

NFRC U-FACTOR, SHGC, VT, & CONDENSATION RESISTANCE COMPUTER SIMULATION REPORT

(Revised)

Rendered to: NEON ENERGY

SERIES/MODEL: ULTRA Sliding Door

Report Number:H0122.02-301-45Original Report Date:04/06/17Revised Report Date:12/12/18



NFRC U-FACTOR, SHGC, VT, & CONDENSATION RESISTANCE <u>COMPUTER SIMULATION REPORT</u>

(Revised)

Rendered to: NEON ENERGY 4989 East La Palma Ave. Anaheim, California 92807

Report Number:	H0122.02-301-45
Simulation Date:	04/06/17
Original Report Date:	04/06/17
Revised Report Date:	12/12/18

Project Summary:

Architectural Testing, Inc., an Intertek Company (Intertek-ATI) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

*NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.

Standards:

ANSI/NFRC 100-2017: Procedure for Determining Fenestration Product U-Factors ANSI/NFRC 200-2017: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence NFRC 500-2017: Procedure for Determining Fenestration Product Condensation Resistance Values

Software:

Frame and Edge Modeling:	THERM 7.4.4
Center-of-Glass Modeling:	WINDOW 7.4.14
Total Product Calculations:	WINDOW 7.4.14
Spectral Data Library:	IGDB 61.0

Simulations Specimen Description:

Series/Model:	ULT	RA Sliding Door
Туре:	Slidi	ng Glass Door, Sliding Glass Door (XX or OX)
Frame Material:	AT	Aluminum w/ Thermal Breaks - All Members
Sash Material:	AU	Thermally Improved
Standard Size:	2000	mm x 2000mm



Modeling Assumptions/Technical Interpretations:

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.
- 2) Sill with and without reinforcement grouped per ANSI/NFRC 100-2018, Section
 - 4.2.1.E. Sill with reinforcement is the group leader.

Specialty Products Table:

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 7.4.14. The method gives overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.010739	0.013828	0.016705
SHGC1	0.742387	0.650919	0.565769
VT0	0.000000	0.000000	0.000000
VT1	0.731648	0.637090	0.549065

SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0) VT = VT0 + VTc (VT1 - VT0)

Validation Matrix:

The following products are part of a validation matrix. Only one is required for validation testing.

Product Line	Report Number
None	-



Spacer Option Description

	Sealant		
Spacer Type	Primary	Secondary	Code
Aluminum Spacer	Butyl Rubber	Silicone	A1-D
Chromatech Ultra Spacer	Butyl Rubber	Polysulphide	TS-D
Swisspacer	Butyl Rubber	Silicone	TP-D

Grid Option Description

Grid Size	Grid Type	Grid Pattern
None	-	-

Reinforcement Option Description

Location	Material
None	-

Gas Filling Technique Description

Fill Type	Method
90% Argon	Dual Probe

Edge-of-Glass Construction

Interior Condition	EPDM gasket between the glass and the glazing stop.
Exterior Condition	EPDM gasket between the glass and the glazing stop.

Weatherstripping

Туре	Quantity	Location
EPDM Gasket	2 Rows	All members of the sash
EPDM Gasket	1 Row	Each meeting stile
Mohair	1 Row	Head, sill and jambs
Mohair	2 Rows	Each meeting stile and top rails

