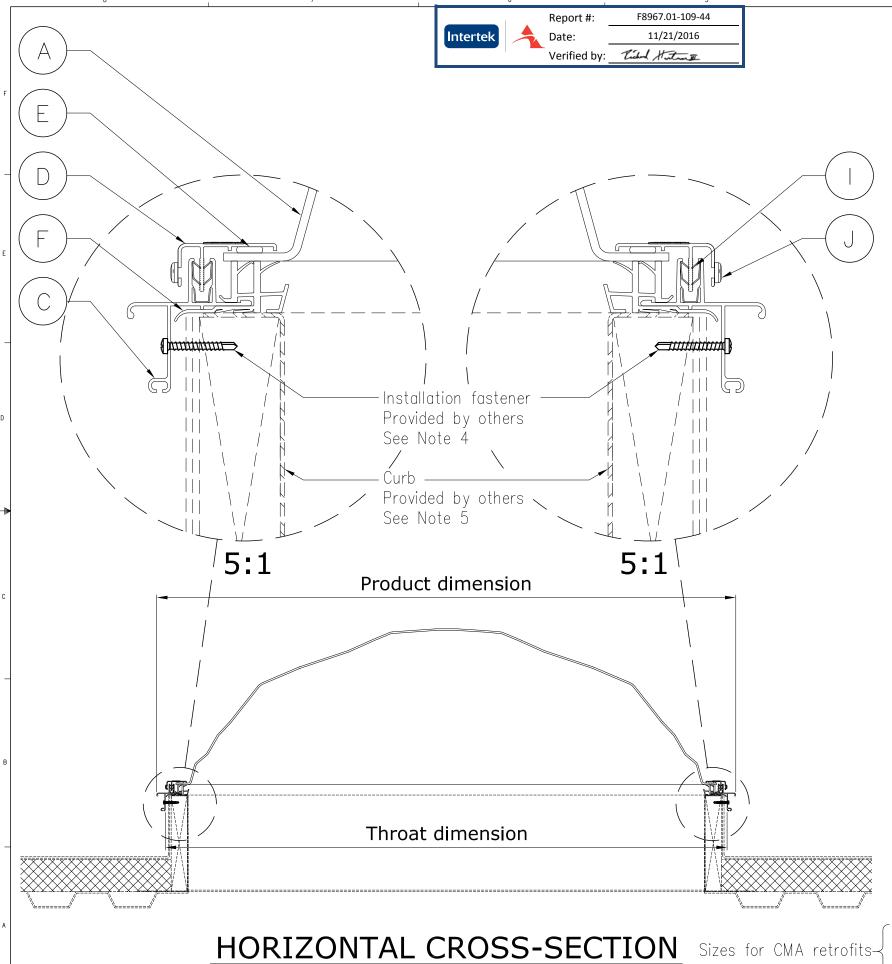




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Appendix B

Drawing(s)



	PART SCHEDULE								
ITEM	QTY.	PART	PART NO.	DESCRIPTION	Category	DRAWING NO Commodity No.	Operation	Edition	COMMENTS
А	1	Dynamic exterior dome		Polycarbonate, or acrylic, or impact modified acrylic	21	3036150AC	32	02	Thermoformed exterior dome
					21	302359000	00	01	Profile
C	4	Inner frame	302359	6063/T5 Aluminum	21	3023590AC	31	02	Cutting and punching
		Timer in diffe	302333	Powder coat color: NCS S 7500-N (Grey)	21	3023590AC	39	02	Powder coat
					21	3023590AC	42	02	Welding
N/A	N/A	Primer	N/A	Clamp cover, Inner Frame, & Domes	21	3023590AC	52	01	Primer placement
					21	302361000	00	01	Profile
D	4	Dome clamp cover	302360	Powder coat color: NCS S 7500-N (Grey)	21	3023610AC	31	02	Cutting and drilling
					21	3023610AC	39	02	Powder coat
					21	3023600AC	42	01	Welding
E	N/A	Commercial sealant	305660	Silicone for commercial application	21	3036600AC	52	02	Silicone placement
					21	303612000	00	01	Profile
F	4	High profile gasket	303612	TPE Color: Black	21	303611000	39	01	Gasket groove cutting
'		Trigit profile gasket	303012		21	3036110AC	31	01	Gasket cutting
					21	3036110AC	42	02	Gasket welding
H*	4	Gasket wick	305659	Polyethelene felt for wicking	21	30565900C	00	02	Profile/cutting
	-	Oddice wick			21	3056590AC	52	02	Wick placement
	#	Spring clip	306222	301 Spring Temper Stainless Steel	21	306222000	00	01	
		Spring only	500222		21	3062220AC	52	02	Spring clip placement

	FASTENER SCHEDULE									
IT	ITEM QTY. PART PART NO. DESCRIPTION DESCRIPTION ON Controlly No. Operation COMMENTS							COMMENTS		
	J	#	Torx screw	306225	Torx Pan head, SST, #2 drill point #10-16x5/8"	21	306225000	00	01	Commodity drawing

