

2013 Specification Book





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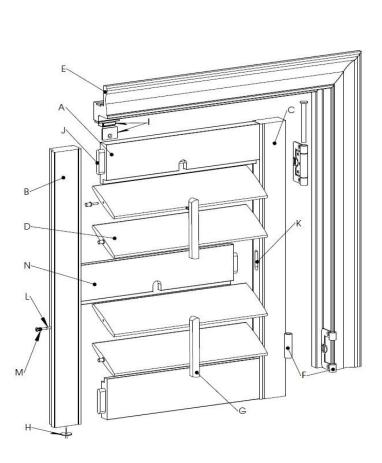


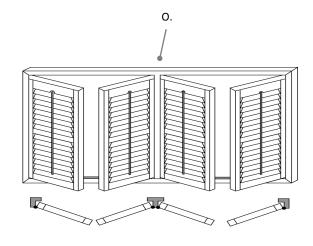
FEATURES & BENEFITS & SHUTTER TERMINOLOGY

TechSmart Shutters blends the strength, stability and precision of man-made materials with the beauty, character, and elegance of real wood. This one aspect allows TechSmart Shutters to be among the most functional and durable shutters offerings on the market today.

TechSmart Shutters guarantees total satisfaction in every home and application.

- More durable, energy efficient, and low maintenance compared to wood shutters
- Engineered HSPVC polyvinyl material resists yellowing, weathering, and corrosion
- HSPVC polyvinyl material insulates better than any wood shutters
- Protected by a high UV inhibitor to ensure lifetime durability
- Will not rot, absorb moisture, delaminate, split, chip, crack, or promote mold
- Offers all the benefits of PVC with the look of real wood





- A. Top / Bottom Rail
- B. Rabbeted Stile
- C. Standard Stie
- D. Louver
- E. Frame (Z shown)
- F. Hinge
- G. Tilt Rod
- H. Stile Cap

- Magnet & Catch
 Plate
- J. Tenon
- K. Mortise
- L. Tension Screw
- M. Tension Spring
- N. Divider Rail
- O. T-Post





SHUTTER TERMS

BI-FOLD

Shutter panels where two panels are hinged together in order to fold up together.

CAFÉ FRAME

A standard frame style where shutters cover the bottom half of the window and the top half are open. Café frames are available in 3-sided or 4-sided.

DIVIDER RAIL

A horizontal shutter panel component that separates a single panel into two or more sections that may be opened individually.

DOUBLE HUNG

Shutter configuration where two panels or groups of panels are mounted separately so they can be opened independently from each other.

FRAMES

Profiles used to frame the window op depending on the frame style.

INSIDE MOUNT

For windows that are square, the frame is mounted or partially mounted inside the recessed portion of the window opening.

LOUVER

A solid cellular profile that rotates for light and privacy control. Louvers are available in 2 1/2", 3 1/2" and 4 1/2 widths.

MOUSE HOLE

The rounded cutout in the top shutter panel rail designed to fit the tilt rod. This hole allows complete closure of the louvers, providing a superior fit.

OUTSIDE MOUNT

A mounting method where the frame is mounted to the wall or outside casing of the window opening.

RAILS: TOP & BOTTOM

The top and bottom horizontal framework of the shutter panel.

REVEAL

The distance between the inner- most edge of an outside mount frame and the outside edge of the window opening.

STILE

The vertical sides of the shutter panel.

ASTRAGAL STILE

The vertical sides of the shutter panel designed to cover the light- gap where two panels meet. Small lip offers superior light control.

RABBETED STILE

The vertical sides of the shutter panel designed to cover the light-gap where two panels meet.

T-POSTS & TRANSOM BEAMS

Profiles used for extra support within a frame system. T-Posts are vertical supports and Transom Beams are horizontal supports.

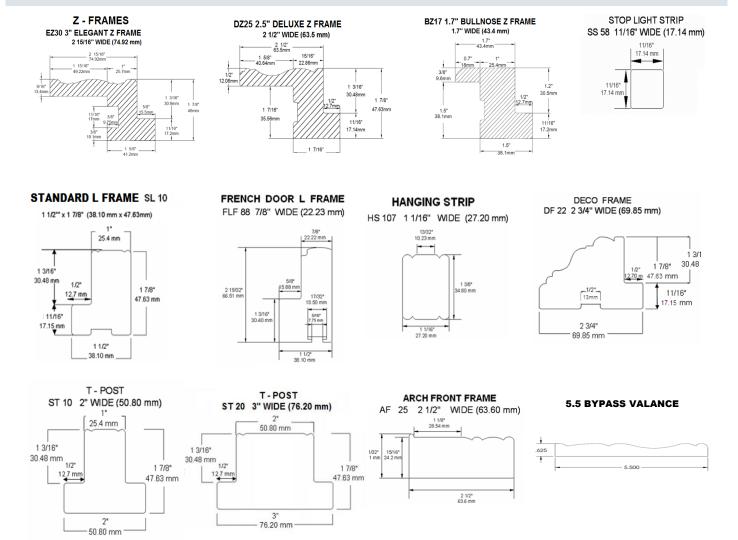
TILTROD

The center pole attached to the shutter panel louvers





FRAME OPTIONS



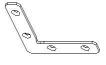
		1
Frame Type	Thickness	Overlap
Std. Hanging Strip	1 1/6"	
Adj. Hanging Strip	1 1/6"	
0.75 Hanging Strip	3/4 "	
0.5 Hanging Strip	1/,"	
Bullnose Z Frame	1"	0.7087
2.5" Deluxe Z-Frame	15/16""	1 9/16"
3" Elegant Z Frame	1 1/8"	1.9275"
Std. L Frame	1"	
French Door L Frame	7/8"	
Décor Frame	2 ¼"	

Sill Frames—When ordering a sill frame, we use the same frame that is picked on the order. On all Z-Frames the lip will be cut off. This done so the profiles will match.

The L-Brackets are supplied for the frames on any shutter over 25 sq. ft. only.

Z L-Bracket—available for all Z Frames

L-Bracket—used on





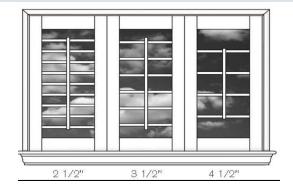


COLOR & LOUVER SIZE

Colors: Bright White (02), White (03), Pearl (04)

Louver Size: 2 ½, "3 ½", 4 ½"





Louver Clearance Chart—Inside Mount

FRAME	FRAME	Louver	Louver	Louver	NOTES
NAME	PART#	2.5"	3.5"	4.5"	
Std. L	SL10	1 7/8"	2 5/16"	2 13/16"	
Bullnose Z	BZ17	1 5/16"	1 11/16"	2 13/16"	
2.5" Deluxe Z	DZ25	1 7/16"	1 3/16"	2 5/6"	
3" Elegant Z	EZ30	1 3/8"	1 11/16"	2 3/16"	
Hanging Strip: Side by Side *	HS107	1 13/16"	2 5/16"	2 13/16"	Gaps between window top/bottom panels are 1/8".
Hanging Strip: Behind *	HS107	1 ³ ⁄ ₄ "	1 13/16"	2 5/16"	Gaps between window top/bottom panels are $1/6$ ".
Direct Mount *	N/A	1 13/16"	2 5/16"	2 13/16"	All hardware & Light Stops provided on all sides

