

# ULTRA SERIES PRODUCT CATALOG



**KOLBE**  
■ WINDOWS & DOORS ■

*See the Difference Quality Makes®*





## FUNCTIONALITY & PERFORMANCE

The Ultra Series is Kolbe's line of extruded aluminum clad wood windows and doors. This series offers a variety of exterior finishes, interior options and performance modifications.

Create a unique exterior trim coupled with an anodized finish to give dazzling appeal to a unit. Or, enhance the view with custom divided lite designs or a geometric shape. Almost anything is possible, allowing you to create and customize the look and design that fits your ideas while still having the quality workmanship and attention to detail that Kolbe® is known for.

## COMMITMENT TO QUALITY

Kolbe is truly committed to providing the highest quality windows and doors. By associating with the NFRC, Window and Door Manufacturers' Association Hallmark Certification Program and the ENERGY STAR® Program, Kolbe products are built to meet the diverse and expanding needs of residential and commercial projects. Rest assured that Kolbe products are tested in an unbiased manner by independent laboratories and that test data is available to the public. See Energy Performance Data on pg. 202.

## SUSTAINABLE DESIGN

Ultra Series products can help contribute to meeting criteria for voluntary green building rating systems in the following categories:



### SUSTAINABILITY & DURABILITY

- Kolbe products are tested for air and water infiltration, as well as structural and impact performance to ensure you will have a certified product to meet your building's design criteria

### MATERIALS AND RESOURCES

- Most of the components used in our products are sourced from within 500 miles of our factory
- Pine and other wood species are renewable resources and sourced from managed forests
- Kolbe has achieved Forest Stewardship Council (FSC) Chain-of-Custody certification, as have many of our distributors, and can provide FSC-certified wood for many window and door products
- Standard glass used in our products contains 25-30% pre-consumer recycled content
- Extruded aluminum billet consists of 50-75% recycled material



### INDOOR ENVIRONMENTAL QUALITY

- Kolbe uses a fully encapsulated process in which volatile organic compounds (VOCs) are destroyed when applying wood preservative and 70% PVDF fluoropolymer exterior finish
- Interior paints and stains are water-based, low-VOC products and having your windows and doors factory-finished saves you the hassle of field-finishing, clean-up and disposal
- BetterVue® fiberglass screen mesh has attained GREENGUARD® certification

### ENERGY PERFORMANCE

- Units meet or exceed ENERGY STAR® requirements for all climate zones in the United States\*



\*For more information on ENERGY STAR and energy and performance data for Ultra Series windows, refer to pages 202-203.

For further details about how Kolbe products can contribute to sustainable green design, ask your local Kolbe dealer for a copy of the Green Initiatives brochure, or visit our website at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).









## TABLE OF CONTENTS

---

GLASS OPTIONS

6

DIVIDED LITE OPTIONS

8

FINISH OPTIONS

10

OTHER OPTIONS & ACCESSORIES

12

CASEMENTS

19

AWNINGS

57

DOUBLE HUNGs

69

SLIDERS

99

PATIO DOORS

107

ENTRANCE DOORS

135

COMPLEMENTARY

157

ACCESSORIES

176

TECHNICAL DATA

187

STENTZ  
NONO

This catalog is intended to show options available. Pricing within standard and custom options may vary. Please contact a Kolbe dealer for details.

# GLASS OPTIONS

## SUPERIOR AS STANDARD

Kolbe believes that quality is in the details. That is why we insist on using a glazing system to achieve optimum energy efficiency of the overall window unit. Double pane insulating glass with LoE<sup>2</sup>-270 coating, filled with argon gas, is standard. Numerous glass options are available for different applications and various geographic regions. Special glass requests are also welcomed.

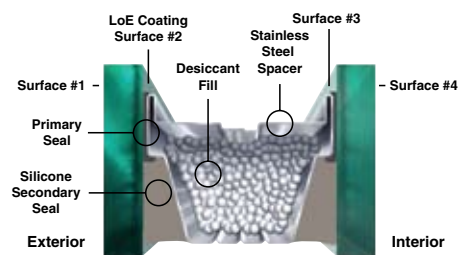
## LoE COATING

Kolbe's standard LoE<sup>2</sup> coating reduces energy transfer through the insulating glass unit. The performance of LoE<sup>2</sup> glass is achieved through a sputter coating process. The coating achieves one of the highest levels of energy performance possible. This process is also environmentally sound and creates no emissions or residues. In summer, LoE<sup>2</sup> glass allows visible sunlight in while blocking 96% of the sun's infrared heat energy, while in winter, LoE<sup>2</sup> glass reflects roomside heat back into the room. The result is significant savings in heating and cooling costs throughout the year. Kolbe's standard LoE<sup>2</sup> glass also selectively filters out 86% of the sun's harmful ultraviolet rays, which provides protection against the fading of furniture, fabrics and carpeting.

## ARGON GAS

To further boost energy efficiency, Kolbe's standard glass is filled with argon gas. This naturally existing gas is colorless, odorless, non-toxic, non-corrosive and non-flammable. Its thermal conductivity is 30% lower than that of air. Together, the LoE<sup>2</sup> coating and argon gas result in a 51% improvement in U-factors and a 104% improvement in R-values as compared to air-filled insulating glass without LoE<sup>2</sup>. What's more, because units with argon are assembled in vacuum chambers, they do not require unsightly plugs in the spacer bars. To maintain the integrity of the product, units to be installed in or shipped through high altitude areas may not include argon gas.

## THERMO-EDGE SPACER



Kolbe's standard glass is complemented by a state-of-the-art, stainless steel spacer bar system on most units. These Thermo-Edge units achieve low heat conductance throughout the edge seal design. The primary seal of the dual-seal construction is compressed polyisobutylene, while the secondary seal is silicone. In addition, desiccants are enclosed within the stainless steel spacer to absorb moisture and the spacer corners are bent to be air/gas tight. This improves the overall U-factor of the window and can reduce the potential for condensation by increasing the roomside glass temperature at the frame/glass interface. Thermo-Edge spacers are one of the many quality details that define Kolbe windows and doors. Thermo-Edge spacers are not available on very small radius units, units with 1/2" insulating glass with champagne spacer bars or units with brass "pencil" bar grilles-in-the-airspace.



## GLASS OPTIONS

### LoE<sup>2</sup>-240

A tinted glass recommended for warm climates that achieves solar control over a wide range of the spectrum, while also helping to reduce glare.

### LoE<sup>3</sup>-366

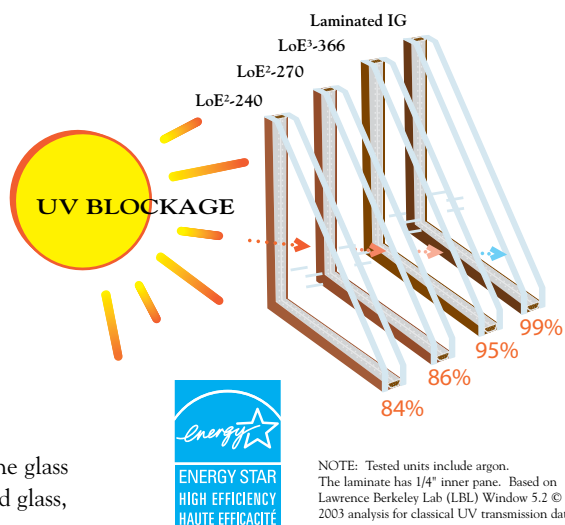
Recommended for all climates, with maximum protection against heat loss and UV damage.