GENERAL NOTES

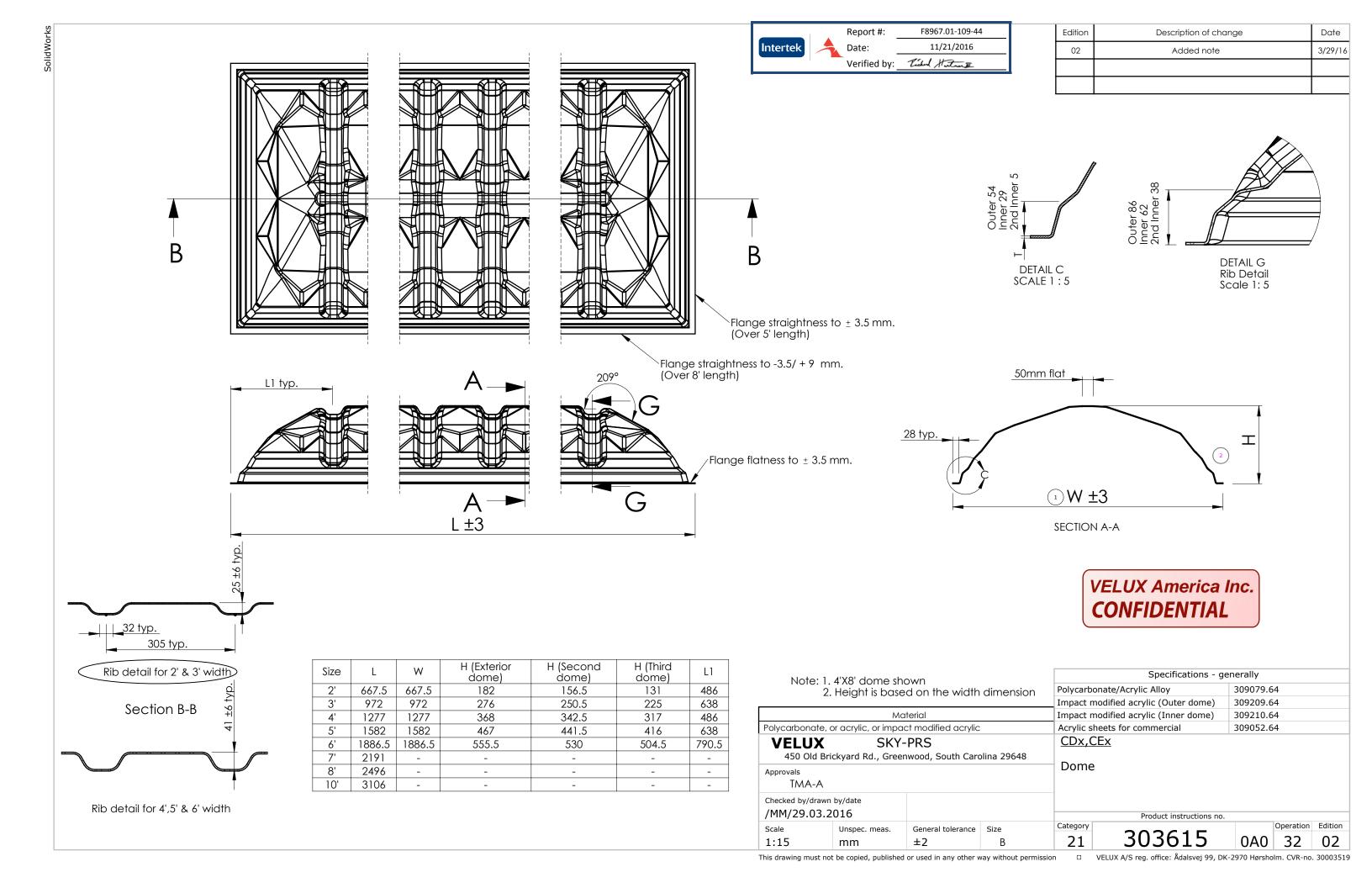
- * Not Visible in this drawing
- 1. Unless noted otherwise, all parts listed are for CD1, CE1, CT1, CG1, CH1, CJ1 Commercial Dome skylights.
- 2. A copy of this drawing plus any other supplemental documentation regarding this skylight model will be maintained at the Skylight Technical Database in the following category location Technical Data/Submittal Data/
- 3. Horizontal and Vertical Frame Cross—Section part sizes, materials and assembly are identical.
- 4. #8 or larger stainless steel installation fasteners, appropriate for supporting structure. Provided by others. One fastener per hole of
- 5. The CDx skylight installs directly on site built or prefabricated curbs, provided by others.

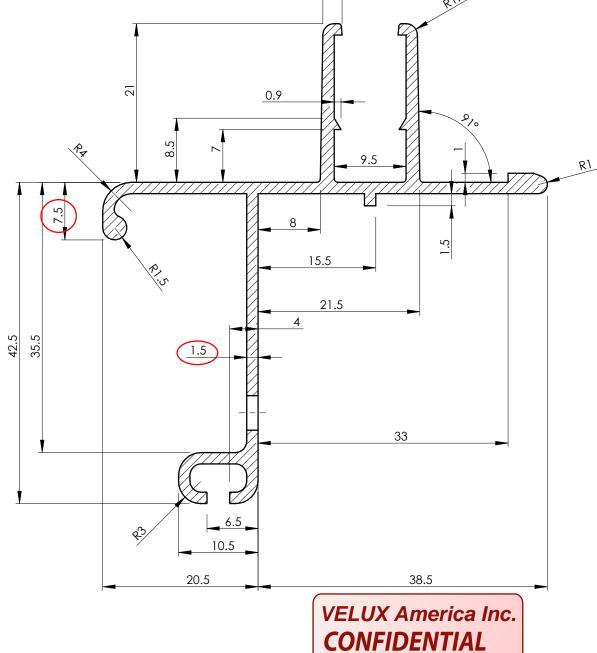
Size	Throat dimension	Product dimension mm
2′	717	758
3′	1022	1063
4′	1326.5	1368
5′	1631.5	1672.5
6′	1936	1977.5
7′	2241	2282
8′	2546	2857
10'	3155.5	3197
225	743	784
305	946	987
345	1047.5	1088.5
465	1352.5	1393.5

VELUX America Inc. CONFIDENTIAL

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DIMENSIONS ARE IN MM NDTE: REMERAL TOLERANCES: NROULAR: ±1 NRE PLACE DECIMAL:±0.5	SKY-GPM 1418 Evans Pond Road PO Box 5001 Greenwood, South Carolina 29648-5001				
PECIFICATION	Commercial Single Dome Skylight CD1, CE1, CT1, CG1, CH1, CJ1				
INCH INCH	Product Certification Typical Arrangement with				
	Product List of Parts SIZE COMMODITY NO. REV. SCALE: CKD/DRAWN/DATE RLE/JDH 04/06/2016				

(TYPICAL FOR FRAME VERTICAL CROSS-SECTION)