Louver Clearance Chart – Outside Mount

FRAME	FRAME	LOUVER	LOUVER	LOUVER	NOTES
NAME	PART#	2.5"	3.5"	4.5"	
Std. L Frame	SL10	0	7/16"	15/16"	
Deco Frame	DF22	0	7/16"	15/16"	Outside mount only
Hanging Strip: Side by Side*	HS107	7/16"	15/16"	1 7/16"	Gap between window and top/bottom panel is 1/8"
Hanging Strip: Behind	HS107	0	5/8"	9/16"	Gap between window and top/bottom panel is 1/8"
Direct Mount	N/A	5/8"	1 1/8"	1 5/8"	All hardware and Light Block provided on all sides



HINGE OPTIONS

Hinge is a non-mortise

Hinge Finishes:

White, Pearl, Polished Brass, Antique Brass, Stainless Steel

Hinge Minimum Requirements

Panel Height	No. of Hinges
Up to 44"	2
44 ¹ / ₁₆ " to 72"	3
72 ¹ / ₁₆ " to 96"	4
Over 96"	5



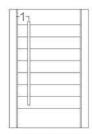
TILT ROD OPTIONS



Standard Tilt Rod

In the middle of the panel

on front side (default)



Offset Tilt Rod

On the front side of the panel and at 1" from the louver ends on the hinges side.



Hidden Tilt Rod

White metal bar is attached to the louver's edge on the back and hinge side of the panel. Each louver is routed out. See picture below. The clearance needed for the hidden tilt rod is additional 1/2".

When the hidden tilt rod section is over 52", the factory will spilt the hidden tilt rod in the middle unless specified.



Hidden Tilt Rod (close view)



Hidden Tilt Rod view from the back of the panel



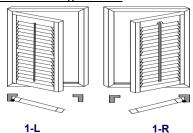
PANEL SPECIFICATION

Panel Size Limita- tions	Louver Size	HSPVC Solid Stile	HSPVC Solid Stile with Alu- minum Insert	Bi-Fold Panels
Maximum Panel Width		22"	36"	20"
Minimum Panel Width		9"	9"	9"
Maximum Panel Height		72"	120"	120"
Minimum	2,5"	20"	20"	20"
Panel	3.5"	20"	20"	20"
Height	4.5"	24"	24"	24"

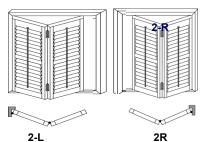
- Tenon = 7/16" for all rails
- Divider Rail may vary up to a half a louver spacing
- Caps or plugs are to go into all ends of all the types of stiles
- Louver Tension Screws to be in at least one louver per section
- All voids on the ends of all components to be filled prior to packaging

PANEL CONFIGURATIONS



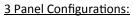


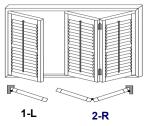


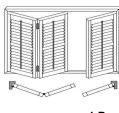




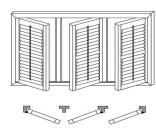
1-L & 1-R



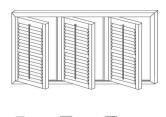




1-R 2-L

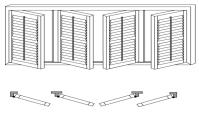


1-L, T 1-R, T, 1-R



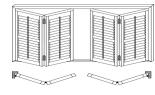
I-L, T, 1-L, T, 1-L

4 Panel Configurations:



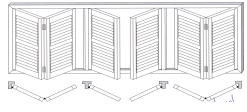
1-L, T, 1-L

1-L, 1R, T, 1-L, 1-R



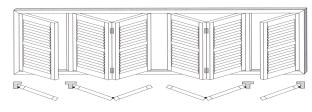
2-L, 2R

6 Panel Configurations:



1-R, T, 1-R

2-L, T, 1-L 1-R, T, 2-R



6 1-L, T, 2-L

2-R, T, 1-R



DIVIDER RAIL & STILE SPECIFICATIONS



Divider rails are used to divide a panel into two horizontal sections. They provide structural rigidity and also divide top and bottom louvers. This is usually requested when privacy is required and to match the existing break of the windows, as well as for good design practices. Each louver section is operated independently and gives you a better light and privacy control.

RAIL HEIGHTS (WITHOUT RABBET)

2.5" Louver—3" to 4" Rail Height 3.5" Louver—3" to 4.5" Rail Height 4.5" Louver—3.5" to 5.5" Rail Height

Divider Rail Requirements

Panel Height	Panel Width	Panel Width
	(0"-24")	(24 1/6"-36")
0- 60"	0	0
60 1/16" – 72"	0	1
72 1/16" – 96"	1	1
96 1/16" – 120"	2	2

Shutter measurements that exceed the maximum dimensions listed below require a Divider Rail.

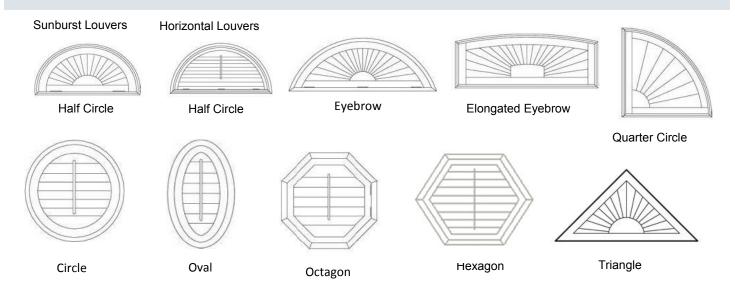
- A divider rail can be placed in any specified location on panels. (Divider rails are 2.4" wide).
- A divider rail for a Net with Frame shutter is measured up from the bottom of shutter to the middle of the divider rail.
- A divider rail for a window opening size shutter is measured up from the bottom of the window to the middle of the divider rail.
- If the divider rail is specified at center, the divider rail will be placed in the center of the panel for any size shutter, but may vary up to 1" for a 2.5" louver, 1.5" for a 3.5" louver, and 2" for a 4.5" louver.
- Divider rail may offset from specified location, but may vary up to 1" for a 2.5" louver, 1.5" for a 3.5" louver, and 2" for a 4.5" louver

STILES

Solid Stiles – Standard, Standard, Rabbeted and Astragal
Shutters under 24" X 50" and Panels under 72" in Height
Aluminum Stiles - Standard, Rabbeted and Astragal.
Shutters over 24" X 50" and Panels over 72" in Height



SPECIALTY SHAPES SPECIFICATIONS



SPECIALTY SHAPES SPECIFICATIONS

If have a PERFECT HALF CIRCLE SHAPE $% \frac{1}{2}$ window and the $\frac{window\ is\ less}{than:}$

- 35" wide, the <u>only Z frames</u> available is the 2.5 Deluxe Z Frame (DZ25) and the Bullnose Z Frame (BZ17).
- 30" wide, the <u>only Z frames</u> available the Bullnose Z Frame (BZ17).

 See Radius Chart for reference on all frames.

Specialty Shapes Specifications with Horizontal & Sunburst Louvers.