Frame/Sash Materials Finish

Interior	Painted Aluminum
Exterior	Painted Aluminum



	1	1		r 1				maing De				1		
A	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	¥74-91	Low-e (Surface#)		Tint	Spacer	: Grid Type
	τ	J-Facto	r	Solar		ids (None		nt (SHGC)	V ISID	le Transmitt Grids (None / <1		(1)	Conder Resist	
1	SNX 5	123 / A	Arg / Cl	r - 24m	m (6mi	n-6mm)							
	0.221	0.472	0.224					ARG90		0.021(#2)		CL	A1-D	Ν
	U-Facto	or	0.41	SHGC (N)			0.18	VT (N)		0.37		CR	39
2	SNX 6	5227 / A	Arg / Cl	r - 24m	m (6mi	n-6mm)							
	0.221	0.472	0.224					ARG90		0.020(#2)		CL	A1-D	N
	U-Facto	or	0.41	SHGC (N)			0.20	VT (N)		0.45		CR	39
3	Clima	Guard F	Premiur	n T / A	rg / Clr	- 25mr	n (6mn	n-5mm)						
	0.230	0.551	0.185					ARG90		0.035(#2)		CL	A1-D	N
	U-Facto	or	0.42	SHGC (N)			0.38	VT (N)		0.56		CR	38
4	SN 402	23 / Ar	g / Clr ·	- 25mm	(6mm-	-5mm)								
	0.230	0.551	0.185					ARG90		0.026(#2)		CI	A1-D	Ν
								111(0)/0		0.020(112)				11
	U-Facto	or		SHGC (N)			0.17	VT (N)	0.020(#2)	0.29		CR	38
5			0.42			-5mm)			VT (N)	0.020(#2)	0.29			
5	SN 512		0.42 g / Clr -	SHGC (- 25mm		-5mm)			VT (N)	0.025(#2)	0.29	CL	CR	
5	SN 512	28 / Ar 0.551	0.42 g / Clr - 0.185	SHGC (- 25mm	(6mm-	-5mm)		0.17	VT (N) VT (N)		0.29 0.37		CR	38
5	SN 512 0.230 U-Facto	28 / Arg 0.551 or	0.42 g / Clr · 0.185 0.41	SHGC (- 25mm	(6mm- N)			0.17 ARG90					CR A1-D	38 N
	SN 512 0.230 U-Facto SN 622	28 / Arg 0.551 or	0.42 g / Clr · 0.185 0.41 g / Clr ·	SHGC (- 25mm SHGC (- 25mm	(6mm- N)			0.17 ARG90					CR A1-D CR	38 N
	SN 512 0.230 U-Facto SN 622 0.230 U-Facto	28 / Ar ₅ 0.551 or 34 / Ar ₅ 0.551 or	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42	SHGC (- 25mm SHGC (- 25mm SHGC ((6mm- N) (6mm- N)	-5mm)		0.17 ARG90 0.20		0.025(#2)		CL	CR A1-D CR	38 N 38
	SN 512 0.230 U-Facto SN 622 0.230 U-Facto	28 / Ar ₅ 0.551 or 34 / Ar ₅ 0.551 or	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42	SHGC (- 25mm SHGC (- 25mm	(6mm- N) (6mm- N)	-5mm)		0.17 ARG90 0.20 ARG90	VT (N)	0.025(#2)	0.37	CL	CR A1-D CR A1-D	38 N 38 N
6	SN 512 0.230 U-Facto SN 622 0.230 U-Facto SN 703	28 / Ar ₅ 0.551 or 34 / Ar ₅ 0.551 or	0.42 g / Clr - 0.185 0.41 g / Clr - 0.185 0.42 g / Clr -	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm	(6mm- N) (6mm- N)	-5mm)		0.17 ARG90 0.20 ARG90	VT (N)	0.025(#2)	0.37	CL	CR A1-D CR A1-D CR	38 N 38 N
6	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 700 0.230 U-Facto	28 / Ar; 0.551 r 34 / Ar; 0.551 r 37 / Ar; 0.551 r	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.42	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC ((6mm- N) (6mm- N) (6mm- (6mm-	-5mm) -5mm)		0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26	VT (N)	0.025(#2)	0.37	CL CL	CR A1-D CR A1-D CR	38 N 38 N 38 38
6	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto ClimaC	28 / Arg 0.551 or 34 / Arg 0.551 or 37 / Arg 0.551 or Guard N	0.42 g / Clr 0.185 0.41 g / Clr 0.185 0.42 g / Clr 0.185 0.41 Neutral	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar	(6mm- N) (6mm- N) (6mm- (6mm-	-5mm) -5mm)	1 (6mm	0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26	VT (N) VT (N)	0.025(#2)	0.37	CL CL	CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N
6	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto ClimaC	28 / Ar; 0.551 r 34 / Ar; 0.551 r 37 / Ar; 0.551 r	0.42 g / Clr 0.185 0.41 g / Clr 0.185 0.42 g / Clr 0.185 0.41 Neutral	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar	(6mm- N) (6mm- N) (6mm- (6mm-	-5mm) -5mm)	1 (6mm	0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26	VT (N) VT (N)	0.025(#2)	0.37	CL CL	CR A1-D CR A1-D CR A1-D	38 N 38 N 38 N
6 7 8	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto 0.226 U-Facto U-Facto	28 / Ar 0.551 or 34 / Ar 0.551 or 37 / Ar 0.551 or Guard N 0.551 or	0.42 g / Clr 0.185 0.41 g / Clr 0.185 0.42 g / Clr 0.185 0.41 Neutral 0.185 0.45	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar SHGC ((6mm- N) (6mm- (6mm- (6mm- g / Clr N)	-5mm) -5mm) - 25mm		0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26 -5mm)	VT (N) VT (N)	0.025(#2) 0.026(#2) 0.022(#2)	0.37	CL CL CL	CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 38
6	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 700 0.230 U-Facto ClimaC 0.226 U-Facto SNX 6	28 / Ar; 0.551 r 34 / Ar; 0.551 r 0.551 r Guard N 0.551 r 0.551 r	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.41 Neutral 0.185 0.45 xrg / Cl	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar SHGC (r - 24m	(6mm- N) (6mm- (6mm- (6mm- g / Clr N)	-5mm) -5mm) - 25mm		0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26 -5mm) ARG90 0.40	VT (N) VT (N) VT (N)	0.025(#2) 0.026(#2) 0.022(#2) 0.022(#2) 0.171(#2)	0.37	CL CL CL	CR A1-D CR CR A1-D CR CR A1-D CR CR	38 N 38 N 38 N 38 N 38 N
6 7 8	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto 0.226 U-Facto SNX 6 0.151	28 / Ar 0.551 r 34 / Ar 0.551 r 37 / Ar 0.551 r 37 / Ar 0.551 r 30 ard N 0.551 r 227 / A 0.630	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.41 Neutral 0.185 0.45 xrg / Cl	SHGC (- 25mm SHGC (70 / Ar SHGC (r - 24m	(6mm- N) (6mm- N) (6mm- (6mm- (6mm- Clr N) m (4mi	-5mm) -5mm) - 25mm		0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26 -5mm) ARG90	VT (N) VT (N) VT (N) VT (N)	0.025(#2) 0.026(#2) 0.022(#2)	0.37	CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 38 N
6 7 8 9	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 700 0.230 U-Facto O.226 U-Facto SNX 6 0.151 U-Facto	28 / Ar; 0.551 r 34 / Ar; 0.551 r 0.551 r 37 / Ar; 0.551 r 30.551 r 227 / A 0.630 r	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.41 Veutral 0.185 0.45 vrg / Cl 0.154 0.42	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar SHGC (r - 24m SHGC ((6mm- N) (6mm- (6mm- (6mm- (6mm- (6mm- (7)) (7) (7) (7) (7) (7) (7) (7) (7) (7	-5mm) -5mm) - 25mm n-4mm)	0.17 ARG90 0.20 ARG90 0.23 0.23 ARG90 0.26 -5mm) ARG90 0.40 ARG90 0.20	VT (N) VT (N) VT (N)	0.025(#2) 0.026(#2) 0.022(#2) 0.022(#2) 0.171(#2)	0.37	CL CL CL	CR A1-D CR CR A1-D CR CR A1-D CR CR	38 N 38 N 38 N 38 N 38 N 38
6 7 8	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto ClimaC 0.226 U-Facto SNX 6 0.151 U-Facto ClimaC	28 / Arg 0.551 r 34 / Arg 0.551 r 37 / Arg 0.551 r 37 / Arg 0.551 r 0.630 r Guard F	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.41 Neutral 0.185 0.45 Arg / Cl 0.154 0.154	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar SHGC (r - 24m SHGC (n T / A	(6mm- N) (6mm- (6mm- (6mm- (6mm- (6mm- (7)) (7) (7) (7) (7) (7) (7) (7) (7) (7	-5mm) -5mm) - 25mm n-4mm)	0.17 ARG90 0.20 ARG90 0.23 ARG90 0.26 -5mm) ARG90 0.40 0.40 0.20 1-4mm)	VT (N) VT (N) VT (N) VT (N)	0.025(#2) 0.026(#2) 0.026(#2) 0.022(#2) 0.171(#2) 0.020(#2)	0.37 0.45 0.51	CL CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 38 N 38 N 38 N 38
6 7 8 9	SN 511 0.230 U-Facto SN 622 0.230 U-Facto SN 702 0.230 U-Facto ClimaC 0.226 U-Facto SNX 6 0.151 U-Facto ClimaC	28 / Ar; 0.551 or 34 / Ar; 0.551 or 37 / Ar; 0.551 or 30.551 or 227 / A 0.630 or Guard F 0.630	0.42 g / Clr · 0.185 0.41 g / Clr · 0.185 0.42 g / Clr · 0.185 0.41 Neutral 0.185 0.45 Arg / Cl 0.154 0.154	SHGC (- 25mm SHGC (- 25mm SHGC (- 25mm SHGC (70 / Ar SHGC (r - 24m SHGC (n T / A	(6mm- N) (6mm- (6mm- (6mm- (6mm- (6mm- (6mm- (6mm- (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm) (6mm- (6mm) (6mm- (6mm)) (6mm- (6mm) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm)) (6mm- (6mm)) (6mm- (6mm)) (6mm)) (6mm- (6mm)) (6mm)) (6mm- (6mm)) (6mm)) (6mm)) (6mm)) (6mm)) (6mm)) (6mm)) (6mm) (6mm)) (6mm)) (6mm)) (6mm)) (6mm)) (6mm)) (7mm) (7mm)) (7mm) (7mm)) (7mm) (7mm)) (7mm) (7mm) (7mm)) (7mm) (7mm) (7mm)) (7mm)	-5mm) -5mm) - 25mm n-4mm)	0.17 ARG90 0.20 ARG90 0.23 0.23 ARG90 0.26 -5mm) ARG90 0.40 ARG90 0.20	VT (N) VT (N) VT (N) VT (N)	0.025(#2) 0.026(#2) 0.022(#2) 0.022(#2) 0.171(#2)	0.37 0.45 0.51	CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 38 N 38 N