### THERMAPLUS LoE

Helps to meet the strictest energy requirements; provides protection against heat loss and UV damage.

### NEAT®

Neat harnesses the sun's UV rays to loosen dirt so water can rinse it away, leaving windows virtually spotless. A special sputter-coating process makes the glass ultra smooth, so the water "sheets off" more readily than it would on uncoated glass, allowing you to spend less time cleaning.



### MOUNTAIN AIR ENERGY PACKAGE

The Mountain Air Package is specifically designed to meet a U-factor of .30 without argon gas. The package consists of a specially-constructed frame, second-generation ThermaPlus glass with LoE-366 and a breather tube within the insulating glass unit. The Mountain Air Package is available for Crank-Out Casements and Awnings, Sterling Double Hungs, and Studio/Picture, Transom and Direct Set units to match Crank-Out Casements and Sterling Double Hungs.

### TRIPLE PANE

Triple pane glass provides you with a greater energy performing window that keeps indoor air warm and comfortable, prevents heat loss and lowers your heating bills. It is constructed with three panes of glass, argon gas, Thermo-Edge spacer bars and is available with a variety of LoE coatings that best suit your needs. Triple pane glass is available on the Sterling Double Hung, EP Casement, EP Awning and Majesta Double Hung models.

### BRONZE OR GRAY TINTED

Provides shading to interiors.

### PATTERNED OR COLORED

Adds visual interest to any window or door. Also provides privacy to rooms.

### FINELY CRAFTED GLASS

Finely crafted glass is held within clear, insulating glass which provides protection to the decorative elements and makes for easy cleaning. (Finely crafted glass is not available with LoE<sup>2</sup>, argon gas or Thermo-Edge spacers). Available with brass, lead or zinc caming.

### TEMPERED

Safety standard in Kolbe doors. Essential to meet some building requirements.

### LAMINATED

Provides the ultimate in UV blockage (see illustration above) and safety, security and sound control.

### IMPACT

Glazing utilized to withstand harsh environmental conditions, especially in coastal regions. Combined with an impact product, such as K-Force®, this product offers the highest level of security.

### PRESERVE

Helps keep glass clean and debris-free during travel, installation and field finishing. The Preserve film is applied to the interior and exterior of the unit, causing any mess to stay on the film and be removed easily once the job is completed.

LoE<sup>2</sup>, LoE<sup>2</sup>-240, LoE<sup>2</sup>-270, LoE<sup>3</sup>-366, Neat and Preserve are trademarks of Cardinal IG.

LoE insulating glass carries a 20-year warranty. Not all glass options listed have the same glass warranty. Please contact your supplier for details.

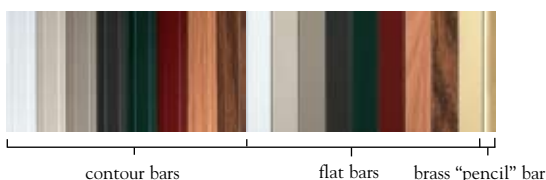
## DIVIDED LITE OPTIONS

Expand the character of your home or project by adding one of our divided lite options to your windows and doors. Choose anything from a traditional, colonial-style pattern to a unique, custom design to accentuate the overall appearance of your project. Kolbe offers three types of divided lites: grilles-in-the-airspace, wood removable grilles and performance divided lites. As standard, wood bars have a beveled profile, however, an ovolo profile or square profile is also available. (See profile options on pg. 9.) Divided lite cross section drawings can be found on pgs. 184-185.



### GRILLES-IN-THE-AIRSPACE

Grilles-in-the-airspace are constructed with aluminum bars sealed between two panes of insulating glass, offering the look of divided panes while reducing cleaning time. For units with 7/8" insulating glass, contoured, 3/4" wide bars are standard in White, Beige, Sand, Rustic, Hartford Green and Chutney. Optional colors are light wood and dark wood faux finishes. Flat, 5/8" wide grille bars are also available in White, Beige, Sand, Rustic, Hartford Green, Chutney, light wood and dark wood faux finishes and Brass. Two-tone contour or flat grilles are available with either light or dark wood faux finishes to the interior and White to the exterior. Also available for 7/8" insulating glass are 5/16" wide brass "pencil" bars.



### WOOD REMOVABLE GRILLES

Wood removable grilles are built with a full surround frame and bars that interlock at the joints for stability. Grilles are applied to the interior of the window using an exclusive hidden clip system.\* This system makes unsightly pins and attachment points unnecessary and removal or replacement easy. Grille bars are profiled on the interior like traditional grilles with detailed grooves on the exterior for subtle depth and richness. As standard, bars are constructed of unfinished pine and are 7/8" wide on windows and 1-1/8" wide on doors. Custom patterns, bar widths, wood species and interior stains may be available upon request.

\* A clear pin system will be used for Garden-Aire sliding patio doors, and divided lites will not have accent lines on the bar exterior.





Beveled  
Profile



Ovolo  
Profile



Square  
Profile

## PERFORMANCE DIVIDED LITES

Kolbe's performance divided lite (PDL) glazing system gives the appearance of true divided lites without sacrificing energy efficiency. Extruded aluminum bars are adhered to the exterior and wood bars to the interior of the single lite of insulating glass.\* Aesthetically pleasing spacer bars are installed within the insulating glass unit. Together, these bars create the illusion of true divided lites. PDL bars are available in 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bar widths. The exterior finish of the aluminum bars will match the exterior finish on the unit. Variations on the PDL option may include custom divided lite patterns, bar widths or no spacer bars.

\* Some intricate radius designs may have a composite material for the exterior PDL bar.

## GLAZING BEADS & MUNTIN BARS

As standard, glazing beads have a beveled profile, but may also be ordered with an ovolo or square profile. Matching muntin bars are available on units with performance divided lites (PDL) and wood removable grilles (square profile not available on wood removable grilles). Units will have beveled muntin bars on the exterior, regardless of which profile is chosen for the interior (See divided lite cross section drawings on pgs. 184-185).

# EXTERIOR FINISH OPTIONS

## ALUMINUM CLADDING

Ultra Series products are finished with a 70% PVDF fluoropolymer coating that meets the performance requirements of American Architectural Manufacturer's Association (AAMA) 2605-05. For the most demanding situations, this coating is the best choice for durability and resistance to chemicals, abrasion, corrosion and weathering. It carries up to a 30-year warranty, which proves Kolbe's commitment to providing the very best. Ultra Series clad products are available in 14 standard colors and 18 specialty colors, with custom colors available.

## 70% PVDF FLUOROPOLYMER FINISHES



## ANODIZED ALUMINUM FINISHES

Special order for most Ultra Series units



\* These are specialty colors which will incur an added charge and possible longer lead times. Talk to your local Kolbe dealer for more information.

Printed images of exterior finishes may vary slightly from actual colors. Selections should be made based on actual color samples.