Frame	Radius Chart				
Type	Less than 15"	15" to 17.5"	Over 17.5"		
BZ17	Ok	Ok	Ok		
DZ25	No	Ok	Ok		
EZ 30	No	No	Ok		
SL10	Ok	Ok	Ok		
FLF88	Ok	Ok	Ok		
DF22	Ok	Ok	Ok		
HS107	Ok	Ok	Ok		

Specialty Shapes with Sunburst Louvers - Single Panel

og.o.				
Specialty Shapes	Wie	dth	Height	
Specialty Shapes	Min.	Max	Min.	Max
Circle	20	36	20	36
Half Circle	20	110	10	55
Quarter Circle	15	55	15	55
Eyebrow	20	110	9	55
Elongated Eyebrow	20	110	10	55
Oval	20	36	25	48
Hexagon	20	36	20	36
Octagon	20	36	20	36
Triangle	20	36	17 %	31 1/8

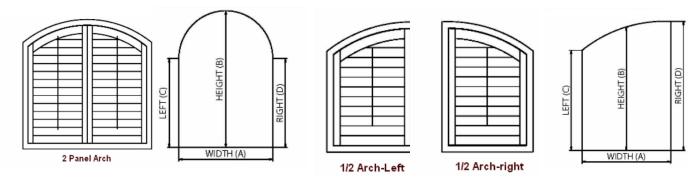
Specialty Shapes with Horizontal Louvers - Single Panel

Specialty Shapes	Wi	dth	Height	
Specially Snapes	Min.	Max	Min.	Max
Circle	15	36	15	36
Half Circle	20	36	10	18
Quarter Circle	10	36	10	36
Eyebrow	20	36	8	8
Elongated Eyebrow	20	36	10	18
Oval	10	36	16	48
Hexagon	15	36	15	36
Octagon	15	36	15	36
Triangle	15	36	13	31 1/4



CONTOURED & RAKE SHAPE

Contoured shutters are another way to cover an arched opening. The shutters panels are manufactured with a curved top rail to conform to the desired opening. They are available as a full circle or an eyebrow. We provide a full frame on all contoured shutters.

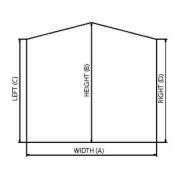


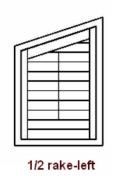
- Please provide the width, overall height and shoulder heights on each side.
- If have a perfect half circle top window and the window is less than 30" wide, the only Z frame available is the Bullnose Z Frame (BZ17). See Radius Chart below.

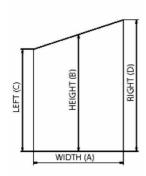
_	Radius Chart			
Frame Type	Less than 15"	15" to 17.5"	Over 17.5"	
BZ17	Ok	Ok	Ok	
DZ25	No	Ok	Ok	
EZ30	No	No	Ok	
SL10	Ok	Ok	Ok	
FLF88	Ok	Ok	Ok	
DF22	Ok	Ok	Ok	
HS107	Ok	Ok	Ok	

Raked top shutters, are shutters that have a straight angled top. The shutters are manufactured with an angled top rail to conform with the opening. We provide a full frame on all rake shutters.











Specialty

FRENCH DOORS

CUT OUT SPECIFICATIONS

Notch Cut Out

- Cut a rounded corner 0.25" to .375" notch out of the frame centered to the specified height from the bottom of the shutter
- Height of the notch cut can vary as specified

Box Cut Out

- Miter frame to make a box centered to the specified depth and height from the bottom of the shutter
- Height of the actual box can vary as specified
- Includes a plate which may be recessed to the specified depth
- Will have a few louvers shorted according the size box specified

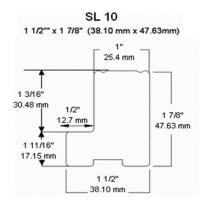
Half Circle

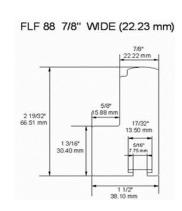
- Curved frame to make a circle cut out to the depth and height from the bottom of the shutter
- Height of the actual half circle can vary as specified
- Curved piece will be surround by a square block to make the louvers straight
- Includes a plate which may be recessed to the specified depth
- Will have a few louvers shorted according the size cut out specified

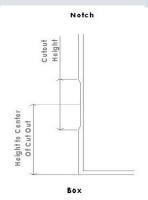
Frames Sizes:

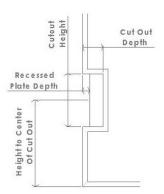
L Frames (Inside or Outside Mount)

Standard L Frame (SL10)
French Door L Frame (FLF88)

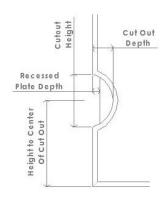








Half Circle



Frame FLF88—will clear for the 2 1/2" & 3 1/2" louver with standard tilt rod depending on your window situation.).

When using the 3 1/2" with Hidden tilt rod or 4 1/2" louver you need to call out for the build out needed.

Clearance for Hidden Tilt rod is 1/2"



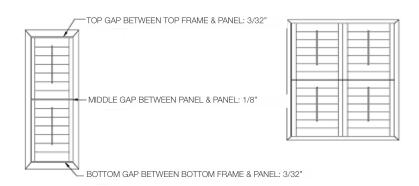


DOUBLE HUNG

Double hung shutters offer the maximum in shutter adjustability, but without the proper design double hung shutters will sag and perform improperly.

Double hung bi-fold shutters must be designed so that the width of the panels in less than the height of the panels. Shutters ordered with a width dimension more than the height will sag.

Always order double hung shutter with a foursided frame. Three sided frames will not have a frame on the bottom to attach magnets and will need a light block so that there is a mounting place for the magnet.



T Post

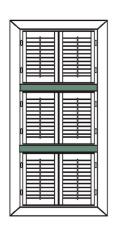
Posts divide a window vertically into sections.

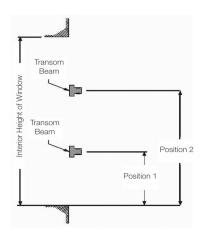
T-Posts can be used to match the design of a window that has a natural break to accommodate panel configurations that require more than two panels, or just for aesthetic purposes. These can be used with any of our frame styles.

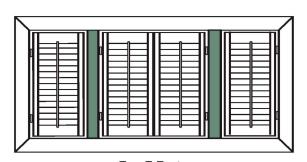
Custom T-Post locations are available in any of our shutters.

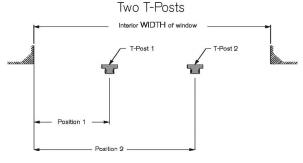
For window opening size shutters measure from the left side of the window to the center of the 1st T post location for the Position 1 (as shown above). For more than one T-Post, always measure from the far left of the window to the center of the T-Post as shown above for Position 2.

For Net with Frame, measure from the left edge of the frame to the center of the T-Post.







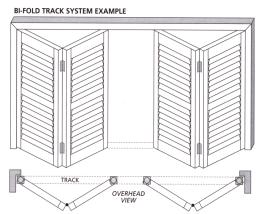


Transom beams are required when multiple shutters are needed to cover large window heights. Transom Bean locations are measure from the bottom window edge for opening size shutters and from the bottom of the frame for Net with Frame Shutters.