mmary Sheet
ſ

	1		1	1		011		maing De	1			1	<u>г</u>	
A	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill		Low-e (Surface#)		Tint	Spacer	Grid Type
	τ	J -Facto	or	Solar		Gain Co ids (None .		nt (SHGC)	Visib	le Transmitt Grids (None / <1		VT)	Conder Resist	
11	SN 402	23 / Ar	g / Clr	- 24mm	(4mm-	-4mm)							-	
	0.151	0.630	0.154					ARG90		0.026(#2)		CL	A1-D	Ν
	U-Facto	or	0.42	SHGC (N)			0.17	VT (N)		0.29		CR	38
12	SN 512	28 / Ar	g / Clr	- 24mm	(4mm-	-4mm)								
	0.151	0.630	0.154					ARG90		0.025(#2)		CL	A1-D	Ν
	U-Facto	or	0.42	SHGC (N)			0.20	VT (N)		0.37		CR	38
13	SN 622	34 / Ar	g / Clr	- 24mm	(4mm-	-4mm)			-				-	
	0.151	0.630	0.154					ARG90		0.026(#2)		CL	A1-D	N
	U-Facto	or	0.42	SHGC (N)			0.24	VT (N)		0.46		CR	38
14	SN 703	37 / Ar	g / Clr	- 24mm	(4mm-	-4mm)								
	0.151	0.630	0.154							0.000(110)		CI		N
			0.154					ARG90		0.022(#2)			A1-D	Ν
	U-Facto			SHGC (N)			ARG90 0.26	VT (N)	0.022(#2)	0.51	ICL	AI-D CR	IN 38
15		or	0.42		. ,	- 24mm	n (4mm	0.26	VT (N)	0.022(#2)	0.51			
15	Clima	or	0.42 Neutral	SHGC (70 / Ar	. ,	- 24mm	n (4mm	0.26	VT (N)	0.022(#2)	0.51	CL	CR	
15	Clima	or Guard N 0.630	0.42 Neutral 0.154	SHGC (70 / Ar	g / Clr	- 24mn	n (4mm	0.26 -4mm)	VT (N) VT (N)		0.51		CR	38
15	Clima 0.148 U-Facto	or Guard N 0.630 or	0.42 Neutral 0.154 0.45	SHGC (70 / Ar	ng / Clr N)			0.26 -4mm) ARG90 0.42					CR A1-D	38 N
	Clima 0.148 U-Facto Clima	or Guard N 0.630 or	0.42 Neutral 0.154 0.45 Neutral	SHGC (70 / Ar SHGC (70 / Ai	ng / Clr N)			0.26 -4mm) ARG90 0.42					CR A1-D CR	38 N
16	Clima 0.148 U-Facto Clima 0.226 U-Facto	or Guard N 0.630 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48	SHGC (70 / Ar SHGC (70 / Ai SHGC (g / Clr N) r / Clr - N)	- 25mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41		0.171(#2)		CL	CR A1-D CR	38 N 38
	Clima 0.148 U-Facto Clima 0.226 U-Facto	or Guard N 0.630 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48	SHGC (70 / Ar SHGC (70 / Ai	g / Clr N) r / Clr - N)	- 25mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41	VT (N)	0.171(#2)	0.50	CL	CR A1-D CR A1-D	38 N 38 N
16	Clima 0.148 U-Facto Clima 0.226 U-Facto Clima	or Guard N 0.630 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai	g / Clr N) r / Clr - N)	- 25mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41	VT (N)	0.171(#2)	0.50	CL	CR A1-D CR A1-D CR	38 N 38 N
16	Climat 0.148 U-Facto 0.226 U-Facto Climat 0.148 U-Facto	r Guard N 0.630 or Guard N 0.551 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.154	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (g / Clr N) r / Clr - N) r / Clr - N)	- 25mm - 22mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 -4mm) AIR 0.42	VT (N)	0.171(#2)	0.50	CL	CR A1-D CR A1-D CR	38 N 38 N 38 38
16	Clima 0.148 U-Facto 0.226 U-Facto Clima 0.148 U-Facto Clima	r Guard N 0.630 r Guard N 0.551 r Guard N 0.551 r Guard N	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.48	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar	g / Clr N) r / Clr - N) r / Clr - N)	- 25mm - 22mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 -4mm) AIR 0.42	VT (N) VT (N)	0.171(#2)	0.50	CL	CR A1-D CR A1-D CR A1-D	38 N 38 N 38 N
16	Clima 0.148 U-Facto 0.226 U-Facto Clima 0.148 U-Facto Clima	r Guard N 0.630 or Guard N 0.551 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.48	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar	g / Clr N) r / Clr - N) r / Clr - N)	- 25mm - 22mm	(6mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 -4mm) AIR 0.42	VT (N) VT (N)	0.171(#2)	0.50	CL	CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N
16 17 18	Clima0 0.148 U-Facto 0.226 U-Facto 0.148 U-Facto 0.148 U-Facto	r Guard N 0.630 r Guard N 0.551 r Guard N 0.551 r Guard N 0.551 r	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.48 Neutral 0.154 0.154	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar SHGC (g / Clr N) r / Clr - N) r / Clr - g / Clr N) g / Clr	- 25mm - 22mm - 22mm	(6mm- (4mm-	0.26 -4mm) ARG90 0.42 5mm) AIR 0.41 4mm) AIR 0.42 -4mm)	VT (N) VT (N)	0.171(#2) 0.171(#2) 0.171(#2)	0.50	CL CL CL	CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 39
16	Climac 0.148 U-Facto Climac 0.226 U-Facto Climac 0.148 U-Facto 0.148 U-Facto SNX 5	r Guard N 0.630 or Guard N 0.551 or Guard N 0.551 or Guard N 0.551 or	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.154 0.154 0.154 0.154 0.154	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar SHGC (r - 24m	g / Clr N) r / Clr - N) r / Clr - g / Clr N) g / Clr	- 25mm - 22mm - 22mm	(6mm- (4mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 4mm) AIR 0.42 -4mm) ARG90	VT (N) VT (N) VT (N)	0.171(#2) 0.171(#2) 0.171(#2)	0.50	CL CL CL	CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 39 N
16 17 18	Clima0 0.148 U-Facto 0.226 U-Facto Clima0 0.148 U-Facto 0.148 U-Facto SNX 5 0.221	r Guard N 0.630 or Guard N 0.551 or Guard N 0.551 or 0.551 or 123 / A 0.472	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.154 0.154 0.154 0.154 0.154	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ar SHGC (70 / Ar	g / Clr N) r / Clr - N) r / Clr - N) g / Clr N) g / Clr N) m (6mi	- 25mm - 22mm - 22mm	(6mm- (4mm-	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 4mm) AIR 0.42 -4mm) ARG90	VT (N) VT (N) VT (N)	0.171(#2) 0.171(#2) 0.171(#2)	0.50	CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 39 N
16 17 18 19	Clima0 0.148 U-Facto 0.226 U-Facto Clima0 0.148 U-Facto 0.148 U-Facto SNX 5 0.221 U-Facto	r Guard N 0.630 r Guard N 0.551 r Guard N 0.551 r 0.551 r 123 / A 0.472 r	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.48 Neutral 0.154 0.45 Nrg / Cl 0.185 0.41	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar SHGC (r - 24m SHGC (g / Clr N) r / Clr - N) r / Clr - N) g / Clr N) m (6mi N)	- 25mm - 22mm - 22mm m-5mm	(6mm- (4mm-)	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 4mm) AIR 0.42 -4mm) ARG90 0.42 ARG90 0.18	VT (N) VT (N) VT (N) VT (N) VT (N) VT (N)	0.171(#2) 0.171(#2) 0.171(#2) 0.171(#2)	0.50	CL CL CL	CR A1-D CR CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 39 N 39
16 17 18	Clima0 0.148 U-Facto 0.226 U-Facto 0.148 U-Facto 0.148 U-Facto SNX 5 0.221 U-Facto SNX 5	r Guard N 0.630 r Guard N 0.551 r Guard N 0.551 r 123 / A 0.472 r	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.45 Neutral 0.154 0.45 Nrg / Cl 0.185 0.41	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar SHGC (70 / Ar SHGC (70 / Ar SHGC (r - 24m SHGC (nmClr-(g / Clr N) r / Clr - N) r / Clr - N) g / Clr N) m (6mi N)	- 25mm - 22mm - 22mm m-5mm	(6mm- (4mm-)	0.26 -4mm) ARG90 0.42 5mm) AIR 0.41 4mm) AIR 0.42 -4mm) ARG90 0.42 ARG90 0.42 ARG90 0.18	VT (N) VT (N) VT (N) VT (N) VT (N) VT (N) n-6mm)	0.171(#2) 0.171(#2) 0.171(#2) 0.171(#2) 0.171(#2) 0.021(#2)	0.50 0.50 0.50 0.50	CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 38 N 39 N 39 N 39 N 39
16 17 18 19	Clima0 0.148 U-Facto 0.226 U-Facto 0.148 U-Facto 0.148 U-Facto SNX 5 0.221 U-Facto SNX 5	r Guard N 0.630 r Guard N 0.551 r Guard N 0.551 r 0.551 r 123 / A 0.472 r	0.42 Neutral 0.154 0.45 Neutral 0.185 0.48 Neutral 0.154 0.45 Neutral 0.154 0.45 Nrg / Cl 0.185 0.41	SHGC (70 / Ar SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ai SHGC (70 / Ar SHGC (70 / Ar SHGC (70 / Ar SHGC (r - 24m SHGC (nmClr-(g / Clr N) r / Clr - N) r / Clr - N) g / Clr N) m (6mi N)	- 25mm - 22mm - 22mm m-5mm	(6mm- (4mm-)	0.26 -4mm) ARG90 0.42 -5mm) AIR 0.41 4mm) AIR 0.42 -4mm) ARG90 0.42 ARG90 0.18	VT (N) VT (N) VT (N) VT (N) VT (N) VT (N) n-6mm)	0.171(#2) 0.171(#2) 0.171(#2) 0.171(#2)	0.50 0.50 0.50 0.50	CL CL CL	CR A1-D CR A1-D CR A1-D CR A1-D CR	38 N 38 N 38 N 39 N 39 N 39



NFRC 100/200/500 Summary Sheet
III TRA Sliding Door

	ULTRA Sliding Door												
D	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)		Tint	Spacer	Grid Type
	τ	J -Fact o	or	Solar		Gain Co		nt (SHGC)	Visible Transmitt Grids (None / <1		Γ)	Conder Resist	
21	SN 512	28 / Arg	g / IS20) - 24m	m (6mr	n-6mm)						
	0.230	0.472	0.221					ARG90	0.025(#2) / 0.198	8(#4)	CL	TP-D	Ν
	U-Facto	r	0.36	SHGC ((N)			0.19	VT (N)	0.36		CR	41
22	22 4mmClr-075PVB-4mmPlanistarSun / Arg / 3mmClr-075PVB-3mmClr - 24mm (8mm-6mm)												
	0.384	0.394	0.311					ARG90	0.026(#2)		CL	A1-D	Ν
	U-Facto	r	0.41	SHGC ((N)			0.25	VT (N)	0.50		CR	39





The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy.