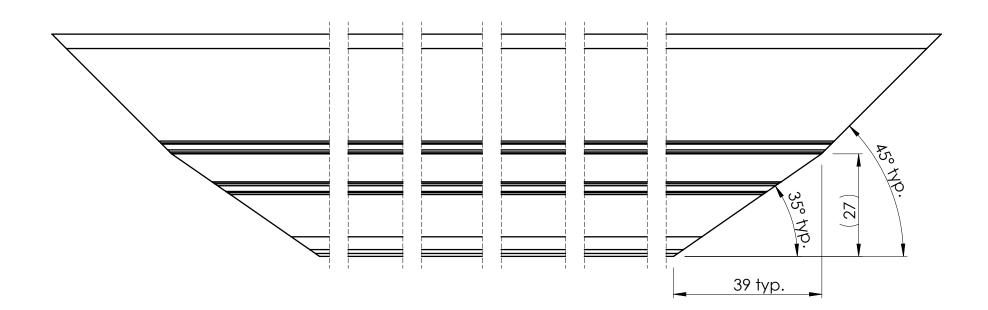


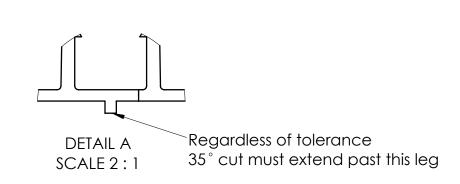
Specifications - generally Material 6063/T5 Aluminum Extruded Aluminum-Generally 309078.64 CDx,CEx,CTx,CGx,CHx,CJx SKY-PRS **VELUX** 450 Old Brickyard Rd., Greenwood, South Carolina 29648 Inner frame Approvals Profile TMA-A Checked by/drawn by/date /MM/20.01.2016 Product instructions no. Operation Edition Category Scale Unspec. meas. General tolerance Size В 21 000 00 01 ±0.5 2:1 mm