Bi-Fold Track System



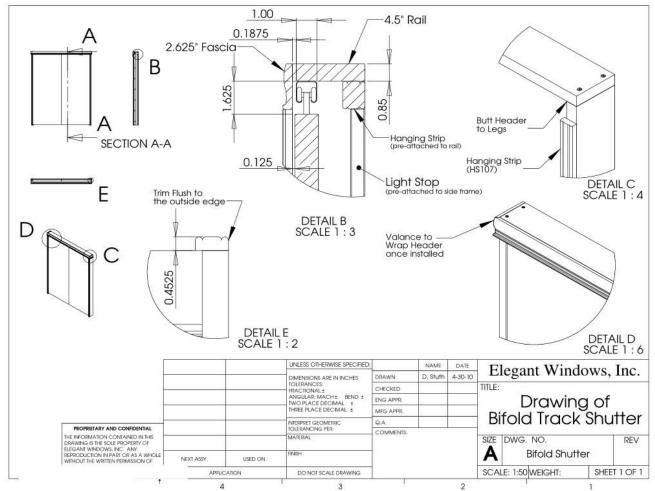
Bi-Fold Shutters on a track system is another solution for sliding glass doors. The panels on are on an overhead track guided by pivots. The panel configurations must always be in even numbers. See the chart below. Track Frames are pre-drilled for assembly only. Valance returns made flush to back of frame. If you need longer returns must be specified on order.

Panel Configurations

NO. PANELS	FOLD
2 Panels	BF - 2L
2 Panels	BF - 2R
4 Panels	BF 2L / 2 R
4 Panels	BF 4L
4 Panels	BF 4R

NO PANELS	FOLD
6 Panels	BF - 2L / 4r
6 Panels	BF - 41 / 2R
6 Panels	BF - 6L
6 Panels	BF - 6R

NO PANELS	FOLD
8 Panels	BF - 2L / 6R
8 Panels	BF - 4L / 4R
8 Panels	BF - 6L / 2R
8 Panels	BF 8L
8 PANELS	BF 8R





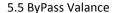


Bi-Pass Track System



Bi-Pass sliding shutters are the perfect shutter for large windows such as sliding glass doors. Utilizes an overhead track system attach to the panels so that the panels can slide horizontally across the window opening. Track Frames are re-drilled for assembly only.

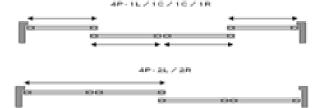
Options are the track only, with a frame attached to the track, or 3 sided to close in the panels or with a 5.5" decorative valance/box out to help conceal the track system from the front. Valance returns made flush to back of frame. If you need longer returns must be specified on order.







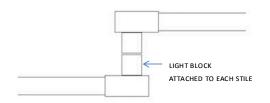






6P-2L/1C/1C/2R

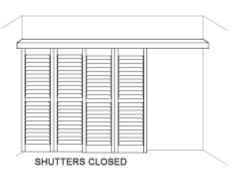
By-Pass Track System



ByPass Frame Depth Chart

Tue els De eltiese	Louver Size			
Track Position	2 ½"	3 ½"	4 ½"	
2 Tracks Closed	6"	6"	6"	
3 Tracks Closed	7.5"	7.5"	7.5"	
2 Tracks Open	7.5"	8"	N/A	

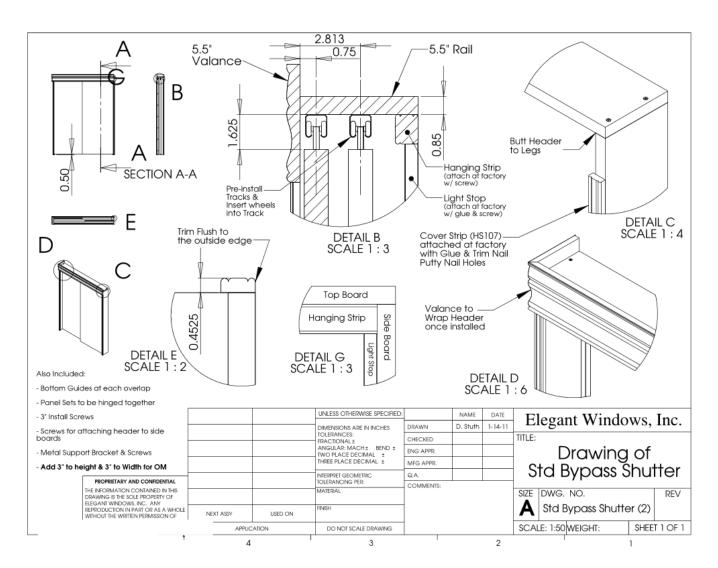
Stack back is recommended to be at least 1.5 times the window/ shutter width for the panels clear the opening.







Bi-Pass Track System



ByPass Track System Center Brackets



Available for standard Bypass shutter



7" corner steel

Available for 2.5" louvered Open Bypass shutter Available for 3.5" louvered Open Bypass shutter Available for Three Track Bypass shutter





Measuring Information

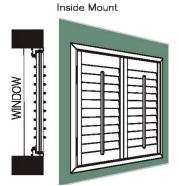
TIPS

- Always use a steel measuring tape for your measurements
- Measure each opening separately, even if they appear to be the same size
- Inside mount: If no frame is required, a Hanging Strip Frame is recommended to reduce all light gaps that will otherwise be apparent around your shutter panel
- Outside mounts: Recommended for window casings that are not perfectly square
- Shutter frames must be mounted securely, into wooden studs or anchor correctly in the drywall.

MOUNTING OPTIONS

Inside Mount

The shutter is mounted inside



Outside Mount

The shutter is mounted outside





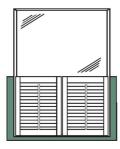
How to Determine the Number of Frame Sides and Some of the Most Common Conditions

Four-Sided Café Frame



If you want a Four-Sided Frame Shutter but your window has a sill, you must state the frames sides to be Four-Sided with Bottom Sill.

Three-Sided Café Frame



If you want a Three-Sided Café Shutter but your window has a sill, you must state the frames sides to be Three-sided with Bottom Sill.

A Sill Frame is used to replace the regular bottom frame piece.

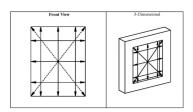




Measuring Information

MEASURING FOR WINDOW SQUARENESS

To determine the squareness, measure diagonally. If measurements are not equal, consider specifying greater deduction than the one usually taken or recommended. If the two diagonal measurements vary more than 1/2" you should consider an inside mount with one of our Z frames or an outside mount application



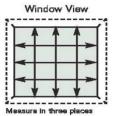
DIRECT MOUNT SQUARENESS

For direct mount, measure diagonally between corners to determine the squareness of the window. If the difference between the two measurements is larger than 1/4" then an outside mount is needed unless you are willing to fill the gaps with putty.

MEASURING BY WINDOW OPENING SIZE

Measure the window width and the window height in three different places.

- Inside Mount: Take the smallest of the three measurements to determine the width and the height.
- Outside Mount: Select the largest of the three measurements to determine the final dimensions of the shutter.



MEASURING BY NET WITH FRAME

Another way to take measurements is "Net with Frame," also known as finished size. When ordering a shutter with NWF dimensions the factory will build the shutter unit (panels and frames) to your exact width and height specifications to the outside edge of the frame. NWF dimensions are normally reserved for individuals with fairly advanced knowledge, as the face of the frame will need to be added to the opening size measurement



MEASURING SPECIAL WALLS AND SITUATIONS

Bull Nose Condition

- For inside mount provide Window size. Measure from the flat points inside of the window.
- For outside mount measure, measure from the flat points on the wall outside of the window.
 - This is considered the window size.
 - The purpose is to make sure that the frame will be flat on the wall surface
 - Please provide only Max. Frame-to-Frame measurements.
 - Pay attention to the frame specs just to make sure the frame can be installed properly.