Intertek-ATI is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The values included in this report are not considered in compliance with ANSI/NFRC 100, ANSI/NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable.

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 April 6, 2022.

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:

REVIEWED BY:

David L. Everitt Simulation Technician Kenny C. White Laboratory Manager Simulator-In-Responsible-Charge

DLE:dle H0122.02-301-45

Attachments (pages): This report is complete only when all attachments listed are included. Appendix A: Drawings and Bills of Material (30)



intertek Total Quality. Assured.

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.01R0	04/06/17	All	Original Report Issue. Work Requested by Andreas Georgakis of Neon Energy.
.02R0	07/25/18	All	All therm models updated. All options updated and recalculated in W7. Drawing packet updated.
.02R1	07/30/18	All	Updating modeling assumptions and drawing packet.
.02R2	07/31/18	All	Updated head profile to include VS 84 part. All options updated and recalculated. Drawing packet updated.
.02R3	08/17/18	All	SHGC Table updated.
.02R4	08/27/18	All	SHGC Table updated.
.02R5	10/02/18	All	Manufacturer product code updated for option #22.
.02R6	10/23/18	All	Frame material under Simulation Specimen Description updated to AT. No change to existing results.
.02R7	12/12/18	All	Corrected meeting rail drawing in drawing packet. No change to results.

This report produced from controlled document template ATI 00037, Revised 10/2/2012.



All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

Appendix A

H0122.02-301-45



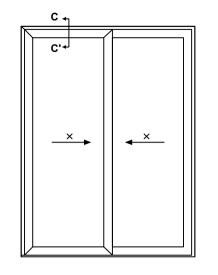


Company Name: Neon Energy

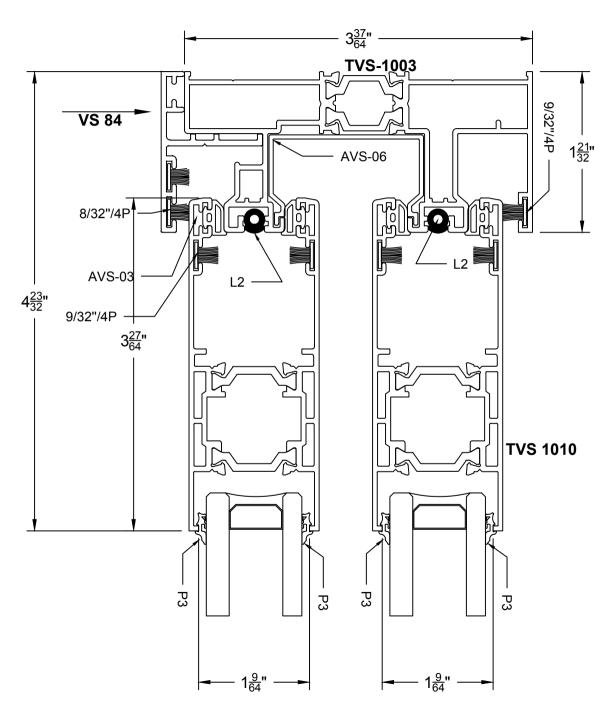
Series/Model: Ultra Sliding Glass Door

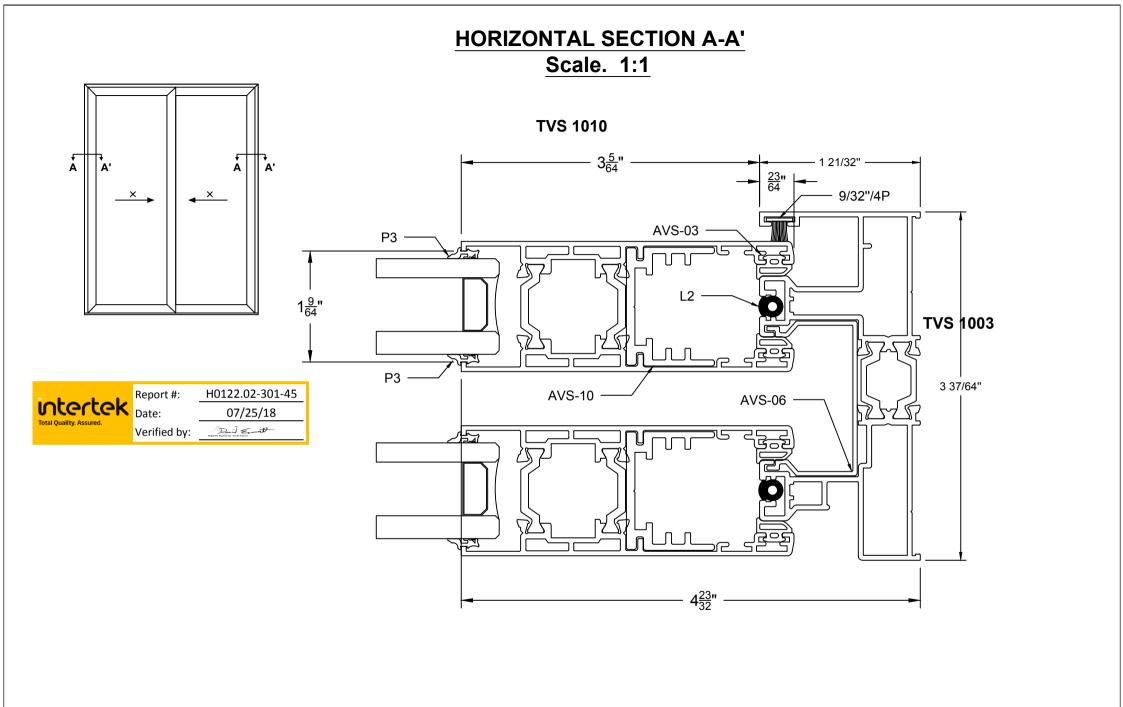
Part #	Part Description	Material	Finish
TVS 1010	-	Aluminum	Painted
-	Sash Thermal Break	Polyamide	-
AVS-10	-	Vinyl	-
TVS-1003 a	-	Aluminum	Painted
TVS-1003 b	-	Aluminum	Painted
-	Head/Jamb Thermal Break	Polyamide	-
AVS-06	-	Vinyl	-
L2	-	EPDM	-
-	Sill Reinforcement	Aluminum	Painted
VSP 11	-	Aluminum	Painted
EIN-1	-	Stainless Steel	-
-	Sill Thermal Break	Polyamide	-
TVS 1013 a	-	Aluminum	Painted
TVS 1013 b	-	Aluminum	Painted
TVS 1013 c	-	Aluminum	Painted
VS 82	-	Aluminum	Painted
AVS-09	-	Vinyl	-
L1	-	EPDM	-
Р3	-	EPDM	-
AVS-03	-	EPDM	-
VS 84	-	Aluminum	Painted