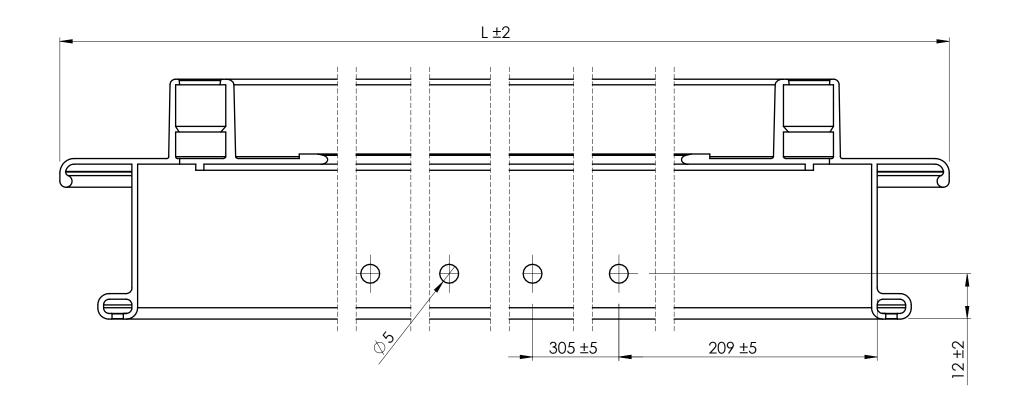
Date

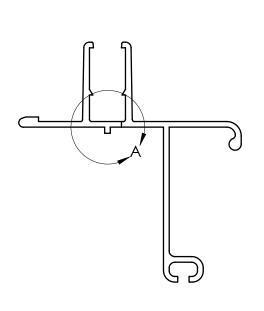


Edition	Description of change	Date
02	Added CG2 sizes	3/22/16





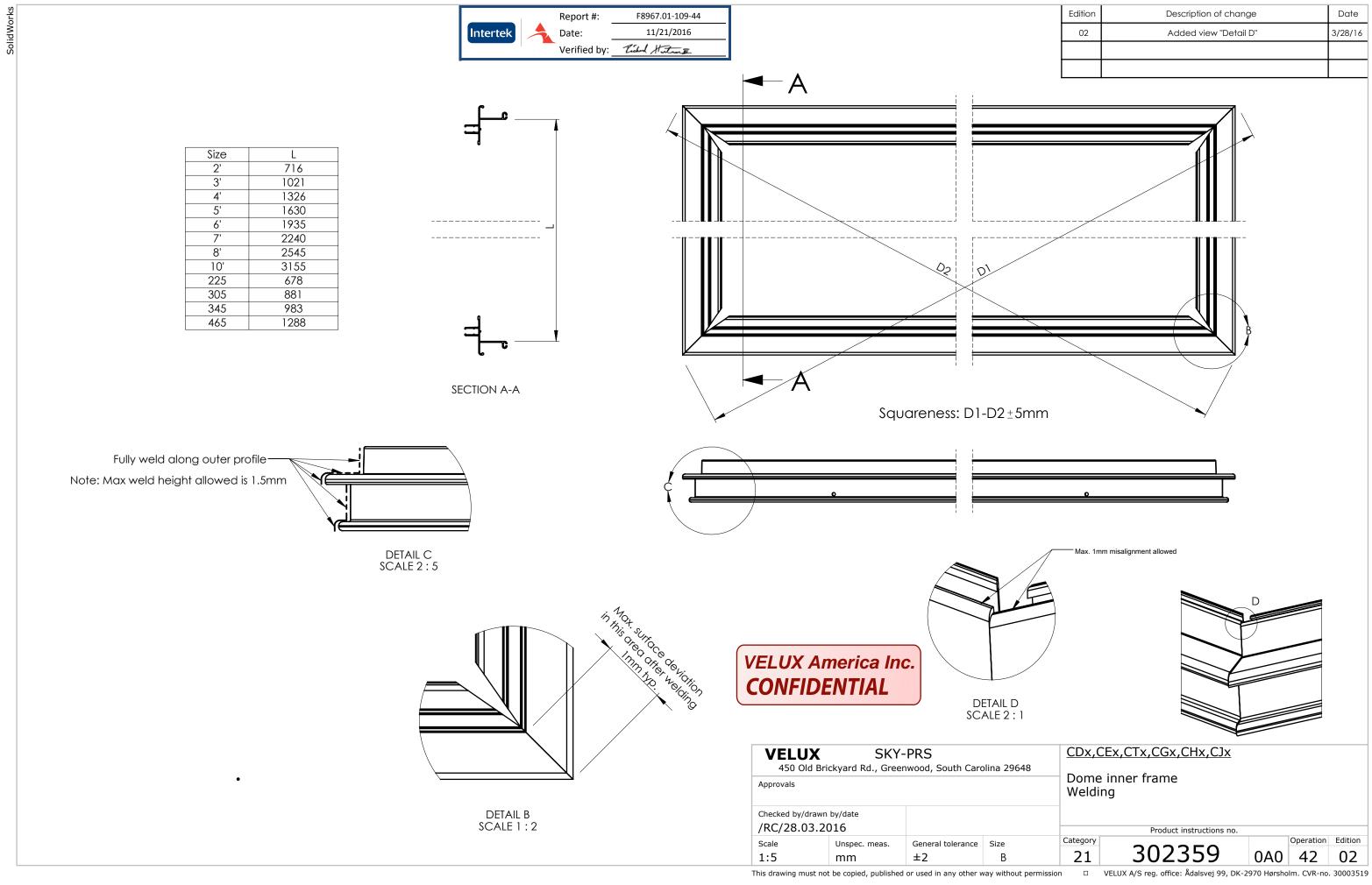




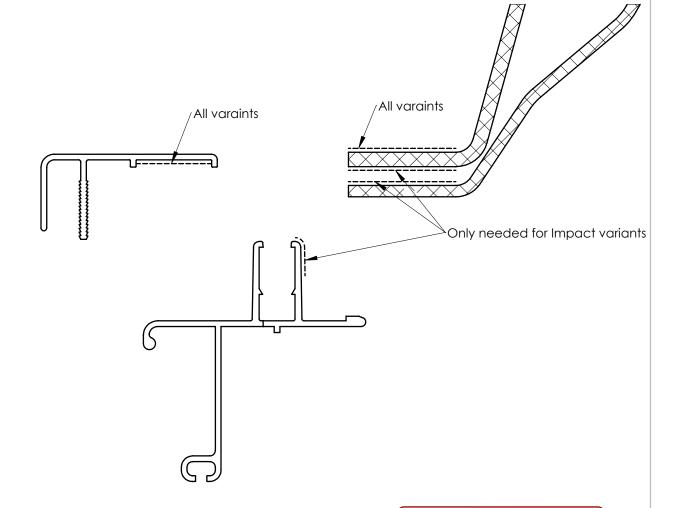
Size	L _a	Number of holes
2 foot	757	2
3 foot	1062	3
4 foot	1366	4
5 foot	1671	5
6 foot	1976	6
7 foot	2281	7
8 foot	2586	8
10 foot	3195	10
225	719	2
305	922	3
345	1024	3
465	1329	4



VELUX SKY-PRS 450 Old Brickyard Rd., Greenwood, South Carolina 29648			CDx,CEx,CTx,CGx,CHx,CJx Inner frame Cutting and punching					
Approvals								
Checked by/dr	Checked by/drawn by/date							
/REC/21.0	03.2016				Product instructions no.			
Scale	Unspec. meas.	General tolerance	Size	Category	22225		Operation	Edition
1:1	mm	±1	С	21 302359			31	02
1:1 mm ± 1 C 21 $5U2559$ $0A0$ 31 02 This drawing must not be copied, published or used in any other way without permission \Box VELUX A/S reg. office: Ådalsvej 99, DK-2970 Hørsholm. CVR-no. 30003519								



Edition	Description of change	Date



----- = Primered areas

Notes:

1. Primer should be dry to tacky before installation.

2. Prime using only approved silicone primer.

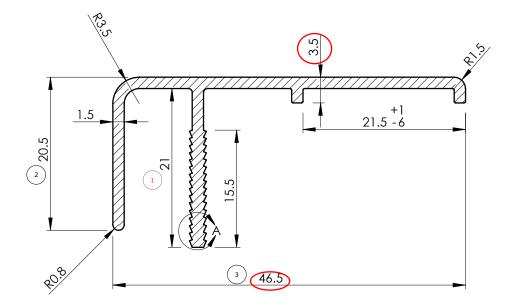
CDx, CEx, CTx, CHx, CGx, Cjx SKY-PRS **VELUX** 450 Old Brickyard Rd., Greenwood, South Carolina 29648 Clamp cover, Inner Frame, & Domes Approvals Primer Placement Checked by/drawn by/date /MM/29.03.2016 Product instructions no. Operation Edition Category Scale Unspec. meas. General tolerance 21 0A0 52 01 1:1mm

VELUX America Inc.