- Deco frames, L frames, or hanging strips can be used as outside mount options for Bull Nose wall condition.
- Z Frames or Hanging strips can be used for inside mounts.



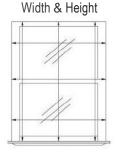


Window Size Measuring

Outside Mount:

Width & Height

No Window Trim or Sill



With Window Trim or Sill



- 1. Measure the width at three different points. Measure from the outside edges of any side window trim or molding. If no side trim or molding, measure between side window casings. Write down the largest measurement.
- 2. Measure the height at three different points. Measure from the top of the top window trim or molding to bottom edge of the bottom trim or molding piece. If no top or bottom window trim or molding, measure from the inside edge of the top window casing and the bottom casing/sill. Write down the largest measurement.
- 3. For bullnose or radius edged openings, add 2 inches to the width and 2 inches to the height due to the non-mountable space caused by the curvature.

TIPS

Always use a steel measuring tape for your measurements

Measure each opening separately, even if they appear to be the same size

Inside mount: If no frame is required, a Hanging Strip Frame is recommended to reduce all light gaps that will otherwise be apparent around your shutter panel

Outside mounts: Recommended for window casings that are not perfectly square

Shutter frames must be mounted securely, into wooden study or anchor correctly in the drywall.

MEASURING FOR SPECIFIC FRAMES

To convert "Window Size" to "Net with Frame" for standard installation, follow these instructions.

Standard L Frame (SL10) & French Door L Frame (FLF88)

	Width +?	Height + ?
2 Side	3"	0"
3 Side	3"	1.5"
3 Sided with Bottom Sill	3"	0"
4 Sided	3"	3"
4 Sided with Bottom Sill	3"	1.5"
4 Sided w/ Top & Bottom Sill	3"	3"

Deco Frame (DF22)

	Width +?	Height + ?
2 Side	5.5"	0"
3 Side	5.5"	2.75"
3 Sided with Bottom Sill	5.5"	0"
4 Sided	5.5"	5.5"
4 Sided with Bottom Sill	5.5"	2.75"
4 Sided w/ Top & Bottom Sill	5.5"	0"

SHUTTER TOLERANCES—(see page 18.)

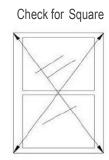


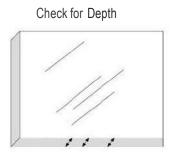


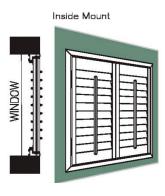
Measuring Information

Inside Mount:

Width & Height







- 1. Measure the width at three different points. Measure between the side window casings. Write down the smallest measurement, rounding up to the nearest 1/16".
- 2. Measure the height at three different points. Measure between the inside edge of the top window casing to the bottom casing. Write down the smallest measurement, rounding up to the nearest 1/16".
- 3. Check to see if your window opening is square. Do this by measuring diagonally from the lower left corner to the upper right. corner. Repeat procedure, this time measuring from the upper left corner to the lower right corner. If the difference between the two measurements is greater than 3/8", you will have to use an outside mount installation.
- 4. For all inside mounts, the depth of the window opening must also be measured to make sure that there is enough clearance for proper louver movement. Check the Louver Sizes & Panel Widths page for required clearance on page

FACTORY STANDARD DEDUCTIONS WHEN ORDERING WINDOW SIZE / INSIDE MOUNT

Inside Mount	Width	Height	Height 2-sided Frame	Height 3-Sided Frame	Height 4-Sided Frame	Height 4-Sided w/ Sill Frame	Height 4-Sided w/ Sill Frame Top & Bottom
Direct Mount	Hinge Gap Deduction only	3/16"					
All Z-Frames	3/8"		1/4"	1/8"	1/4"	3/16"	1/8"
L Frame	1/4"		1/4"	1/8"	1/4"	3/16"	1/8"

SHUTTER GAP SPECIFICATIONS

If IM, gap between wall and regular frame on left or right side = 3/16"

If IM, gap between wall and Hanging Strip on left or right side = 1/4"

If hanging strip is behind panel then only 1/16" deduction between wall and hinge.

If IM, gap between wall and regular frame on top or bottom = 1/4"

If between window sill and sill frame = 1/16" gap

If IM, gap between wall and panel on top or bottom = 3/32"

If OM, no deductions taken.

Gap between frame/wall and panel on left or right side = 5/64"

Gap between frame/wall and panel on top or bottom = 3/32"

Gap between panels if Rabbeted and LL or RR = 1/32"

Gap between panels if Astragal and LL or RR = 5/64"

Gap between panels if Rabbeted and LR = 1/16"

Gap between panels if Astragal and LR = 1/8"

SHUTTER TOLERANCES

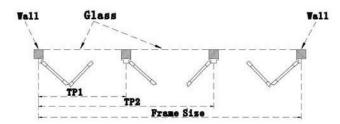
Item	Tolerance
shutter finished sized width / height	± 1/16"
lineal frame	± 1/16"
lineal louver	± 1/64"
lineal rail	± 1/64"
lineal stile	± 1/32"

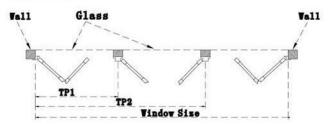


T-Post

Outside Mount - Frame/Window size meaurement Measure the frame size and identify the T-Post locations from the outer edge of the left frame to the center of each T-Post.

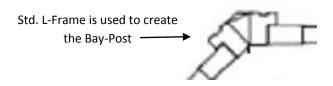
Inside Mount - Window size measurement
Measure the window size and identify the T-Post locations
from the inside edge of the window opening to the center of
each T-Post.





Bay Windows

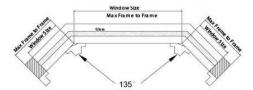
Pricing for Bay & Corners Windows – Take the width and height of each section of the bay window. Figure the square foot price and add for the surcharge.



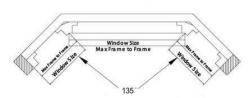
Maximum Frame-to-Frame Size represents:

Left and Right Opening: Measure from the edge of the frame to the corner of the opening. Center Opening: Measure from the left corner to the right corner.

L Frame Outside Mount



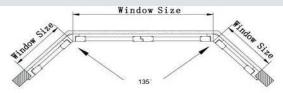
L Frame Inside Mount





Bay Windows





Custom Angled Corner Post

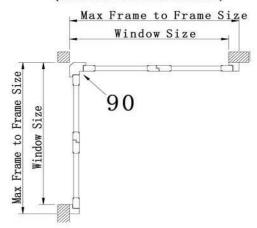
We offer corner posts in two standard angles, 135 degrees for bay windows and 90 degrees for corner windows. If you have a special request for a custom angle corner post, please note that a surcharge may apply.

Bay Windows

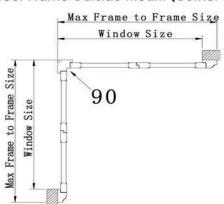
Outside Mount - Window size measurement

Specify Corner Group Left or Right shutter on the order form. When installing an outside mount corner unit, the corner frames are attached to the top and bottom of window opening only. Alternatively, you can also order extra frames to mount behind corner frames for ease of installation.