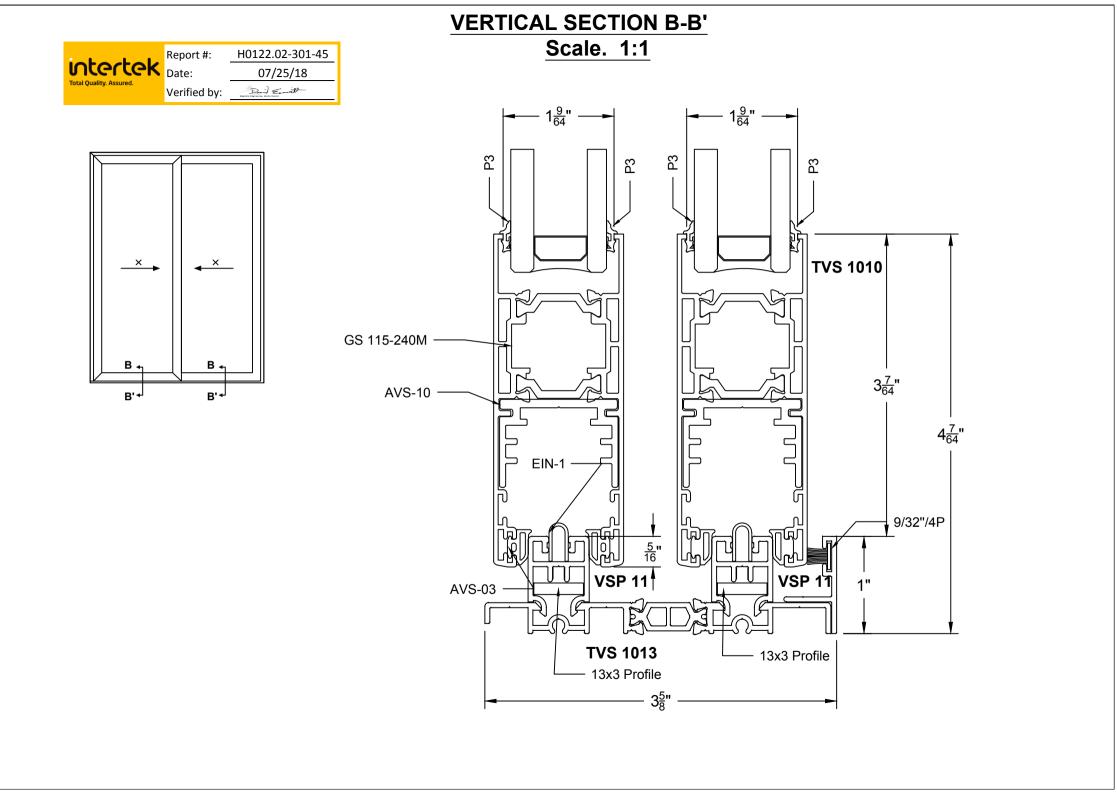
VERTICAL SECTION C-C' Scale. 1:1



to be shelt.	Report #:	H0122.02-301-45
intertek	Date:	07/25/18
Total Quality. Assured.	Verified by:	David Ernett

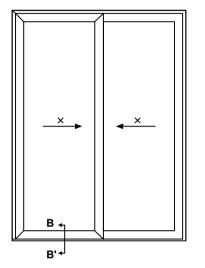


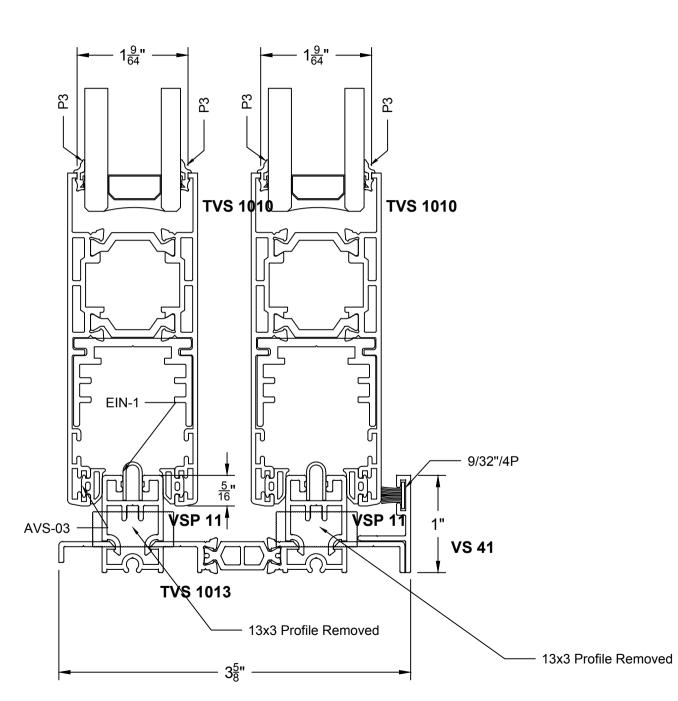


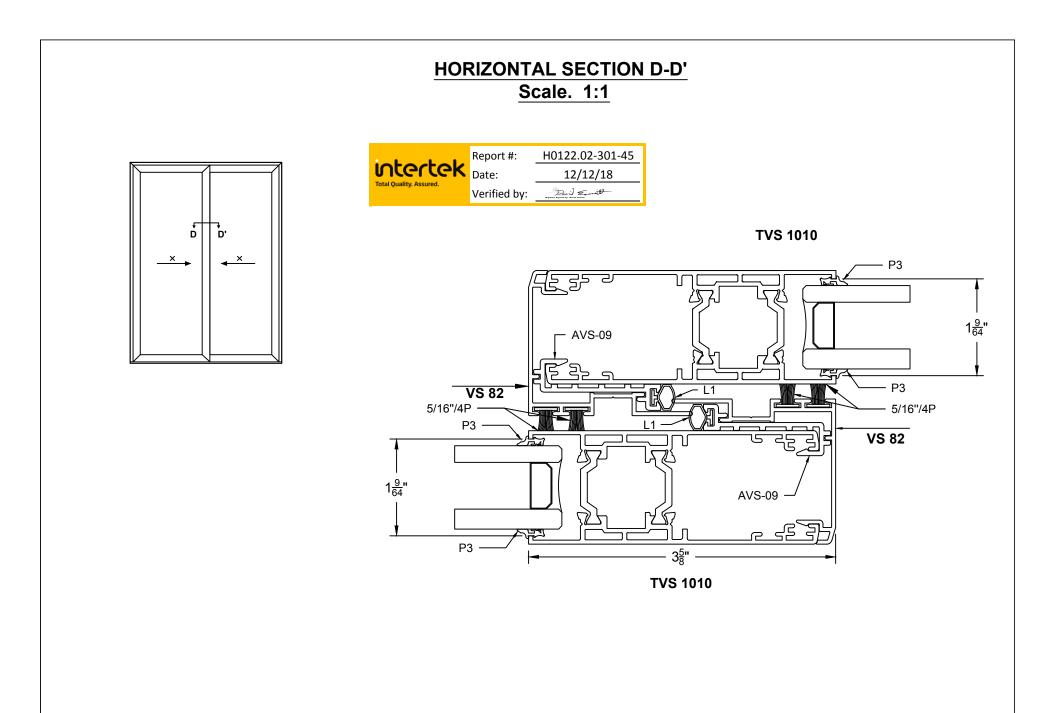


VERTICAL SECTION B-B' Scale. 1:1



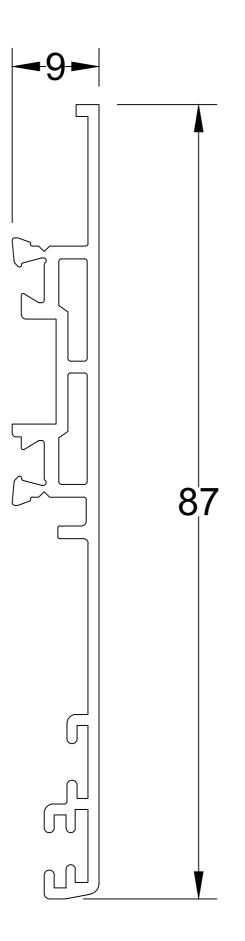






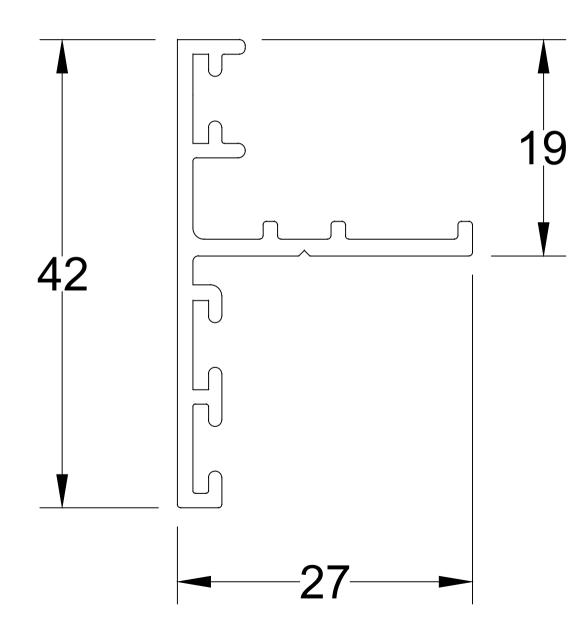
	Report #:	H0122.02-301-45
intertek	Date:	07/25/18
Total Quality. Assured.	Verified by:	David Ermit