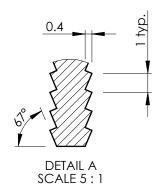
CONFIDENTIAL

SolidWorks

Edition	Description of change	Date



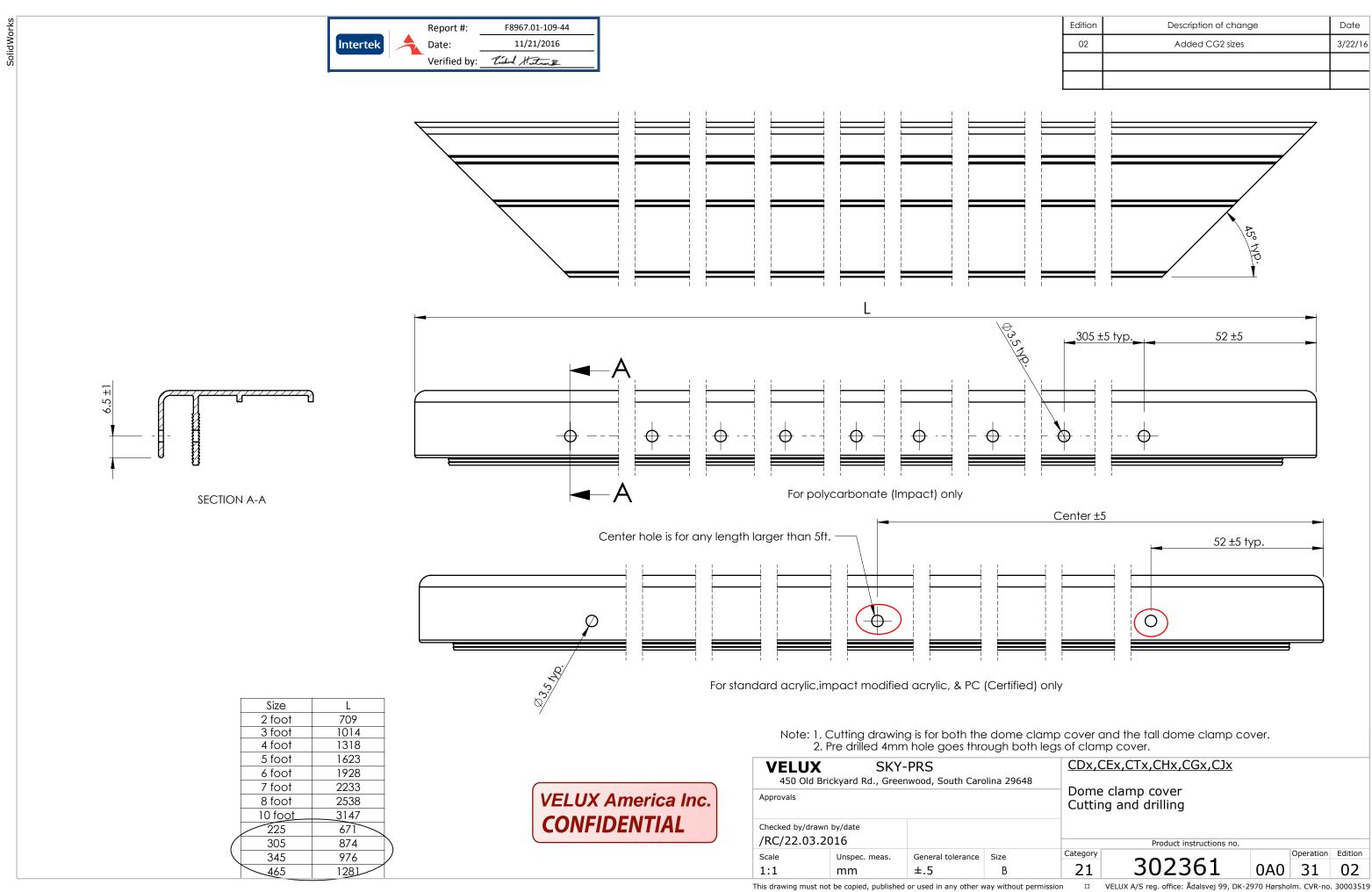
VELUX America Inc. CONFIDENTIAL

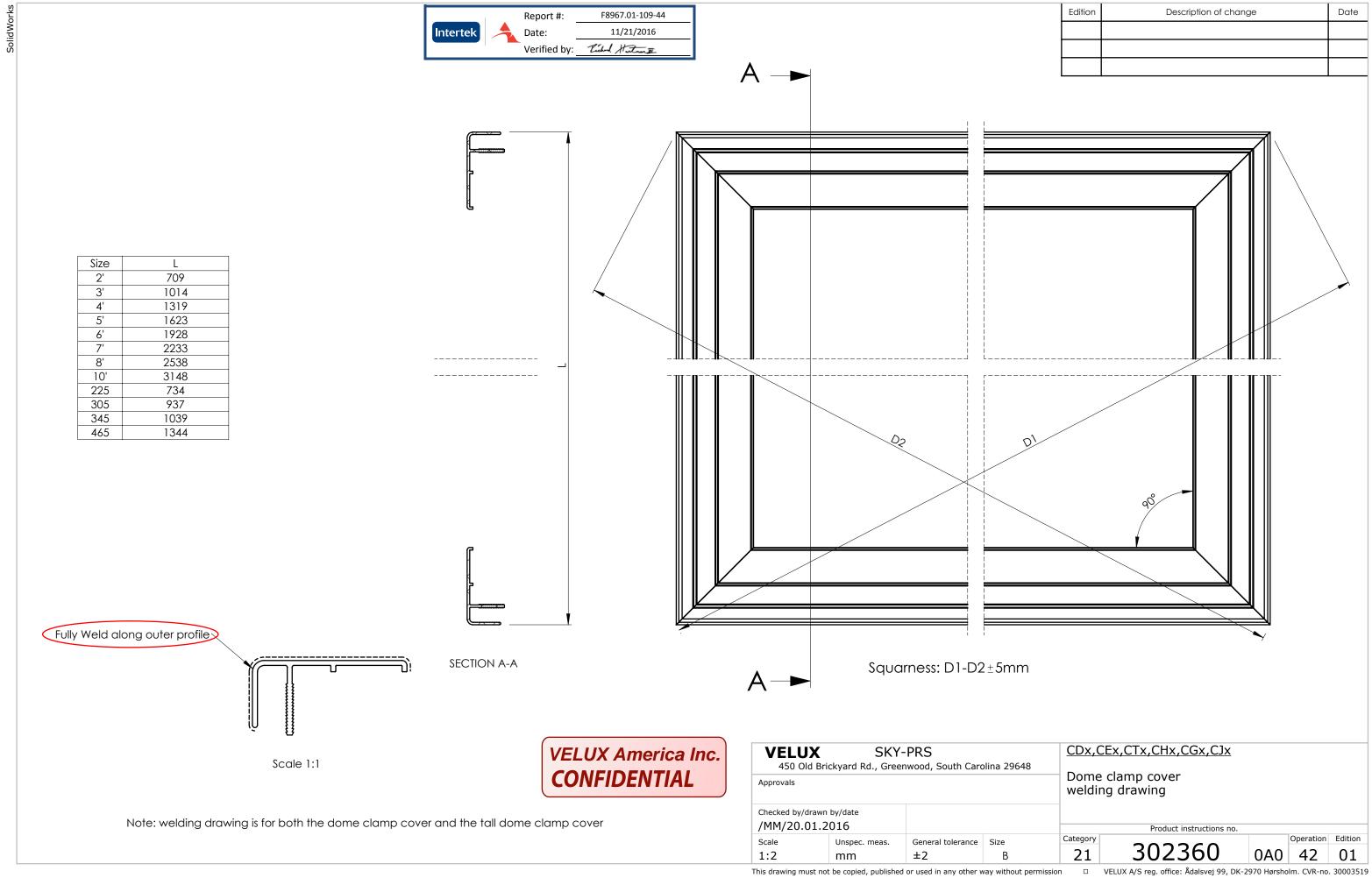


Notes:

- Cross sectional area- 138 mm sq.
 Break Corners- .38R
 Purchased lineal length is 120"

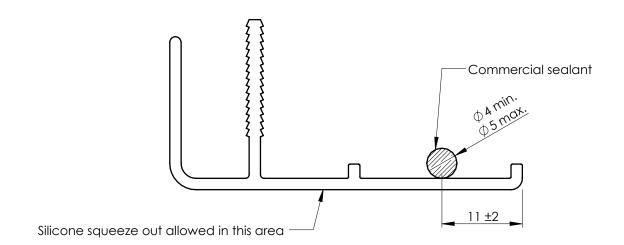
	Material			Specifications - generally				
6063/T5 Aluminum			Extruded Aluminum-Generally 309078.64					
VELUX SKY-PRS 450 Old Brickyard Rd., Greenwood, South Carolina 29648			CDx,CEx,CTx,CHx,CGx,CJx					
Approvals TMA-A	••			Dome clamp cover Profile				
, ·	Checked by/drawn by/date /MM/21.03.2016			Product instructions no				
Scale 2:1	Unspec. meas.	General tolerance ±.5	Size A	Category 21	302361	000	Operation 00	Edition 01





SolidWorks

Edition	Description of change	Date
02	Added note	3/29/16



Notes:

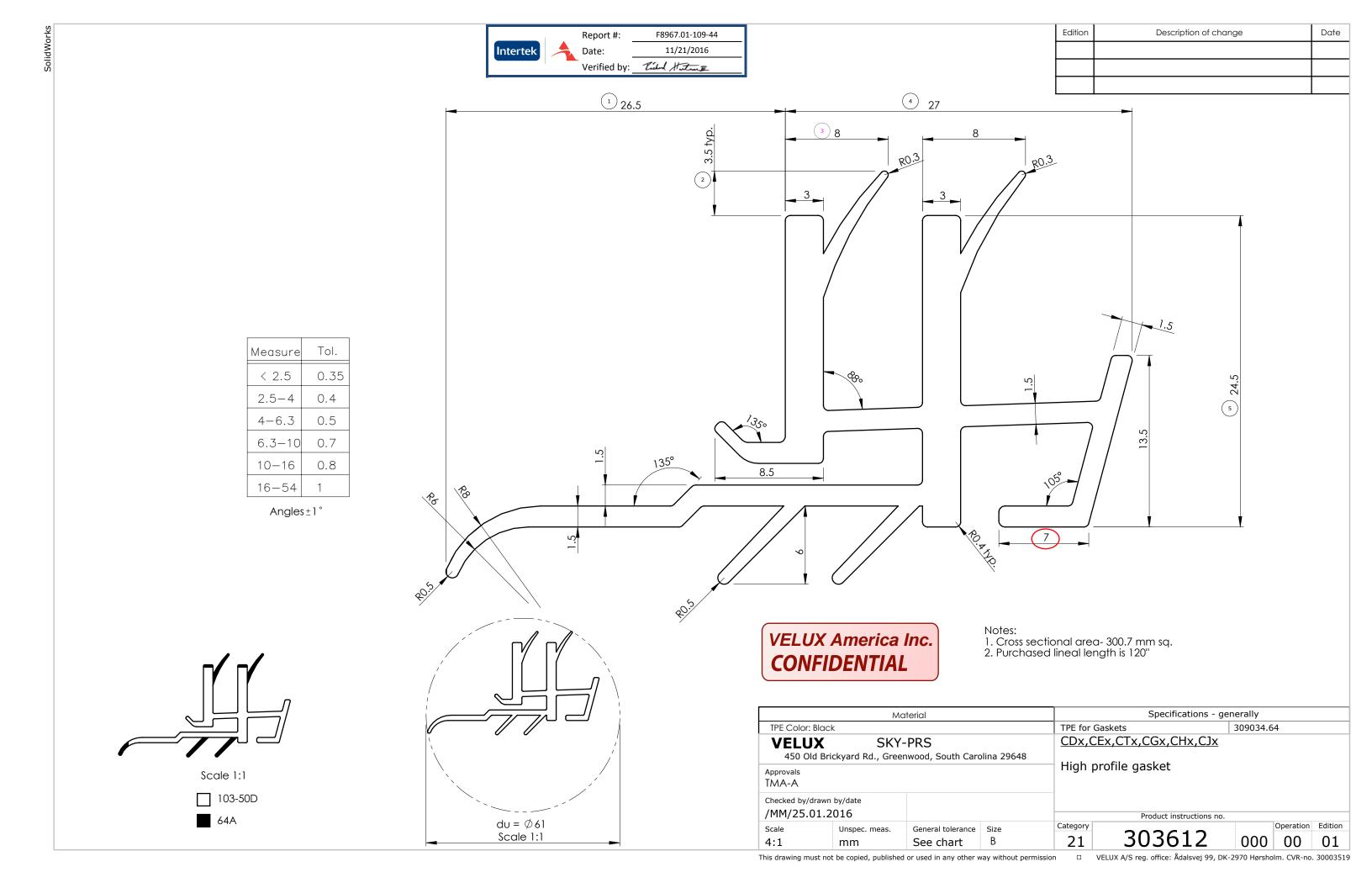
Silicone bead shape is not important.