L Frame Outside Mount Corner Window (with break in the window)



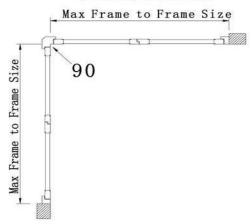
Decor Frame Outside Mount (Corner Window)



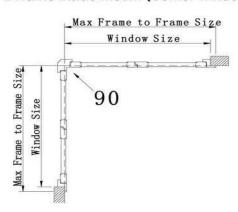
Inside Mount - Window size measurement

Specify Corner Group Left or Right shutter on the order form. Factory will make deductions and supply spacer. For inside mount corner shutters, there should be no objects protruding out of the corner.

L Frame Inside Mount Corner Window (continuous window)



Z Frame Inside Mount (Corner Window)







SQUARE FEET CALCULATIONS

SQUARE/RECTANGULAR SHUTTER

Inside Mount: Actual Window Opening Size

Z Frames:

Width: Width of window opening rounded up to nearest inch

+ 2" (BZ17), + 3" (DZ25), or + 4" (EZ30)

Height: Height of window opening rounded up to nearest inch

+ 2" (BZ17), + 3" (DZ25), or + 4" (EZ30)

Includes: Bullnose Z Frame, Deluxe Z Frame & Elegant Z Frame

Example: 20.5" x 57" = 24" x 60" = 10 sq. ft.

L Frames & Hanging Strip:

Width: Width of window opening rounded up to nearest inch

Height: Height of window opening rounded up to nearest inch

Includes: Standard L Frame, and Hanging Strip

Example: $24^{\circ} \times 59.5 = 24^{\circ} \times 60^{\circ} = 10 \text{ sq. ft.}$

Outside Mount: Net with Frame (Edge-to-Edge)

All Outside Mount Frames

Width: Width of shutter ordered rounded up to nearest inch

Height: Height of shutter ordered rounded up to nearest inch

Includes: Deco, Standard L, and Hanging Strip

Example 23.5" x 59.5" = 24" x 60" = 10 sq. ft.





SQUARE FEET CALCULATIONS

CONTOURED, RAKE, SECIALTY SHAPE OR SUNBURST SHUTTER

Inside Mount: Actual Window Opening Size

Z Frames:

- Width: Width of window opening rounded up to nearest inch
 + 2" (BZ17), + 3" (DZ25), or + 4" (EZ30)
- Height: Height of top of the arch rounded up to nearest inch
 + 2" (BZ17), + 3" (DZ25), or + 4" (EZ30)

L Frames:

- Width: Width of window opening rounded up to nearest inch
- Height: Height of top of the arch rounded up to nearest inch

Outside Mount: Net with Frame (Edge-to-Edge)

All Outside Mount Frames

- Width: Width of shutter ordered rounded up to nearest inch
- Height: Height of top of the shutter's arch rounded up to nearest inch

BYPASS SHUTTER

Inside Mount

- Width: Width of window opening rounded up to nearest inch
- · Height: Height of top of the arch rounded up to nearest inch

Outside Mount:

- Width: Width of window opening rounded up to nearest inch
- Height: Height of top of the arch rounded up to nearest inch

FRENCH DOOR SHUTTER

Outside Mount: Net with Frame (Edge-to-Edge)

All Outside Mount Frames

- Width: Width of shutter ordered rounded up to nearest inch
- · Height: Height of shutter rounded up to nearest inch
- Includes: Standard L, Slim L, French Door L Frame



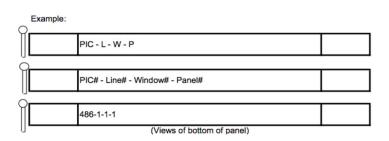


SHUTTER MARKING SPECIFIATIONS

PANELS:

Panels to be stamped in blue ink on the bottom of the bottom rail towards the hinge side

PIC & LWP markings to be the stamped onto the panel as shown below.



- A LWP # of 1 1 1 means Line 1, Window 1, Panel 1.
- If you had two 1 panel shutters on 2 lines, then the LWP numbers would be 1 1 1 for the first one and 2 1 1 for the second one.
- If you had a 1 panel shutter with a quantity of 2 on one line, then the LWP would be 1 1 1 for the first one and 1 2 1 for the second.
- If you had a 2 panel shutter on 1 line their panels would be 1 1 1 and 1 1 2.

FRAMES:

Frames to be marked in the miters or on ends of each end of the frame piece

PIC# - Line# - Window# - Corner# is to be marked in ink

- Starting with Corner 1 in the bottom right hand corner of the frames increasing the number going clockwise around the shutter.
- Window and Line number increase just like the panel do.

486-1-1-3 486-1-1-4 486-1-1-2 486-1-1-1 486-1-1-1 486-1-1-1

Example:

PACKING SPECIFICATIONS

- Panels and frame pieces are to be wrapped in Poly bags.
- Panels to be in their own boxes with either one or 2 panels per box
- No mixing of panels of different line items in one box
- Frames, Light Stop, Build out, Extra Frame, and hardware to all go into 1 carton.
- Styrofoam corners and sides are to be used to suspend panel and frames in their boxes.
- Panel boxes to be taped bound only.
- Frame boxes are to be taped and bound.
- Carton Labels to be put on one end of the cartons.
 - Matching panel and frames cartons to have corresponding labels.
 - ♦ Cartons number in correspondence with the line numbers
 - Panel cartons numbered before frame cartons
 - If an order has 2 lines with 3 cartons each:
 - Line 1 panels would be cartons 1 & 2
 - * Line 1 frames would be carton 3
 - Line 2 panels would be cartons 4 & 5
 - Line 2 frames would be carton 6





ON-LINE ORDERING

LOGGING ON

- 1. Open up your internet browser and go to https://epic.picbusiness.com/7504/ and you will see the Log-in screen for ordering your **TechSmart Shutters** and components.
- 2. In the User ID box, please type in your given Log-In name.
- 3. In the Password box, please type in your given temporary password.
- 4. Once you have entered your information correctly, click on to the "Login Now" button to enter the site.
- 5. You will need to click the Agree button to agree with the Terms of Service to continue into the site. The Terms of Service can be found by clicking on the ePIC General Service Agreement in the box.
- 6. Once in the site you need to change your password, by clicking on the Change Password tab on the left side of the screen. You will need to enter your old password as well as your new password for it to be changed.

INITIAL ORDER SETUP

- To place an order, click the Sales Order Tab on the left side of the screen and then click on Manage Order.
 You will see the Add button in the middle of the screen, click on it to bring up the start page for the ordering process.
- 8. Click on the Customer button and then click on your account name. You will see that all your information will be filled in automatically for the Ship-To, Email, Salespeople, and Status Tabs. You can verify each tab by clicking on them and checking all the information.
- 9. You will always either choose the Order or Quote selection for the type of order you want.
- 10. You will need to fill in the Placed By, Tag / Sidemark, and Client PO boxes to continue with the order. If you have any comments, they can be entered in the General Comments Box.
- 11. Once all information is entered, click the Next button to continue. Remember an order can be canceled at any time by hitting the Void or Cancel buttons.
- 12. Under the Start tab you will need to choose what type of order you want place, Shutters or Extrusion Sales (for ordering cartons or crates of extruded components).
- 13. For Shutter Orders, you then need to choose which product, Equal T-Post, Standard, Uneven Panel, or Uneven T-Post Shutters and then choose the Model, 2.5", 3.5", 4.5" Louver.
- 14. Once you have chosen your shutter you will need to fill in the remaining information:
 - a. Quantity, Color, Room Location, Width, Height, Mount, # of Panels, Tilt Bar, Frame Type, Frame Sides, Stile Type, Divider Rail, Panel Configurations, and T Post Locations (if applicable).
- 15. Once you have you entered all your information correctly, click the OK Item button to add the shutter to your order. The system automatically enters the information from the previous order in to the next shutter for faster order entry.
- 16. You can add more shutters to the order or you can click the Summary button to view your order. You can edit you order by right clicking on the line you would like to edit and choose from the available options, Change, Delete, or Repeat This Item.
- 17. If you are finished with your order, you click the Save button to place the order. You also have the option at this time to save the order as a Quote, Sales Order, Go Back to the Summary, or Void the order by clicking the appropriate buttons.