TVS 1010



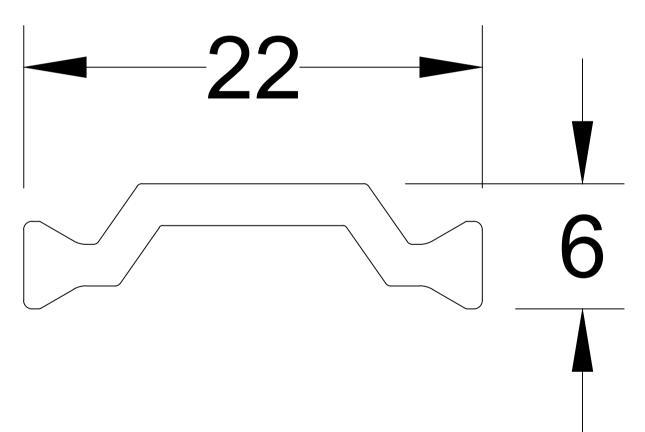


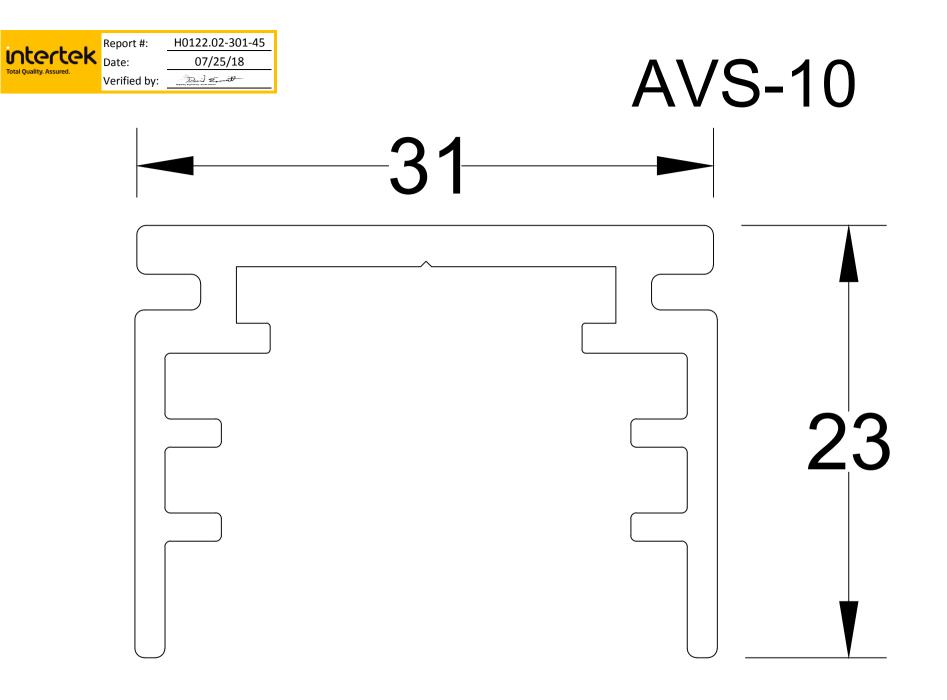
VS 84



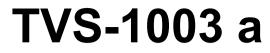


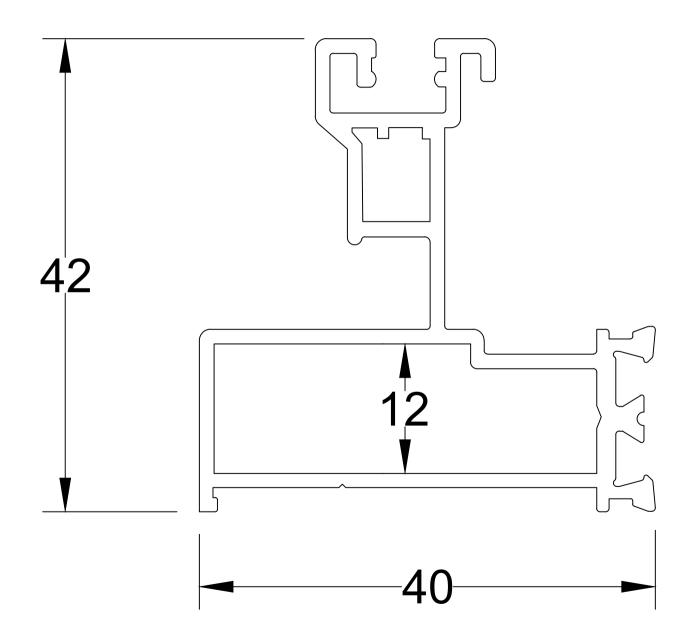
Sash Thermal Break





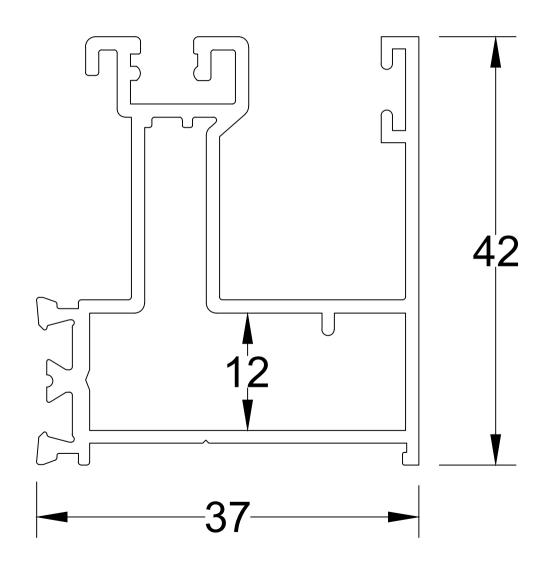


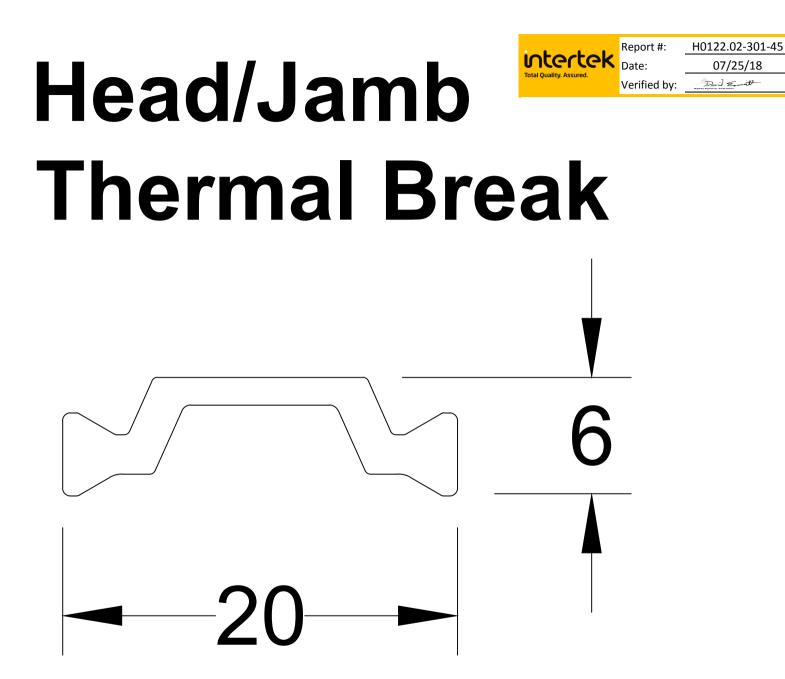




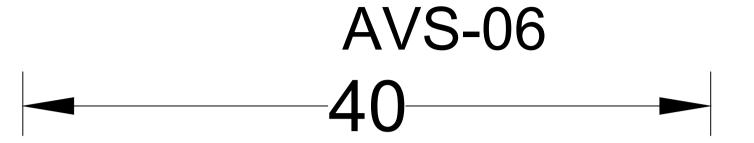


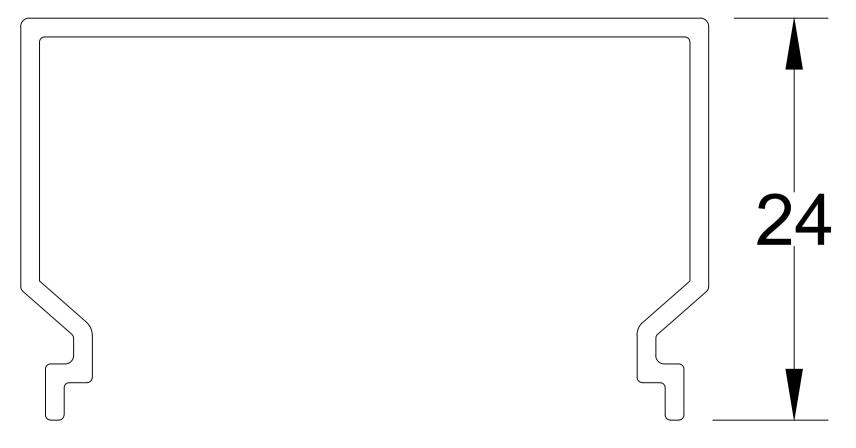
TVS-1003 b

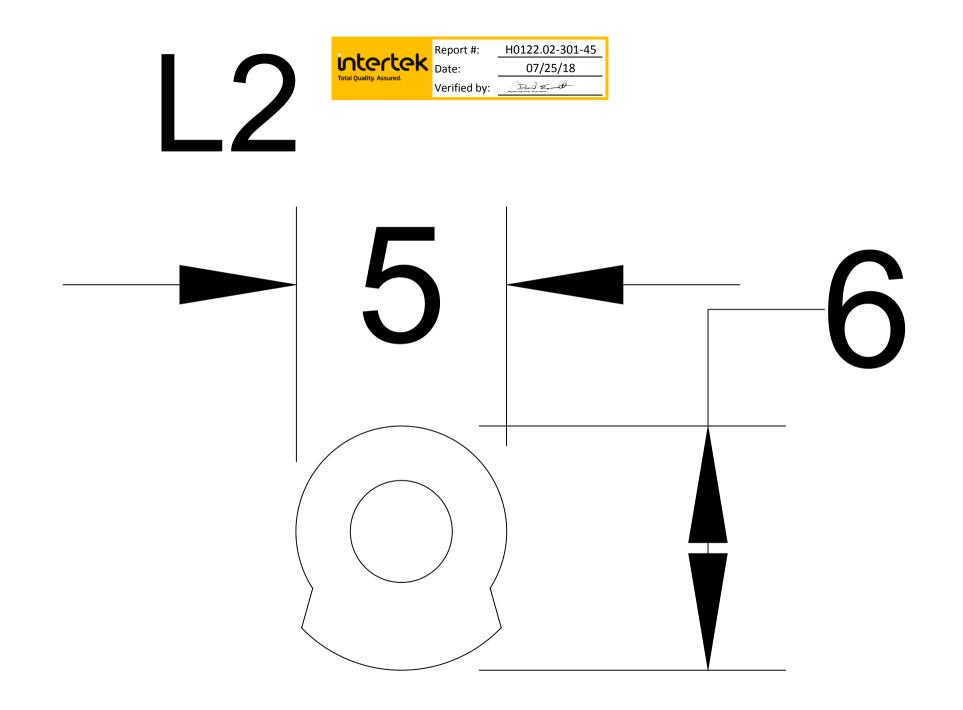