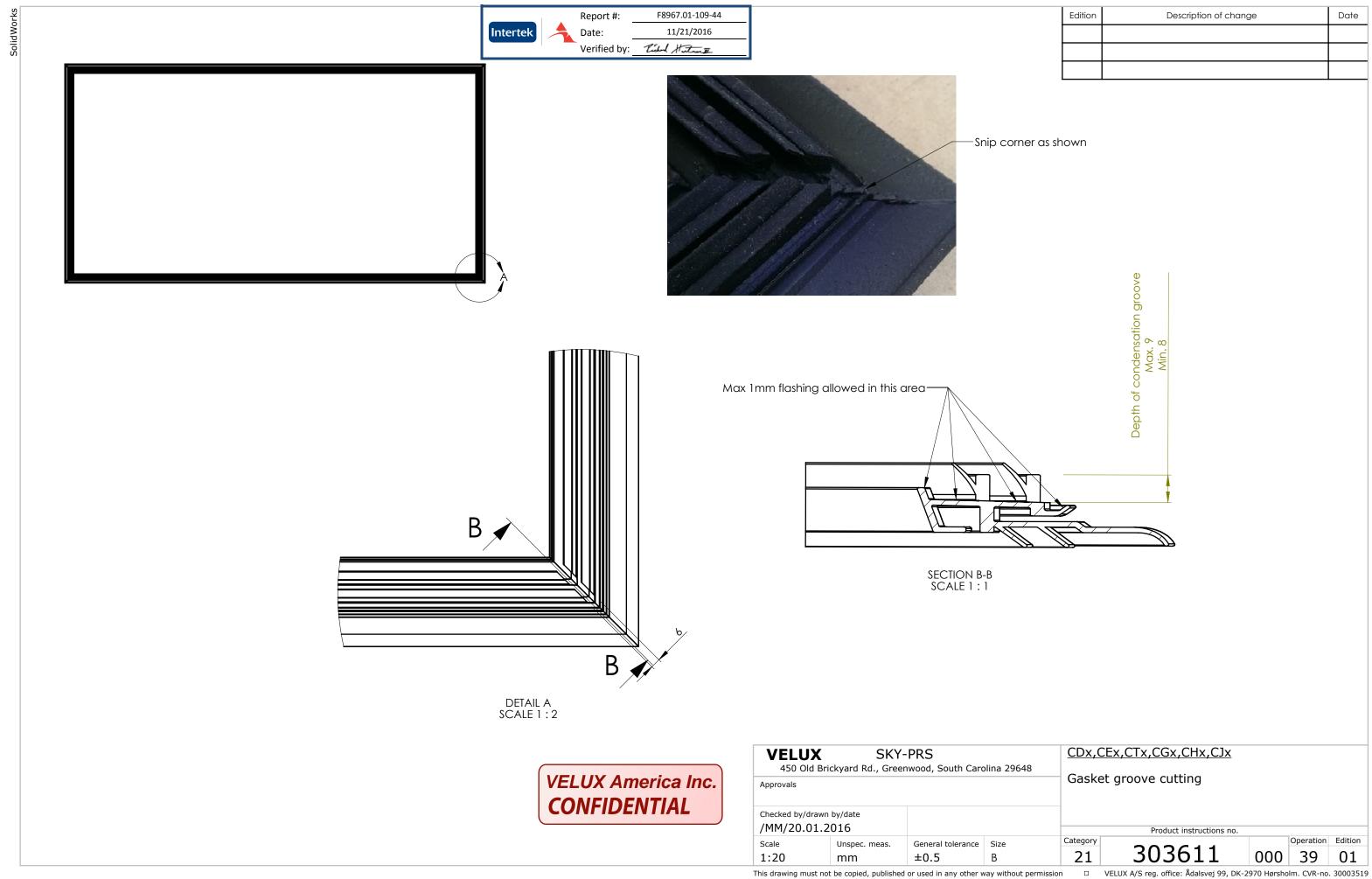
Min/Max diameter is used to determine total area.

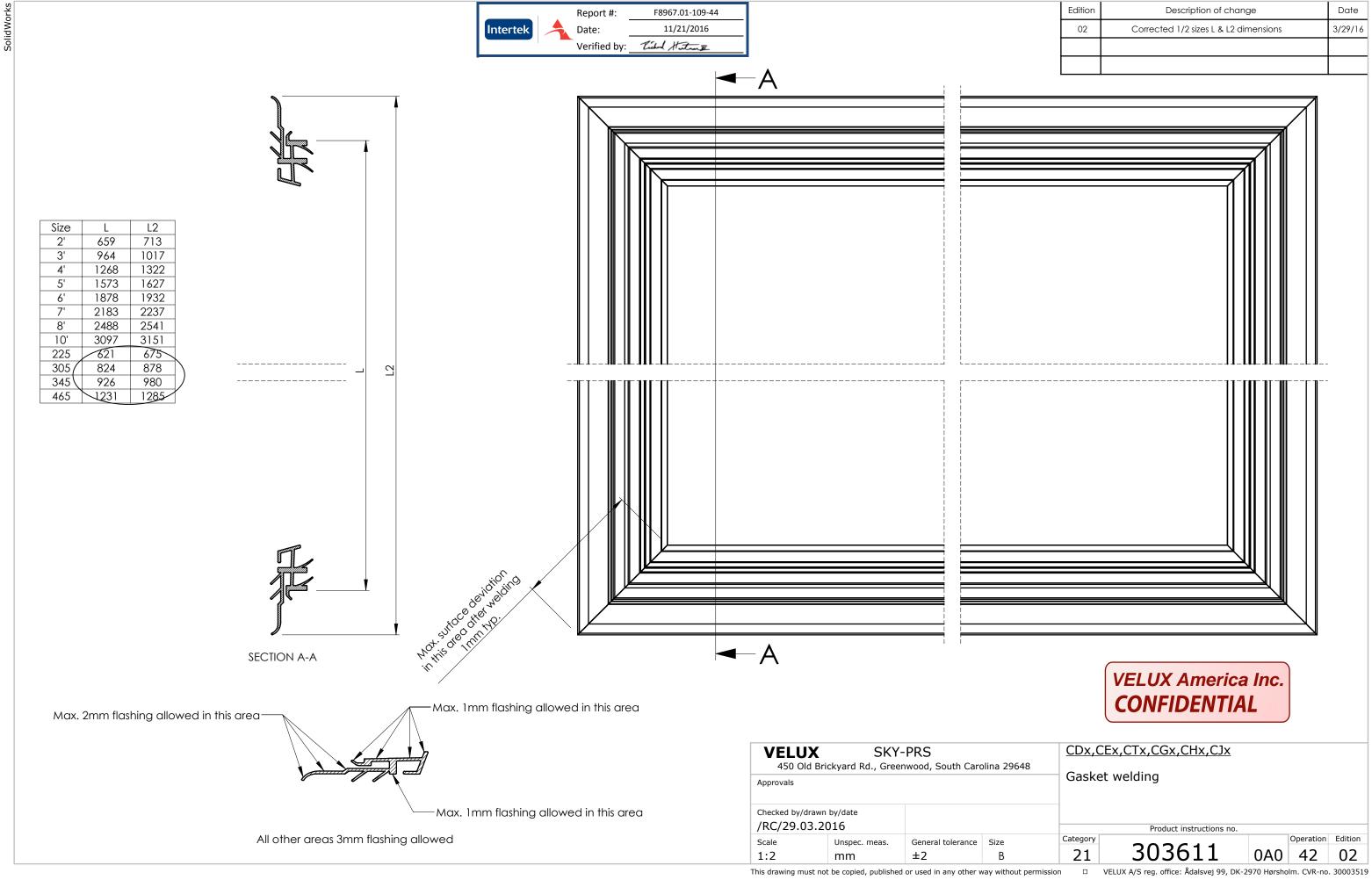
No gaps in silicone allowed.