OPENING SIZE & NET SIZE

Opening Size - We assume that the dimensions shown on order form are exact inside window dimensions. We will make deduction of 1/4" (on Z & Deluxe Frames) all around for semi-inside mount frames, and 1/8" deduction in width and 1/8" in height for inside mount frames.

Net size - is defined as the actual finished width and height of the panel including frames. No deduction will be made when NWF ordered order entry.



INSTALLATION INSTRUCTIONS

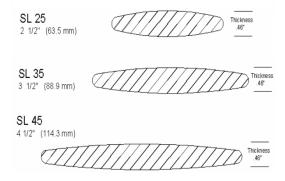
- 1. Remove and keep all packaging until installation is completed.
- 2. Carefully inspect all panels prior to installation.
- 3. Assemble the frame on a soft surface with Hoffman keys provided.
- 4. Place the frame into the window opening.
- 5. Install screws towards the top of the left & right frames first. Do not over tighten.
- 6. Install panel onto hinges with the hinge pins provided.
- 7. Rack bottom of the framing to level the tops of the panels evenly or the panel even with top frame as much as possible.
- 8. Tighten the screws into the bottom frame and bottom of the right and left frame, and adjust tightness to get a secure fit.
- 9. If panels are still uneven, slightly loosen screws in the slots of the hinges and adjust the panel position as need to acquire the correct location, and tighten screw back once in place.
- 10. Install screws every 18" to 24" around the frame check the panel close after each screw install.
- 11. Once frame is secure and panels are in the correct position, install a screw into the hinge set screw hole to prevent the hinges from moving over time.
- 12. If the shutter is not flat to the wall, use adhesive caulking to fill the uneven gaps between the wall and framing make small adjustments.
- 13. Install panel onto hinges.



TECHSMART POLY PROFILES

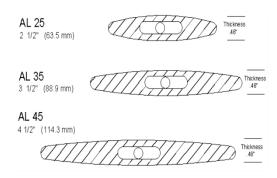
LOUVERS

Regular Series

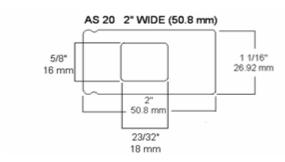


LOUVERS

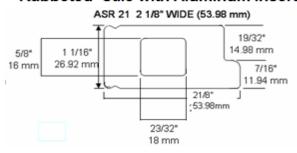
Reinforced Series



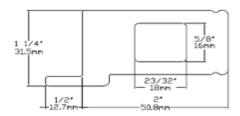
Standard Stile with Aluminum insert



Rabbeted Stile with Aluminum insert



Alum insert Astragal Stile AA20 2" WIDE (50.8 mm)



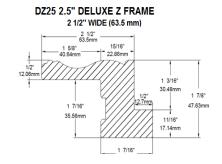


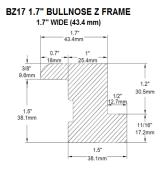


TECHSMART POLY PROFILES

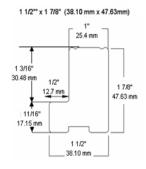
Z-FRAMES / L-FRAMES / HANGING STRIPS / T-POST / DECO / ARCH / BYPASS VALANCE

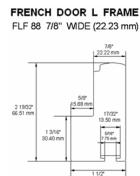
Z - FRAMES EZ30 3" ELEGANT Z FRAME 2 15/16" WIDE (74.92 mm) 2 15/16" 74.92mm 1 15/16" 49.22mm 2.5.7mm 1.18/10" 3.08" 1.18/10" 3.08" 1.18/10" 3.08" 4.08mm 1.78" 4.08mm 4.08mm



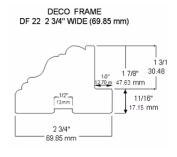


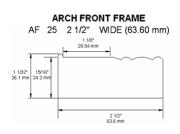
STANDARD L FRAME SL 10

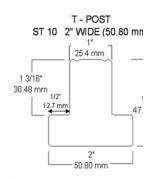


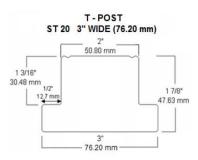


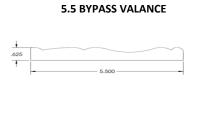










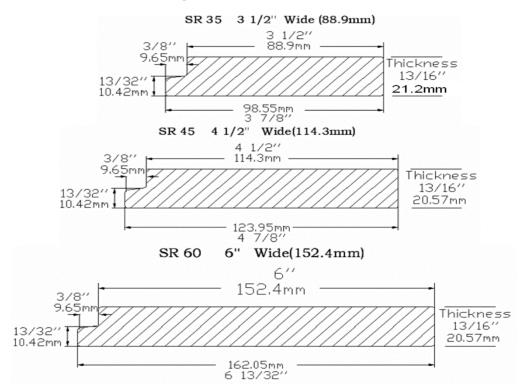




TECHSMART POLY PROFILES

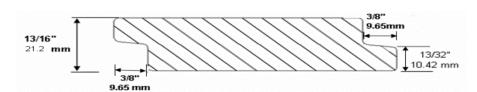
TOP/BOTTOM RAIL & DIVIDER RAIL / TILT BAR & LIGHT STOP

Top / Bottom Rail

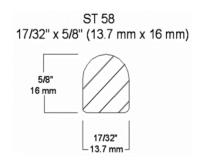


Divider Rail

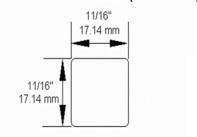
SD 24 2 2/5" Wide (80.3 mm)



TILT BAR



STOP LIGHT STRIP SS 58 11/16" WIDE (17.14 mm)







SHIPPING POLICY

TERMS & CONDITIONS

Delivery

To ensure prompt delivery, **TechSmart Shutters** ships merchandise using a common carrier for standard ground transportation delivery. There is no additional charge for delivery to authorized locations within the continental United States when requirements are satisfied. However, you will incur additional charges if special services are needed such as Inside Delivery, Re-Consignment, Re-Delivery, or if storage is required because you cannot be contacted. For shipments to Alaska, Hawaii, and other non-conterminous locations outside the United States, you will be responsible for all freight costs and any other charges incurred.

TechSmart Shutters will not be liable for any costs or losses resulting from delivery delays.

Multiple Ships to Location Charge

If you require Drop Ship to locations other than your initial account setup address, there will be an additional \$2.00 /sq. ft. plus freight charges.

Shortage or Damage Claim

Failure to note shipping shortages or visible damages on the Delivery Receipt will release **TechSmart Shutters** from any liability thereof. For concealed damages, **TechSmart Shutters** must be notified within five days of receipt of shipment.

Expedited Shipping

If you want an expedited shipping method, please contact our Customer Service department for more information.