# INTERIOR WOOD & FINISH OPTIONS

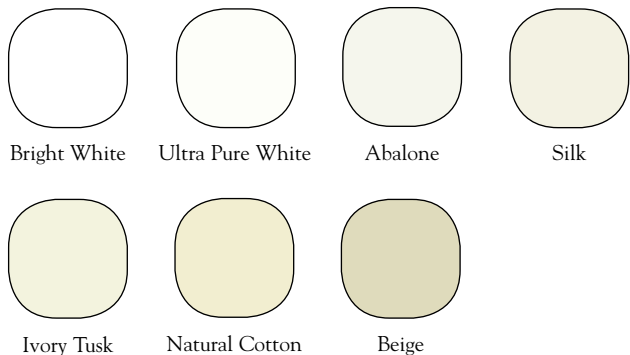
## INTERIOR PREFINISHING

Kolbe windows and doors may be prefinished on the interior with one of the available water-based paints or stains. Stained units are given two coats of water-based satin finish clear sealer with light sanding between coats. Custom paint and stain colors may be requested.

## STAIN OPTIONS



## PAINT OPTIONS



Custom paint colors are available.

Printed images of stain options and wood species will vary from actual product colors. Selections should be made based on color samples available from your Kolbe dealer.



## INTERIOR WOOD OPTIONS

In addition to the standard pine, Kolbe offers other optional wood species to enhance the look of a window or door unit. Kolbe also offers FSC-certified wood species for your green building projects. Ask about the availability of additional wood species.



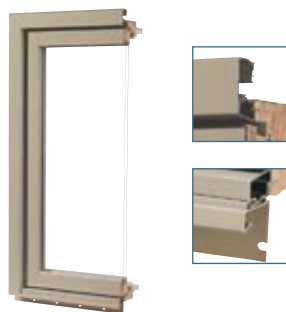
# OTHER OPTIONS & ACCESSORIES

## EXTERIOR TRIM OPTIONS

Ultra Series windows and doors are standard without brickmould. For a more distinctive look, numerous different extruded aluminum trim pieces are available (styles pictured below). Various sill nosings can also be applied with brickmould to enhance the overall appearance and to create the perfect look. Custom brickmoulds and casings are available as well; talk to your local Kolbe dealer for more information.



1-15/16" brickmould with traditional sill nosing



2" flat casing with traditional sill nosing



3-1/2" profiled brickmould with sill drip



3-1/2" flat casing with 1-5/8" projected sill nosing  
add 3-1/2" flat sill nosing



3-1/2" flat casing with backband with 2-1/8" projected sill nosing



Ogee casing with 2-1/8" projected sill nosing



Bull nose casing with 2-1/8" projected sill nosing



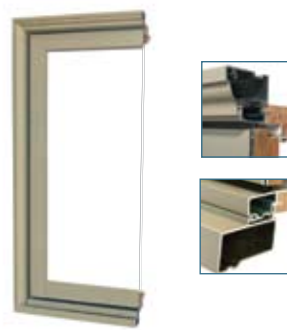
Historic brickmould with 2-1/8" historic sill nosing



2" flat casing with backband with 2-1/8" projected sill nosing



Stucco casing with stucco trim sill nosing



Pavilion brickmould with 2-1/8" projected sill nosing

Note: Additional trim details are shown on pages 176-182.

# OTHER OPTIONS & ACCESSORIES

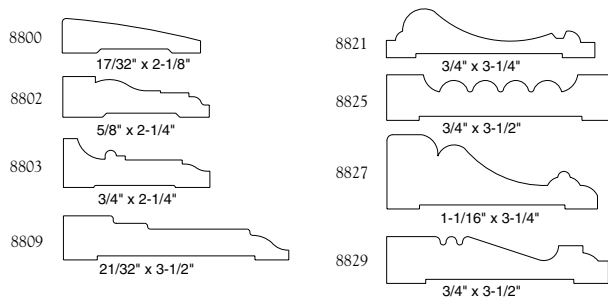
## INTERIOR CASING

Accent the interior of windows and doors with interior casing by Kolbe.

As standard, choose either 2-1/8" wide ranch casing or 2-1/4" wide colonial casing. Ranch and colonial casings are available in unfinished pine or oak, ready for paint or stain. Curved radius casing is available as well, to match the curves of Kolbe radius units.



Specialty mouldings are available in pine, oak and other wood species. Shipped loose for field application, specialty mouldings are available in a wide variety of profiles, some of which are shown below.



## PRODUCT PERFORMANCE MODIFICATIONS

Most Kolbe products can be modified to meet even the strictest building code requirements. Depending on the criteria, Kolbe offers high performance and K-Force®



impact performance product modifications to improve air, water, structural and/or sound transmittance ratings. Special construction methods may be used, such as thicker parts, additional support or alternate glazing methods. Laminated impact glass is always used in K-Force impact certified products. Single and double pane impact glass are available to meet specific impact rating levels. K-Force impact products are unique because the performance level is achieved without sacrificing the beautiful appearance. There are no unsightly brackets or visible rods to hold the sash in place, and no extra locks to fasten. Contact your Kolbe window and door supplier for further details.







## STORMGUARD

Kolbe's durable StormGuard combination storm/screen units provide extra protection from the elements. Units feature two glass inserts and one screen insert that can be removed from the interior for cleaning. Frames are constructed of extruded aluminum made of a lightweight alloy, which is easy to handle without sacrificing performance. Weatherstripping along the top and sides of all three inserts ensures a tight fit that will withstand harsh weather. Weep holes channel water out to help prevent damage to the window sill. The sight lines and profile of a StormGuard unit closely matches the window it complements, which means the unit will blend in and your view will not be obscured. Screen inserts have fiberglass mesh as standard; aluminum mesh is optional. StormGuards for Ultra Series double hung and slider windows are available in Ultra Pure White, White, Beige, Sand, Rustic, Hartford Green, Chutney and Coal Black.



Double Hung  
StormGuard  
in White



Slider  
StormGuard  
in Beige

## STERLING DOUBLE HUNG RETRACTABLE SCREEN KIT



A retractable screen kit for those who occasionally prefer an unobstructed view is offered for Kolbe Sterling double hungs. Wood components that match the interior wood species and finish disguise the screen hardware, revealing only the beauty of the window. When

you want to open your window and use the screen, operation is practically effortless. Simply press the pull bar down to the sill to engage the screen. A gentle push toward the exterior allows the screen to retract.

Included in the kit are all the components necessary for field installation on an Ultra Series Sterling double hung.

## SWINGING SCREEN DOORS



Swinging screen doors are available for field installation with Kolbe single and double inswing doors. Screen doors feature an adjustable self-closing mechanism. Double swinging screen doors are equipped with spring-loaded locking mechanisms on the head and sill of the passive door. Screen doors also feature weatherstripping around the frame perimeter and on the astragal of double screen doors; rubber door sweeps meet the sill. Swinging screen door frames are available in over 30 colors, plus custom colors.

## OTHER OPTIONS & ACCESSORIES

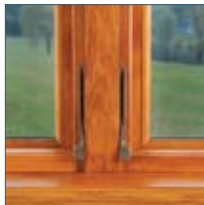
### UNIVERSAL DESIGN

To meet the needs of homeowners with physical limitations, Kolbe offers a variety of window and door options that are designed to make independent living possible. From door sills that create a flush surface for easier passage between the interior and exterior, to window and door hardware that provides ease of operation, we have numerous options that will help make living at home far easier. Whether your project is new construction or you are adapting an existing residence for a special need, Kolbe's windows and doors with universal design options will give you the freedom and style you are seeking. Below are some examples.

#### CASEMENTS



Longer crank handles with large knobs for casement windows make operating easier. Available in white or clay.



Larger levers for multi-point casement locks make locking of a casement window easy. Available in white or clay.