No squeeze out allowed on lens.

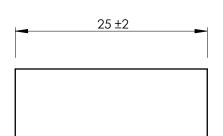
(Specifications - ge	enerally		
				Silicone for	commercial application	309213.6	54	
VELU 450 Old	X SKY d Brickyard Rd., Gree	-PRS nwood, South Card	olina 29648	CDx,CEx,CTx,CHx,CGx,CJx				
Approvals		Clamp Frame Silicone placement						
Checked by/di	**				Product instructions no.			
Scale 2:1	Unspec. meas.	General tolerance ±1	Size A	Category 21	303660	0A0	Operation 52	Edition 02

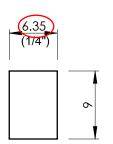






Edition	Description of change	Date
02	Revised material description	3/29/16

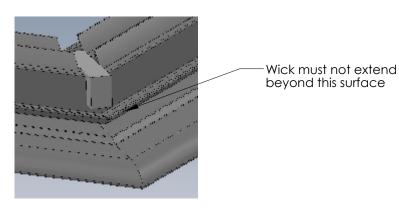


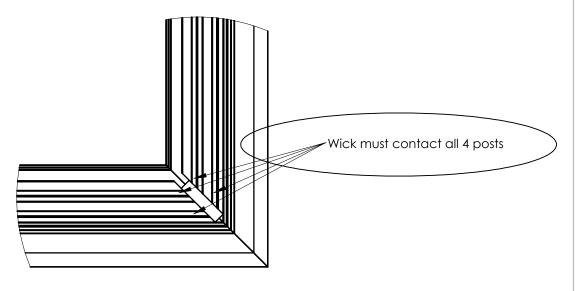


	Material			Specifications - generally				
Wool felt fo	Vool felt for wicking (grey)			Foam gasket wick mat'l commercial domes 309212.64				
VELU	VELUX SKY-PRS			CDx,CEx,CTx,CGx,CHx,CJx				
450 O	450 Old Brickyard Rd., Greenwood, South Carolina 29648			Caalcal	Li als			
Approvals	Approvals			Gasket wick				
۸T	ЛА-B			Profile/cutting				
	drawn by/date			T TOTTIC,	Cutting			
/MM/29.	03.2016				Product instructions no.			
Scale	Unspec. meas.	General tolerance	Size	Category	205650		Operation	Edition
2:1	mm	±1	Α	21	305659	000	00	02

SolidWorks

Edition	Description of change			
02	Added note	3/29/16		





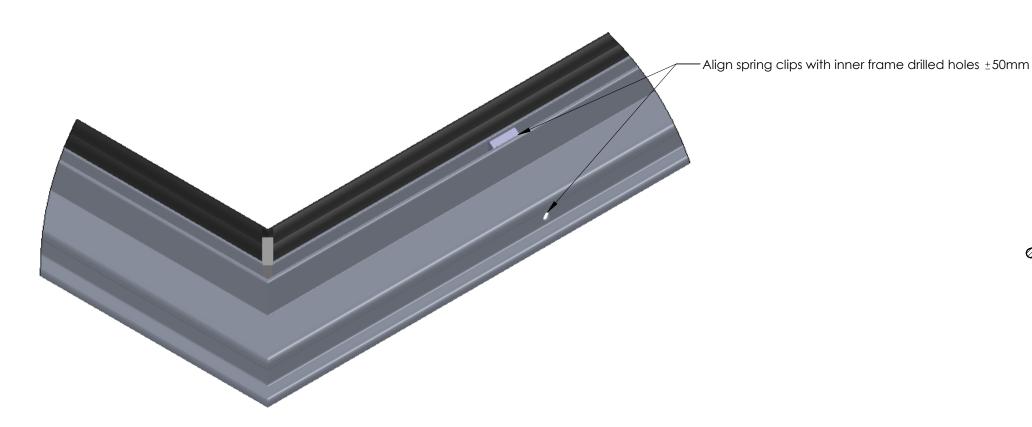
DETAIL A SCALE 1:2

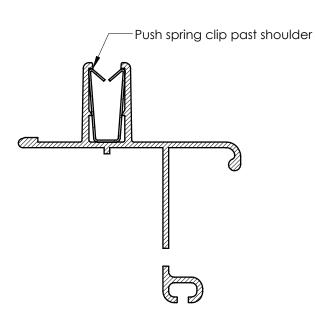
Place wicks in all four corners

VELUX SKY-PRS 450 Old Brickyard Rd., Greenwood, South Carolina 29648				CDx,CEx,CTx,CGx,CHx,CJx					
Approvals	Approvals				Gasket Wick placement				
Checked by/drawn by/date /MM/29.03.2016				Product instructions no.					
Scale 1:10	Unspec. meas.	General tolerance ± 1	Size A	Category 21	305659	0A0	Operation 52	Edition 02	



Edition	Description of change	
02	Revised view	3/29/16





VELUX SKY-PRS 450 Old Brickyard Rd., Greenwood, South Carolina 29648			CDx,CEx,CTx,CGx,CHx,CJx					
Approvals			Spring clip placement					
Checked by/drawn by/date /MM/29.03.2016					Product instructions no.			
Scale	Unspec. meas.	General tolerance	Size	Category	206222		Operation	Edition
1:10	mm	±	В	21	306222	0A0	52	02