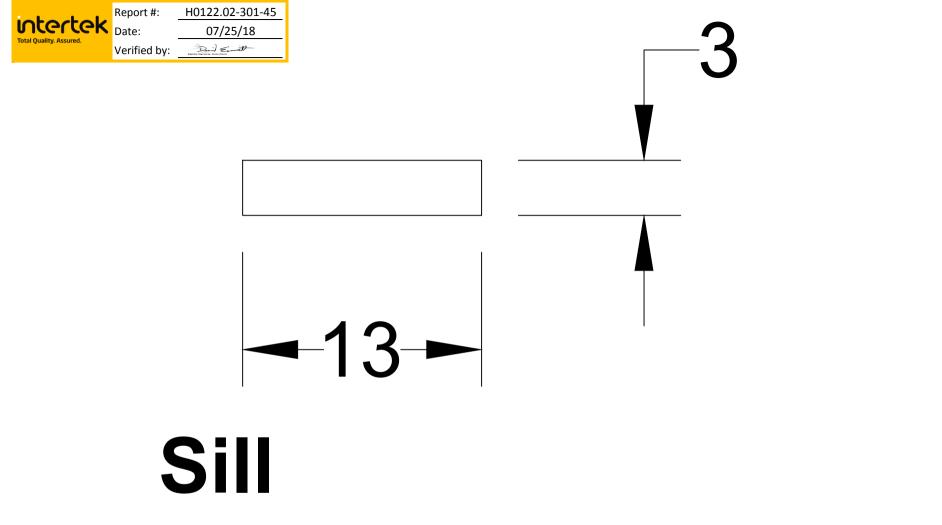






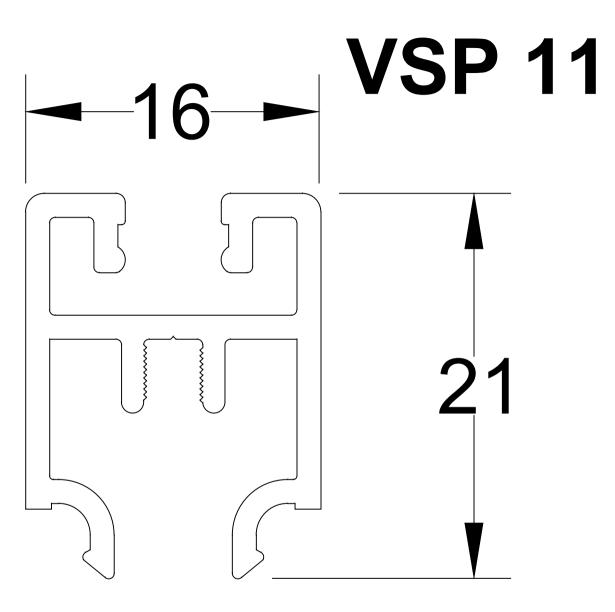






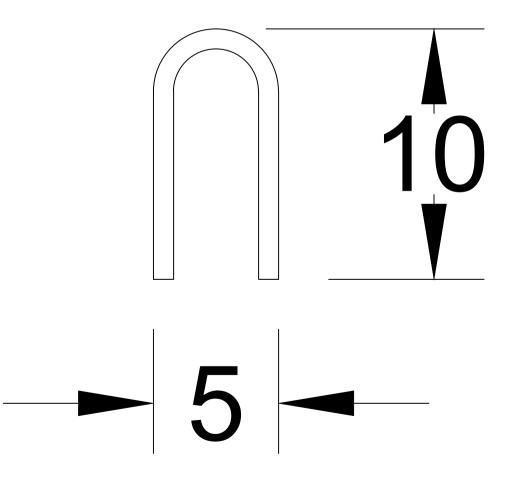
Reinforcement

intertek Total Quality. Assured.	Report #:	H0122.02-301-45	
	Date:	07/25/18	
	Verified by:	David Emil	



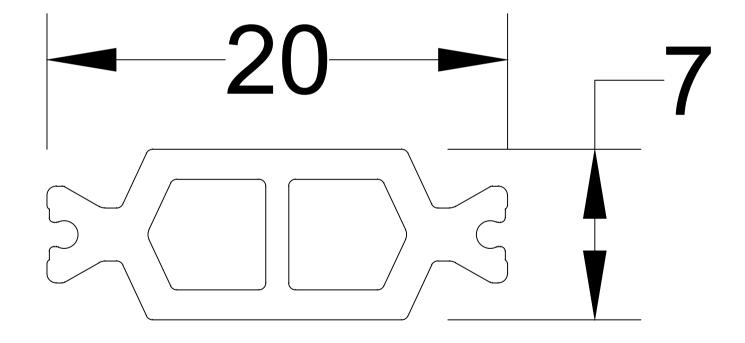
intertek Total Quality. Assured.	Report #:	H0122.02-301-45
	Date:	07/25/18
	Verified by:	David Ernet