Motorized operators make opening and closing casement windows simple and effortless. This is especially helpful for bow and bay units that are set back. Available in white or clay.

#### DOUBLE HUNG



A crank handle hardware kit for double hungs allows the bottom sash to be operated with minimal effort. Available in white.

#### SWINGING DOORS



Wider interior and exterior door sizes help provide additional space for those who use mobility aids.



Bronze anodized handicap sills (thermal break and non-thermal break) for swinging doors create a flush surface for easy access to pass through.



Lever handles for swinging doors are available in a variety of styles and finishes and make operation easier than doors with knobs.

#### SLIDING DOORS



Aluminum sill ramp kits for Garden-Aire sliding patio doors allow smooth transitioning between the interior and exterior of the home.

*Many of these options meet standards of the Americans with Disabilities Act.*

*Other options such as taller bottom rails on doors are also available to meet these standards.*

*Certain product limitations and modifications may apply. Please contact your local Kolbe dealer for more information.*







# ULTRA SERIES | FEATURES AT A GLANCE

S = standard

O = option

N/A = not available

	EXTERIOR FINISH			DIVIDED LITES			GLASS				
	Roll-Formed Aluminum Sash	Extruded Aluminum Sash	Extruded Aluminum Frames	Grilles-in-the-Airspace	Wood Removable Grilles	Performance Divided Lites (PDL)	LoE <sup>2</sup> -270	LoE <sup>2</sup> -240 or LoE <sup>3</sup> -366	Impact Rated Glass	Tempered Glass	Triple Pane Glass
Crank-Out Casements and Awnings	N/A	S	S	O	O	O	S	O	O	O	N/A
Push-Out Casements & Awnings	N/A	S	S	O	O	O	S	O	O*	O	N/A
EP Casements & Awnings	N/A	S	S	O	O	O	S**	O**	N/A	O	S
Segment Heads & Half Circle Top Casements	N/A	S	S	O	O	O	S	O	O	O	N/A
Traditional Double Hungs	S	N/A	S	O	O	O	S	O	N/A	O	N/A
Sterling Double Hungs	N/A	S	S	O	O	O	S	O	O	O	O
Magnum Double Hungs	S	N/A	S	O	O	O	S	O	N/A	O	N/A
Majesta Double Hungs	N/A	S	S	O	N/A	O	S	O	O	O	O
Segment Head & Half-Circle Top Double Hungs	N/A	S	S	O	O	O	S	O	N/A	O	N/A
Double & Triple Sliders	S	N/A	S	O	O	O	S	O	N/A	O	N/A
Rectangular Transoms	N/A	S	S	O	O	O	S	O	O	O	N/A
Fixed Radius Windows	N/A	S	S	O	O	O	S	O	O	O	N/A
Fixed Geometric Windows	N/A	S	S	O	O	O	S	O	O	O	N/A
Garden-Aire Sliding Patio Doors	N/A	S	S	O	O	O	S	O	N/A	S	O
Garden-Aire Sliding Patio Doors (wide stile & rail option)	N/A	S	S	O	O	O	S	O	O	S	O
Folding Patio Doors	N/A	S	S	O	O	O	S	O	N/A	S	O
TerraSpan Sliding Patio Doors	N/A	S	S	O	N/A	O	S	O	O	S	O
Inswing Patio Doors	N/A	S	S	O	O	O	S	O	O	S	N/A
Inswing Entrance Doors	N/A	S	S	O	O	O	S	O	O	S	O
Outswing Entrance Doors	N/A	S	S	O	O	O	S	O	O	S	O

## NOTES:

\* Push Out Casements are impact certified; Push Out Awnings are not.

\*\* On EP Casements and Awnings, LoE<sup>2</sup>-270 is applied as standard to surface #2 in conjunction with LoE-180 on surface #5. Other coatings may be available; please contact your local dealer.

Options may have other limitations; please verify with your local dealer.



# ULTRA SERIES | CASEMENTS

CRANK-OUT CASEMENTS

FRENCH CASEMENTS

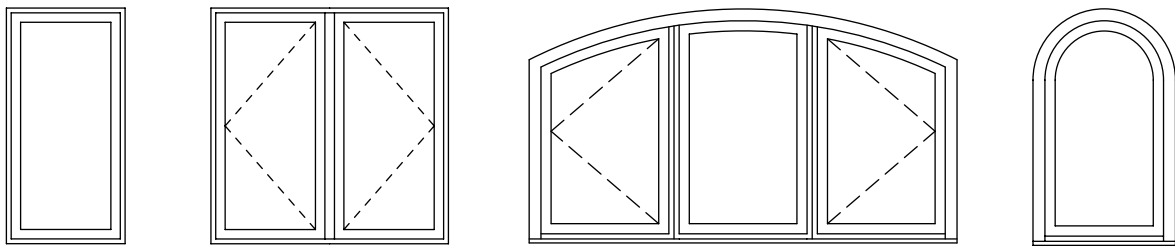
PUSH-OUT CASEMENTS

STUDIO & TRANSOM UNITS

PICTURE COMBINATION UNITS

BOW & BAY UNITS

SEGMENT HEAD & HALF-CIRCLE TOP UNITS



The design and performance of Ultra Series casements are what make these windows so popular. Most casements open from the side to a 90 degree angle, which allows for maximum ventilation. Corrosion-resistant hardware and folding handles make operation easy. The multi-point lock offers a sleek and convenient way to tightly secure your windows from one locking location.



# ULTRA SERIES | CRANK-OUT CASEMENTS

## CRANK-OUT CASEMENT STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 2-3/4" plus extensions)
- Constructed of pine, with pine interior stops and wood mull casings on mullied units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit onto the wood frame exterior of all units, as well as the sash
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Interior screens with clay-colored aluminum frames and BetterVue® fiberglass mesh
- Clay-colored folding handles, operator covers and multi-point locks
- Dual-arm operators with concealed, adjustable hinges (on "W" series and wider. Dyad operators with concealed, adjustable hinges on units narrower than "W"; single-arm operators with Tri-Euro hinges for added support on segment head, half-circle top and K-Force® impact units)
- Stainless steel exterior operator parts
- Heavy vinyl nailing fins with head drip caps\*\*
- Pine-veneered head and seat boards; unique, narrow mullions and cable support system on bow and bay units

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

## MULTI-POINT LOCK



Ultra Series casements feature a multi-point locking system as standard. Up to three locking points are operated from one convenient location to quickly and securely lock units. A sleek slim-line handle and escutcheon makes windows more attractive. Handles and escutcheons are factory-applied in Clay as standard. Other finishes available are White, Beige, Brass and custom finishes listed on pg. 21.

NOTE: Not available on French casements.

Vinyl nailing fin applied as standard on units without brickmould



## CRANK-OUT EP CASEMENT

Crank-out EP casement windows feature triple pane glass to provide higher energy performance as well as meet the ENERGY STAR® criteria for Canadian climate zones.