Re-consignment Charges

If you need to change the shipping location after the merchandise is shipped out from our facilities, you will be liable for charges incurred. Charges are based on the carriers' policies. To have shipments re-consigned, you must e-mail or fax **TechSmart Shutters** the request and acknowledge the additional charges.

Storage Fee

You are liable for storage fees if merchandise is stored on the carriers' dock or **TechSmart Shutters** facility for any reasons caused by you.

Other Charges

If you request additional services from the driver of the shipping company such as Inside Delivery or COD you will be liable for additional charges. Drivers are not allowed to deliver merchandise inside warehouses. However, if Inside Delivery service is necessary, you must make this request in writing and acknowledge the additional costs. You are also responsible for re-delivery fees, if applicable.





SHUTTER WARRANTY

Who is Covered

This warranty extends only to the original purchaser.

Product Coverage

All products are warranted against defects in materials and workmanship. This warranty is valid for shutter panels properly installed and maintained in residential dwellings.

Length of Coverage

All products are warranted against defects in material and workmanship for 20 years to the original purchaser. Any defects need to be reported to **TechSmart Shutters** for resolution.

What We Will Do

If the product is found to be defective in material or workmanship under normal use, **TechSmart Shutters** will, at its discretion, repair or replace any defective parts or components without charge, provided that the original purchaser ships the product to the designated repair facility pre-paid. This shall be the sole remedy under this warranty. The dealer will coordinate with **TechSmart Shutters** for services.

How to Obtain Warranty Service

To obtain service under this warranty, please first contact the original selling dealer and the dealer will coordinate with **TechSmart Shutters** for services.

What We Will Not Cover

This warranty does not cover conditions or damages resulting from accidents, alterations, misuse, abuse, misapplication, fire, flood, or other natural disasters, or failure to follow use, care or installation instructions. **TechSmart Shutters** will not be liable for trip charges, measuring, disassembly, removal, reassembly or installation of this product, nor for damages or loss to other property.

No Consequential Damages

This warranty is exclusive and in lieu of all other obligations, liability or warranties. **TechSmart Shutters**, its distributors or dealers, are not liable for neither incidental nor consequential damages or for any other direct or indirect damage, loss, or expenses.

Rights Under State Law

This warranty shall be governed under the Laws of the State of Texas. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

To replace or repair the product is at the sole discretion of **TechSmart Shutters**. **TechSmart Shutters** is not responsible for the removal, reinstallation nor shipping charges associated with the warranty service.

Contact Information

Mailing Address: 3709 E. Randol Mill Road, Suite 200 Arlington, TX 76011

Phone: 817-633-4005 Fax: 817-633-4780





TERMS & CONDITIONS POLICY

TERMS & CONDITIONS

Cancellation and Modification

The prompt delivery of your order requires strict manufacturing scheduling.

Therefore, once an order has been submitted cancellations or changes will not be accepted after 48 hours and you will be liable for the full cost of the order. Any costs and/or expenses resulting from a cancellation or an order change will be charged to your account.

Communication

All account information changes and order modifications must be made in writing and sent to **TechSmart Shutters**, via fax or e-mail. Addresses, purchase orders, and side marks may be changed provided that the order has not shipped from our facilities. **TechSmart Shutters** reserves the right to refuse any requests made after an order has been submitted.

Warranty Waiver

When a shutter is ordered beyond limitations or out of spec, you can proceed with the shutter as ordered but have the warranty voided, or you can revise the shutter to be within limitations.

Production and Delivery Lead-Time

China Production

- Custom Made Order Program: 10 business days ready to ship from China (Departure time is subject to vessel availability).
- Ocean transit time is approximately 20 days to Los Angeles, CA and inland transit time varies by location.

Dallas Production

- Custom Made Order Program: 10 business days ready to ship from Dallas.
- Inland transit times vary by location.





RGA POLICY

RGA Request Form

In order to process an RGA (Return Goods Authorization), you will need to complete the RGA Request Form with all the pertinent order information. A sales support team member will review the request and contact you to discuss the details.

To file a claim: Print the RGA Request Form from a sales support team member. Fill out the form and fax it to (817)633-4780, Attn: Claim Department.

Shipping Claims

When receiving a delivery, always unwrap all pallets, count all boxes, and note any problems before signing the Delivery Receipt. Upon receipt of shipments, customers are responsible for immediately inspecting the entire shipment, regardless of the final date of installation. All shipping claims must be reported in writing within 5 business days of receipt. Failure to do so will release **TechSmart Shutters** from any liability.

If you are filing a shipping or concealed claim, retain the damaged goods and the original packing material pending a physical inspection. The carrier or AVONDALE reserves the right to call back the items for I nspection. To expedite your claim, take digital photos of the damaged items and its packaging.

If merchandise has been re-routed to a different location other than the original address indicated on the order, or the call back's pick up address is different than the SHIP TO address: **TechSmart Shutters** will not honor the shipping damage claim.

Visible Damages

Customers are required to note visible damages on the Delivery Receipt. All damages must be reported in writing within 5 business days of receipt. Failure to do so will release **TechSmart Shutters** from any liability. Refer to the "Shipping Claims" section for more information.

Concealed Damages

Any concealed damages must be reported in writing within 5 business days of receipt. Failure to do so will release **TechSmart Shutters** from any liability. Refer to the "Shipping Claims" section for more information.





RGA POLICY

RGA Request Form

Quantity Shortages

Customers are required to note any quantity shortages on the Delivery Receipt (the document you are asked to sign by the carrier). Before signing off the Delivery Receipt, check the entire shipment and compare the quantity received against the quantity noted on the Delivery Receipt and the Packing Slip (the document inserted in the clear pouch attached to the merchandise). Failure to do so will release **TechSmart Shutters** from any liability under in any circumstances.

TechSmart Shutters will only replace shorted items noted on the Delivery Receipt; **TechSmart Shutters** will not honor submissions of quantity shortage claims that are not noted on the Delivery Receipt.

Claims must be reported in writing within 5 business days of receipt; Failure to do so will release **TechSmart Shutters** from any liability. Refer to the "Shipping Claims" section for more information.

TERMS & CONDITIONS

Callbacks

Based on the RGA claim, **TechSmart Shutters** and the carrier reserve the right to call back the components, cut-down product, or shutter (and any parts thereof) with the original packaging for inspection.

If a callback is issued, the requested item(s) need to be packed and ready for pick up. **TechSmart Shutters** will contact you and arrange for the carrier to pick up the item(s).

If the callback inspection results show that the original order does not comply with the claim, customers will be responsible for the cost of the original order and the costs associated with the reorder including a 20% restocking fee.

If the inspection results show that the original order complies with the claim, the RGA request will be processed at no cost to you.

Important Notes:

- 1. Damaged goods must be held pending a physical inspection by a **TechSmart Shutters** representative.
- 2. All RGAS must go through the sales support department for authorization and processing.
- 3. **TechSmart Shutters** will not refund the cost of an order at any time.





Date:		
RGA#:		

Return Goods Authorization Request Form

Customer Name:		9		
Address			•	
Phone #	-	#: 800-741-8251		
Order / PO #: Sidemark	Att	n: Derek Stuth		
Room	Description	Parts	Cause	Resolution
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				53
OMMENTS:	Signature:		7.5	
Internal Use Only: TSC Use:		.		8
Orty	Description	Rate	Costs	
*	30.3			
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		+		