EIN-1

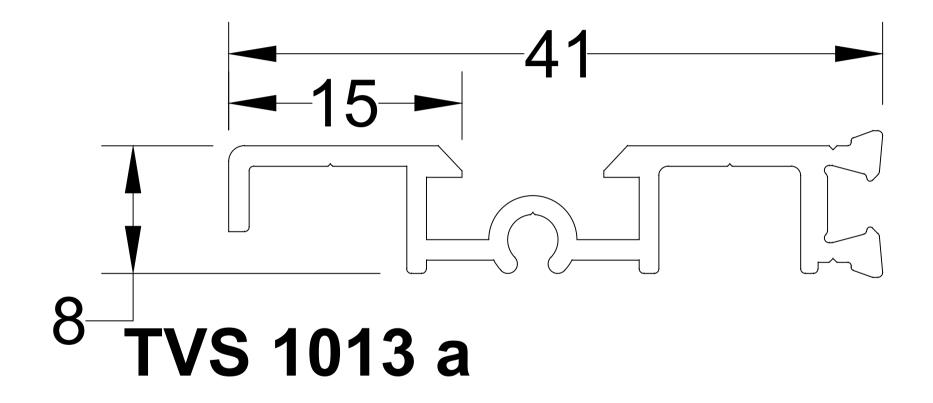


Sill Thermal Break

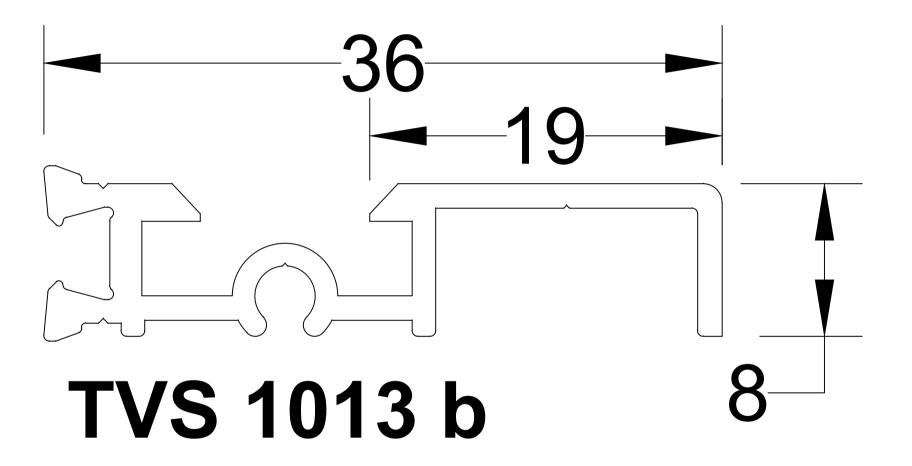
the base of the base	Report #:	H0122.02-301-45
intertek Total Quality. Assured.	Date:	07/25/18
	Verified by:	David Emil



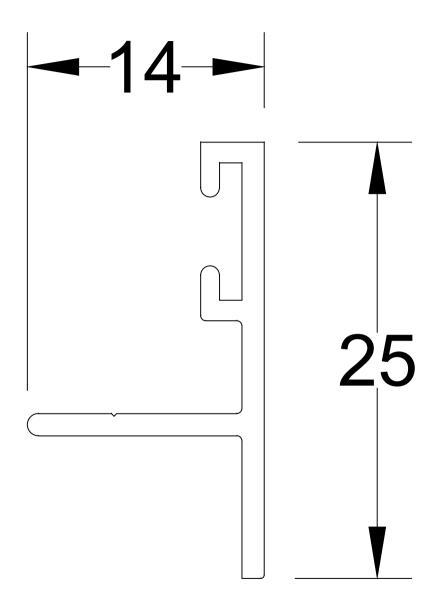
intertek Total Quality. Assured.	Report #:	H0122.02-301-45
	Date:	07/25/18
	Verified by:	David Example



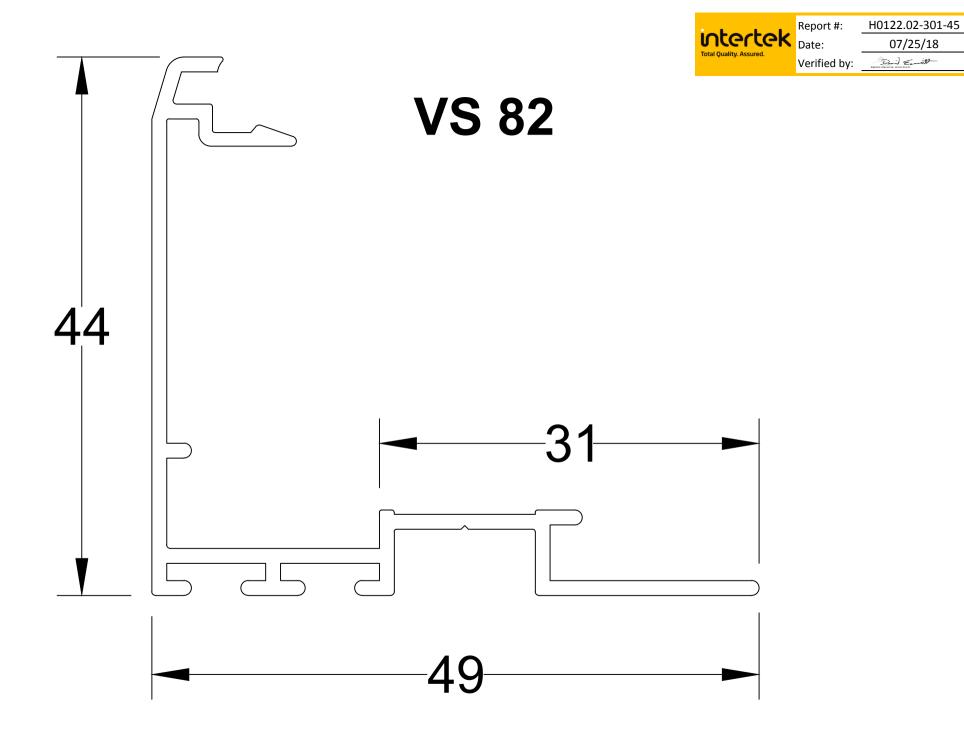
	Report #:	H0122.02-301-45	
intertek	Date:	07/25/18	
Total Quality. Assured.	Verified by:	David Emil	



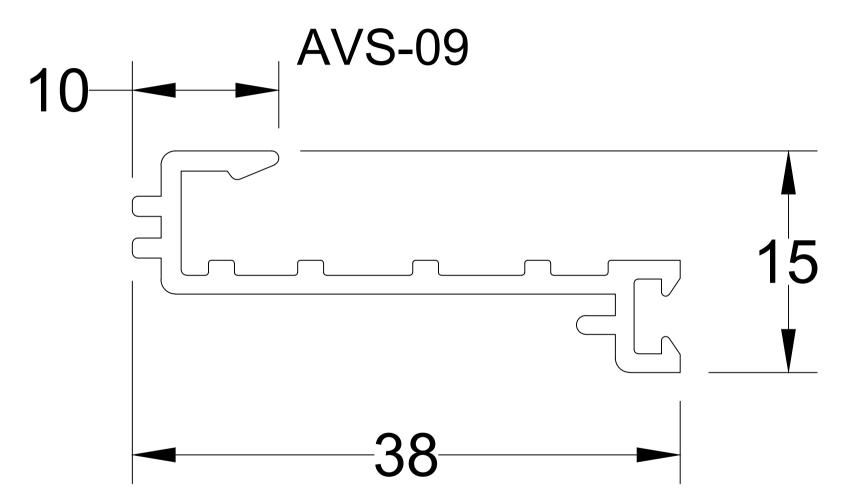
	Report #:	H0122.02-301-45
intertek	Date:	07/25/18
Total Quality. Assured.	Verified by:	David Emil

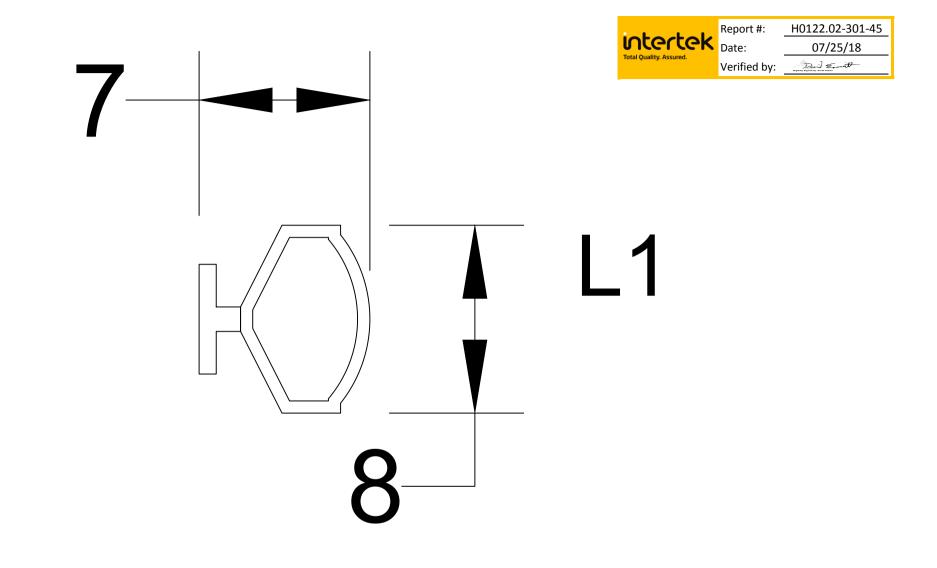


TVS 1013 c









intertek Total Quality. Assured.	Report #:	H0122.02-301-45
	Date:	07/25/18
	Verified by:	David Erned