### STANDARD FEATURES

(includes standard features above, with the exception of the following substitutions):

- 2-1/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 3-1/4" plus extensions)
- 1-3/8" total thickness of triple pane glass with LoE<sup>2</sup>-270 and LoE-180
- Multi-point keeper
- New engineered hinge designed to accommodate the additional sash weight



Triple pane glass is featured on the Crank-Out EP Casement as standard

## HARDWARE

Clay-colored, folding handles are applied to casement units as standard. Other finishes available are White, Beige, Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black. Multi-point lock handles will match operator handle colors.



folding handle in Clay  
(closed)



folding handle in Clay  
(open)



## CRANK-OUT AND EP CASEMENT OPTIONAL FEATURES

**GLASS** (pgs. 6-7): (Crank-Out EP Casement only available with triple pane glass)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Mountain Air Energy Package
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

**DIVIDED LITES** (pgs. 8-9):

- Grilles-in-the-airspace (not available on Crank-Out EP Casement)
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

**OTHER OPTIONS:** (not all options are available on all casement types; custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)

- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Hardware, multi-point locks and operator covers in White, Beige, Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Universal design casement handle and lock in White, Clay or Rustic Umber
- Single-arm operators with Euro hinges (meets emergency escape and rescue requirements on some "L" Series casements)
- Screens with White, Beige, Dark Bronze Anodized, or clear Anodized frames
- UltraVue® screen mesh
- Screens with aluminum or charcoal-colored aluminum mesh (excluding Brass frames)
- Custom brass frames or screens (not available on radius top units)
- Wood wrapped screens (not available on radius top units)
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Bow and bay options: insulated platforms, support brackets, and oak-veneered head and seat boards
- High performance or K-Force® impact modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

# ULTRA SERIES | PUSH-OUT CASEMENTS



## PUSH-OUT CASEMENT STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 2-3/4" plus extensions)
- Constructed of pine, with pine interior stops and wood mull casings on mull units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units, as well as the sash
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Single-point lever handle in a Rustic Umber finish
- Concealed hinges (segment head and half-circle top units use Tri-Euro hinges for added support)
- Heavy vinyl nailing fins with head drip caps\*\*

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

## HARDWARE

Single-point push-out casement handles are factory-applied in a Rustic Umber finish as standard. Other finishes available are Antique Brass or Satin Nickel. Multi-point handles are also available in Rustic Umber, Antique Brass or Satin Nickel finishes.







## PUSH-OUT CASEMENT OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (not all options are available on all casement types; custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)

### NOTES:














































All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Hardware available in Antique Brass or Satin Nickel finish
- Multi-point handles in Rustic Umber, Antique Brass or Satin Nickel finish
- Wood framed hinged/swinging screen or retractable screen (segment head and half-circle top casements are only available with a hinged/swinging screen)
- BetterVue® or UltraVue® screen mesh
- Screens with aluminum or charcoal-colored aluminum mesh (hinged/swinging screen only)
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- High performance or K-Force® impact modifications

# ULTRA SERIES CASEMENTS

## CASEMENTS "S" SERIES

F.S.	1'-4"	2'-8"	4'-0"	5'-4"	6'-8"
R.O.	1'-4 1/2"	2'-8 1/2"	4'-0 1/2"	5'-4 1/2"	6'-8 1/2"
G.S.	10 5/8"	10 5/8"	10 5/8"	10 5/8"	10 5/8"
G.S.*	9 7/8"	9 7/8"	9 7/8"	9 7/8"	9 7/8"
2'-0"					
	KUS12†	KUS22†	KUS32†	KUS42†	KUS52†
2'-6"					
	KUS126†	KUS226†	KUS326†	KUS426†	KUS526†
3'-0"					
	KUS13	KUS23	KUS33	KUS43	KUS53
3'-6"					
	KUS136	KUS236	KUS336	KUS436	KUS536
4'-0"					
	KUS14	KUS24	KUS34	KUS44	KUS54
4'-6"					
	KUS146	KUS246	KUS346	KUS446	KUS546
5'-0"					
	KUS15	KUS25	KUS35	KUS45	KUS55
5'-6"					
	KUS156	KUS256	KUS356	KUS456	KUS556
6'-0"					
	KUS16	KUS26	KUS36	KUS46	KUS56

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to Sash O.S.M.	-1 7/8"	-1 7/8"
Sash O.S.M. to G.S.	-3 1/2"	-3 1/2"
G.S. to D.L.O.	-1"	-1"
G.S. to Screen O.S.M.	+2 1/16"	+13/16"
F.S. to G.S. (for push-outs)	-6 1/8"	-6 1/8"

NOTE: Clear opening dimensions can be found on pg. 188.

Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 15/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+3 3/8"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+4 11/16"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

#### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Glass size for push-out casements.

† These Push-out units are only available with single-point hardware

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## CASEMENTS "N" SERIES

F.S.	1'-8"	3'-4"	5'-0"	6'-8"	8'-4"
R.O.	1'-8 1/2"	3'-4 1/2"	5'-0 1/2"	6'-8 1/2"	8'-4 1/2"
G.S.	14 5/8"	14 5/8"	14 5/8"	14 5/8"	14 5/8"
G.S.*	13 7/8"	13 7/8"	13 7/8"	13 7/8"	13 7/8"
2'-0"					
KUN12†	KUN22†	KUN32†	KUN42†	KUN52†	
2'-6"					
KUN126†	KUN226†	KUN326†	KUN426†	KUN526†	
3'-0"					
KUN13	KUN23	KUN33	KUN43	KUN53	
3'-6"					
KUN136	KUN236	KUN336	KUN436	KUN536	
4'-0"					
KUN14	KUN24	KUN34	KUN44	KUN54	
4'-6"					
KUN146	KUN246	KUN346	KUN446	KUN546	
5'-0"					
KUN15	KUN25	KUN35	KUN45	KUN55	
5'-6"					
KUN156	KUN256	KUN356	KUN456	KUN556	
6'-0"					
KUN16	KUN26	KUN36	KUN46	KUN56	

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Glass size for push-out casements.

† These Push-out units are only available with single-point hardware

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



# ULTRA SERIES CASEMENTS

## CASEMENTS | "W" SERIES

F.S.	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"	8'-0 1/2"	10'-0 1/2"	12'-0 1/2"
G.S.	18 5/8"	18 5/8"	18 5/8"	18 5/8"	18 5/8"	18 5/8"
G.S.*	17 7/8"	17 7/8"	17 7/8"	17 7/8"	17 7/8"	17 7/8"
2'-0"						
2'-6"						
3'-0"						
3'-6"						
4'-0"						
4'-6"						
5'-0"						
5'-6"						
6'-0"						

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.








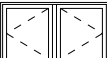
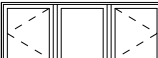
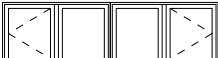



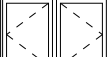





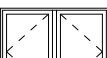


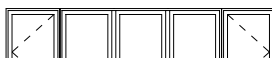


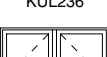


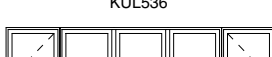


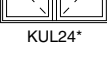





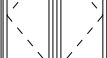



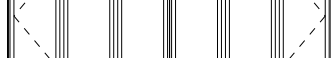


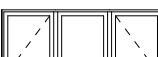

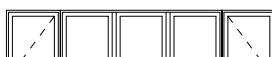


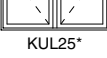




\* Units meet most national emergency escape and rescue requirements when modified with single-arm operators and Euro hinges.

\*\* Glass size for push-out casements

† Push-out units are only available with single-point hardware.

FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## CASEMENTS "L" SERIES

FS.	2'-4"	4'-8"	7'-0"	9'-4"	11'-8"	14'-0"
R.O.	2'-4 1/2"	4'-8 1/2"	7'-0 1/2"	9'-4 1/2"	11'-8 1/2"	14'-0 1/2"
G.S.	22 5/8"	22 5/8"	22 5/8"	22 5/8"	22 5/8"	22 5/8"
G.S.**	21 7/8"	21 7/8"	21 7/8"	21 7/8"	21 7/8"	21 7/8"
2'-0"						
2'-0 1/2"	KUL12†	KUL22†	KUL32†	KUL42†	KUL52†	KUL62†
2'-6"						
2'-6 1/2"	KUL126†	KUL226†	KUL326†	KUL426†	KUL526†	KUL626†
3'-0"						
3'-0 1/2"	KUL13	KUL23	KUL33	KUL43	KUL53	KUL63
3'-6"						
3'-6 1/2"	KUL136	KUL236	KUL336	KUL436	KUL536	KUL636
4'-0"						
4'-0 1/2"	KUL14*	KUL24*	KUL34*	KUL44*	KUL54*	KUL64*
4'-6"						
4'-6 1/2"	KUL146*	KUL246*	KUL346*	KUL446*	KUL546*	KUL646*
5'-0"						
5'-0 1/2"	KUL15*	KUL25*	KUL35*	KUL45*	KUL55*	KUL65*
5'-6"						
5'-6 1/2"	KUL156*	KUL256*	KUL356*	KUL456*	KUL556*	KUL656*
6'-0"						
6'-0 1/2"	KUL16*	KUL26*	KUL36*	KUL46*	KUL56*	KUL66*

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Units meet most national emergency escape and rescue requirements when modified with single-arm operators and Euro hinges.


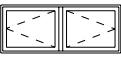
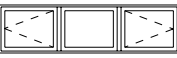
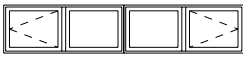
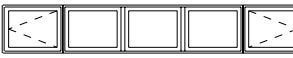

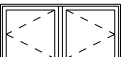






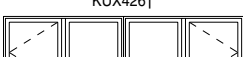





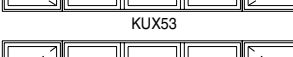






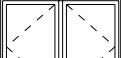




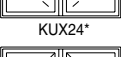


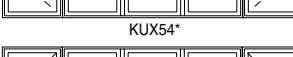



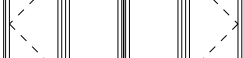






\*\* Glass size for push-out casements

† Push-out units are only available with single-point hardware.

FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS "X" SERIES

F.S.	2'-6"	5'-0"	7'-6"	10'-0"	12'-6"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"	10'-0 1/2"	12'-6 1/2"
G.S.	24 5/8"	24 5/8"	24 5/8"	24 5/8"	24 5/8"
G.S.**	23 7/8"	23 7/8"	23 7/8"	23 7/8"	23 7/8"
2'-0"	 KUX12†	 KUX22†	 KUX32†	 KUX42†	 KUX52†
2'-6"	 KUX126†	 KUX226†	 KUX326†	 KUX426†	 KUX526†
3'-0"	 KUX13	 KUX23	 KUX33	 KUX43	 KUX53
3'-6"	 KUX136	 KUX236	 KUX336	 KUX436	 KUX536
4'-0"	 KUX14*	 KUX24*	 KUX34*	 KUX44*	 KUX54*
4'-6"	 KUX146*	 KUX246*	 KUX346*	 KUX446*	 KUX546*
5'-0"	 KUX15*	 KUX25*	 KUX35*	 KUX45*	 KUX55*
5'-6"	 KUX156*	 KUX256*	 KUX356*	 KUX456*	 KUX556*
6'-0"	 KUX16*	 KUX26*	 KUX36*	 KUX46*	 KUX56*

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Units meet most national escape and rescue requirements.


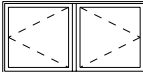
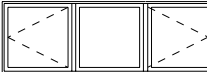




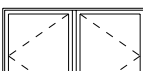



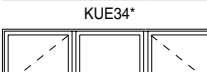


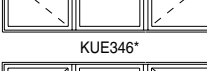




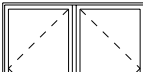

\*\* Glass size for push-out casements.

† Push-out units are only available with single-point hardware.

FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



## CASEMENTS "E" SERIES

F.S.	3'-0"	6'-0"	9'-0"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"
G.S.**	29 7/8"	29 7/8"	29 7/8"
3'-0"	 KUE13	 KUE23	 KUE33
3'-6"	 KUE136*	 KUE236*	 KUE336*
4'-0"	 KUE14*	 KUE24*	 KUE34*
4'-6"	 KUE146*	 KUE246*	 KUE346*
5'-0"	 KUE15*	 KUE25*	 KUE35*
5'-6"	 KUE156*	 KUE256*	 KUE356*
6'-0"	 KUE16*	 KUE26*	 KUE36*

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Units meet most national escape and rescue requirements.

\*\* Glass size for push-out casements.

ES. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS | RECTANGULAR TRANSOMS & STUDIO UNITS

F.S.	1'-4"	1'-8"	2'-0"	2'-6"	3'-0"	3'-4"	4'-0"	4'-6"	5'-0"	6'-0"
R.O.	1'-4 1/2"	1'-8 1/2"	2'-0 1/2"	2'-6 1/2"	3'-0 1/2"	3'-4 1/2"	4'-0 1/2"	4'-6 1/2"	5'-0 1/2"	6'-0 1/2"
G.S.	10 5/8"	14 5/8"	18 5/8"	24 5/8"	30 5/8"	34 5/8"	42 5/8"	48 5/8"	54 5/8"	66 5/8"
G.S.*	9 7/8"	13 7/8"	17 7/8"	23 7/8"	29 7/8"	33 7/8"	41 7/8"	47 7/8"	53 7/8"	65 7/8"
1'-4"										
1'-8"	KUS114S	KUN114S	KUW114S	KUX114S	KUE114S	KUN214P	KUW214P	KU4614P	KUN314P	KUW314P
1'-4 1/2"										
1'-8 1/2"	KUS118S	KUN118S	KUW118S	KUX118S	KUE118S	KUN218P	KUW218P	KU4618P	KUN318P	KUW318P
2'-0"										
2'-6"										
3'-0"										
3'-4"										
4'-0"										
4'-6"										
5'-0"										
5'-6"										
6'-0"										
	KUN22P	KUW22P	KU4620P	KUN32P	KUW32P	KUN226P	KUW226P	KU4626P	KUN326P	KUW326P
	KUN23P	KUW23P	KU4630P	KUN33P	KUW33P	KUN236P	KUW236P	KU4636P	KUN336P	KUW336P
	KUN24P	KUW24P	KU4640P	KUN34P	KUW34P	KUN246P	KUW246P	KU4646P	KUN346P	KUW346P
	KUN25P	KUW25P	KU4650P	KUN35P	KUW35P	KUN256P	KUW256P	KU4656P	KUN356P	KUW356P
	KUN26P	KUW26P	KU4660P	KUN36P	KUW36P	KUN266P	KUW266P	KU4666P	KUN366P	KUW366P

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Glass size for units to match operating push-out casements.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

## FRENCH CASEMENTS

F.S.	3'-4"	4'-0"	5'-0"
R.O.	3'-4 1/2"	4'-0 1/2"	5'-0 1/2"
G.S.	15 15/32"	19 15/32"	25 15/32"
G.S.*	14 23/32"	18 23/32"	24 23/32"
3'-0"			
3'-0 1/2"	UFN23	UFW23	UFX23
3'-6"			
3'-6 1/2"	UFN236	UFW236	UFX236**
4'-0"			
4'-0 1/2"	UFN24	UFW24	UFX24**
4'-6"			
4'-6 1/2"	UFN246	UFW246	UFX246**
5'-0"			
5'-0 1/2"	UFN25	UFW25	UFX25**
5'-6"			
5'-6 1/2"	UFN256		
6'-0"			
6'-0 1/2"	UFN26		

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Glass size for push-out casements.

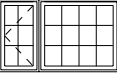
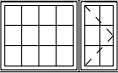
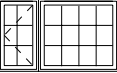
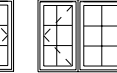
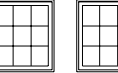
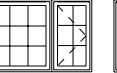



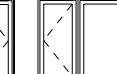

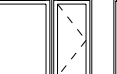



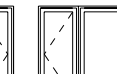


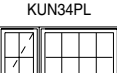

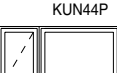




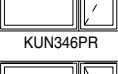





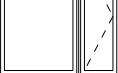

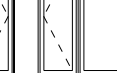
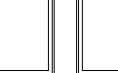


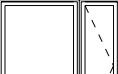
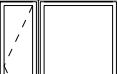
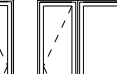


\*\* Units meet most national escape and rescue requirements.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



# ULTRA SERIES CASEMENTS

## CASEMENTS "N" SERIES PICTURE UNIT COMBINATIONS

F.S.	5'-0"	5'-0"	6'-8"	6'-8"	6'-8"	8'-4"
R.O.	5'-0 1/2"	5'-0 1/2"	6'-8 1/2"	6'-8 1/2"	6'-8 1/2"	8'-4 1/2"
G.S.	14 5/8"   34 5/8"	34 5/8"   14 5/8"	14 5/8"   34 5/8"   14 5/8"	14 5/8"   54 5/8"	54 5/8"   14 5/8"	14 5/8"   54 5/8"   14 5/8"
G.S.	13 7/8"   33 7/8"	33 7/8"   13 7/8"	13 7/8"   33 7/8"   13 7/8"	13 7/8"   53 7/8"	53 7/8"   13 7/8"	13 7/8"   53 7/8"   13 7/8"
3'-0"						
	KUN33PL	KUN33PR	KUN43P	KUN43PL	KUN43PR	KUN53P
3'-6"						
	KUN336PL	KUN336PR	KUN436P	KUN436PL	KUN436PR	KUN536P
4'-0"						
	KUN34PL	KUN34PR	KUN44P	KUN44PL	KUN44PR	KUN54P
4'-6"						
	KUN346PL	KUN346PR	KUN446P	KUN446PL	KUN446PR	KUN546P
5'-0"						
	KUN35PL	KUN35PR	KUN45P	KUN45PL	KUN45PR	KUN55P
5'-6"						
	KUN356PL	KUN356PR	KUN456P	KUN456PL	KUN456PR	KUN556P
6'-0"						
	KUN36PL	KUN36PR	KUN46P	KUN46PL	KUN46PR	KUN56P

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Venting is viewed from the exterior.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Glass size for push-out casements.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES CASEMENTS

## CASEMENTS | "W" SERIES PICTURE UNIT COMBINATIONS

F.S. R.O. G.S.*	6'-0"		6'-0"		8'-0"			8'-0"		8'-0"		10'-0"		
	6'-0 1/2"		6'-0 1/2"		8'-0 1/2"			8'-0 1/2"		8'-0 1/2"		10'-0 1/2"		
	18 5/8"   42 5/8"	42 5/8"   18 5/8"	42 5/8"   18 5/8"	18 5/8"   42 5/8"	18 5/8"   42 5/8"   18 5/8"	18 5/8"   42 5/8"   18 5/8"	18 5/8"   42 5/8"   18 5/8"	18 5/8"   66 5/8"	66 5/8"   18 5/8"	66 5/8"   18 5/8"	18 5/8"   66 5/8"	18 5/8"   66 5/8"   18 5/8"	66 5/8"   18 5/8"   18 5/8"	18 5/8"   66 5/8"   18 5/8"
	17 7/8"   41 7/8"	41 7/8"   17 7/8"	41 7/8"   17 7/8"	17 7/8"   41 7/8"	17 7/8"   41 7/8"   17 7/8"	17 7/8"   41 7/8"   17 7/8"	17 7/8"   41 7/8"   17 7/8"	17 7/8"   65 7/8"	65 7/8"   17 7/8"	65 7/8"   17 7/8"	17 7/8"   65 7/8"	17 7/8"   65 7/8"   17 7/8"	65 7/8"   17 7/8"   17 7/8"	17 7/8"   65 7/8"   17 7/8"
3'-0"														
	K UW33PL	K UW33PR	K UW43P	K UW43PL	K UW43PR	K UW53P								
3'-6"														
	K UW336PL	K UW336PR	K UW436P	K UW436PL	K UW436PR	K UW536P								
4'-0"														
	K UW34PL	K UW34PR	K UW44P	K UW44PL	K UW44PR	K UW54P								
4'-6"														
	K UW346PL	K UW346PR	K UW446P	K UW446PL	K UW446PR	K UW546P								
5'-0"														
	K UW35PL	K UW35PR	K UW45P	K UW45PL	K UW45PR	K UW55P								
5'-6"														
	K UW356PL	K UW356PR	K UW456P	K UW456PL	K UW456PR	K UW556P								
6'-0"														
	K UW36PL	K UW36PR	K UW46P	K UW46PL	K UW46PR	K UW56P								

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out casements.

For push-out casements, have dealer specify push-out when placing order for unit.

Venting is viewed from the exterior.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Glass size for push-out casements.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES CASEMENTS

## CASEMENTS "N" SERIES BOW WINDOWS

UNIT PROJECTION: 5 3/32"		8 47/64"		12 19/64"		17 37/64"		22 23/32"	
U.D.	5'-0 49/64"	6'-8 17/64"	8'-3 11/16"	9'-10 5/64"	11'-3 37/64"				
R.O.	5'-0 3/4"	6'-8 13/64"	8'-2 63/64"	9'-8 63/64"	11'-2 1/64"				
G.S.	14 5/8"	14 5/8"	14 5/8"	14 5/8"	14 5/8"				
3'-0"									
3'-0 1/2"	KUN33BOW	KUN43BOW	KUN53BOW	KUN63BOW	KUN73BOW				
3'-6"									
3'-6 1/2"	KUN336BOW	KUN436BOW	KUN536BOW	KUN636BOW	KUN736BOW				
4'-0"									
4'-0 1/2"	KUN34BOW	KUN44BOW	KUN54BOW	KUN64BOW	KUN74BOW				
4'-6"									
4'-6 1/2"	KUN346BOW	KUN446BOW	KUN546BOW	KUN646BOW	KUN746BOW				
5'-0"									
5'-0 1/2"	KUN35BOW	KUN45BOW	KUN55BOW	KUN65BOW	KUN75BOW				
5'-6"									
5'-6 1/2"	KUN356BOW	KUN456BOW	KUN556BOW	KUN656BOW	KUN756BOW				
6'-0"									
6'-0 1/2"	KUN36BOW	KUN46BOW	KUN56BOW	KUN66BOW	KUN76BOW				

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bow units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



# ULTRA SERIES CASEMENTS

## CASEMENTS "W" SERIES BOW WINDOWS

UNIT PROJECTION: 5 25/32"		10 7/64"		14 23/64"		20 21/32"		26 25/32"		
U.D.	6'-0 41/64"		8'-0 7/32"		9'-11 5/64"		11'-9 1/32"		13'-5 29/32"	
R.O.	6'-0 5/8"		7'-11 57/64"		9'-10 25/64"		11'-7 59/64"		13'-4 11/32"	
G.S.	18 5/8"		18 5/8"		18 5/8"		18 5/8"		18 5/8"	
3'-0"										
3'-6"										
4'-0"										
4'-6"										
5'-0"										
5'-6"										
6'-0"										

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bow units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS "S" SERIES 30° BAY WINDOWS

UNIT PROJECTIONS: 10 13/32"

U.D.	3'-11 43/64"	5'-3 43/64"	6'-7 43/64"
R.O.	3'-10 7/64"	5'-2 7/64"	6'-6 7/64"
G.S.	10 5/8"	10 5/8"	10 5/8"
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES | CASEMENTS

## CASEMENTS | "N" SERIES 30° BAY WINDOWS

UNIT PROJECTION: 12 13/32"

U.D.	4'-10 39/64"	6'-6 39/64"	6'-6 39/64"	8'-2 39/64"	8'-2 39/64"	
R.O.	4'-9 3/64"	6'-5 3/64"	6'-5 3/64"	8'-1 3/64"	8'-1 3/64"	
G.S.	14 5/8"	14 5/8"	14 5/8"   36 5/8"   14 5/8"	14 5/8"	14 5/8"   54 5/8"   14 5/8"	
3'-0"						
3'-6"						
4'-0"						
4'-6"						
5'-0"						
5'-6"						
6'-0"						

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS "W" SERIES 30° BAY WINDOWS

UNIT PROJECTION: 14 13/32"

	5'-9 17/32"	7'-9 17/32"	7'-9 17/32"	9'-9 17/32"	9'-9 17/32"
U.D.	5'-9 17/32"	7'-9 17/32"	7'-9 17/32"	9'-9 17/32"	9'-9 17/32"
R.O.	5'-7 31/32"	7'-7 31/32"	7'-7 31/32"	9'-7 31/32"	9'-7 31/32"
G.S.	18 5/8"	18 5/8"	18 5/8"   42 5/8"   18 5/8"	18 5/8"	18 5/8"   66 5/8"   18 5/8"
3'-0"					
3'-0 1/2"	30KUW13-13-13	30KUW13-23-13	30KUW13-23P-13	30KUW13-33-13	30KUW13-33P-13
3'-6"					
3'-6 1/2"	30KUW136-136-136	30KUW136-236-136	30KUW136-236P-136	30KUW136-336-136	30KUW136-336P-136
4'-0"					
4'-0 1/2"	30KUW14-14-14	30KUW14-24-14	30KUW14-24P-14	30KUW14-34-14	30KUW14-34P-14
4'-6"					
4'-6 1/2"	30KUW146-146-146	30KUW146-246-146	30KUW146-246P-146	30KUW146-346-146	30KUW146-346P-146
5'-0"					
5'-0 1/2"	30KUW15-15-15	30KUW15-25-15	30KUW15-25P-15	30KUW15-35-15	30KUW15-35P-15
5'-6"					
5'-6 1/2"	30KUW156-156-156	30KUW156-256-156	30KUW156-256P-156	30KUW156-356-156	30KUW156-356P-156
6'-0"					
6'-0 1/2"	30KUW16-16-16	30KUW16-26-16	30KUW16-26P-16	30KUW16-36-16	30KUW16-36P-16

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



## CASEMENTS

## CASEMENTS | “X” SERIES 30° BAY WINDOWS

UNIT PROJECTION: 17 13/32"

	U.D.	7'-1 59/64"	9'-7 59/64"	12'-1 59/64"
	R.O.	7'-0 23/64"	9'-6 23/64"	12'-0 23/64"
	G.S.	24 5/8"	24 5/8"	24 5/8"
3'-0"	3'-0 1/2"	30 KUX13-13-13	30 KUX13-23-13	30 KUX13-33-13
3'-6"	3'-6 1/2"	30 KUX136-136-136	30 KUX136-236-136	30 KUX136-336-136
4'-0"	4'-0 1/2"	30 KUX14-14-14	30 KUX14-24-14	30 KUX14-34-14
4'-6"	4'-6 1/2"	30 KUX146-146-146	30 KUX146-246-146	30 KUX146-346-146
5'-0"	5'-0 1/2"	30 KUX15-15-15	30 KUX15-25-15	30 KUX15-35-15
5'-6"	5'-6 1/2"	30 KUX156-156-156	30 KUX156-256-156	30 KUX156-356-156
6'-0"	6'-0 1/2"	30 KUX16-16-16	30 KUX16-26-16	30 KUX16-36-16

NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.





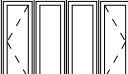






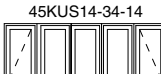

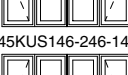
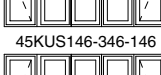

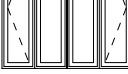


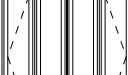
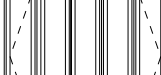
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## CASEMENTS

## CASEMENTS | “S” SERIES 45° BAY WINDOWS

UNIT PROJECTION: **14 7/16"**

	3'-8 15/64"	5'-0 15/64"	6'-4 15/64"
U.D.	3'-4 63/64"	4'-8 63/64"	6'-0 63/64"
G.S.	10 5/8"	10 5/8"	10 5/8"
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES | CASEMENTS

## CASEMENTS | "N" SERIES 45° BAY WINDOWS

UNIT PROJECTION: 17 17/64"

U.D.	4'-5 57/64"	6'-1 57/64"	6'-1 57/64"	7'-9 57/64"	7'-9 57/64"	
R.O.	4'-2 41/64"	5'-10 41/64"	5'-10 41/64"	7'-6 41/64"	7'- 41/64"	
G.S.	14 5/8"	14 5/8"	14 5/8"   34 5/8"   14 5/8"	14 5/8"	14 5/8"   54 5/8"   14 5/8"	
3'-0"						
3'-0 1/2"	45KUN13-13-13	45KUN13-23-13	45KUN13-23P-13	45KUN13-33-13	45KUN13-33P-13	
3'-6"						
3'-6 1/2"	45KUN136-136-136	45KUN136-236-136	45KUN136-236P-136	45KUN136-336-136	45KUN136-336P-136	
4'-0"						
4'-0 1/2"	45KUN14-14-14	45KUN14-24-14	45KUN14-24P-14	45KUN14-34-14	45KUN14-34P-14	
4'-6"						
4'-6 1/2"	45KUN146-146-146	45KUN146-246-146	45KUN146-246P-146	45KUN146-346-146	45KUN146-346P-146	
5'-0"						
5'-0 1/2"	45KUN15-15-15	45KUN15-25-15	45KUN15-25P-15	45KUN15-35-15	45KUN15-35P-15	
5'-6"						
5'-6 1/2"	45KUN156-156-156	45KUN156-256-156	45KUN156-256P-156	45KUN156-356-156	45KUN156-356P-156	
6'-0"						
6'-0 1/2"	45KUN16-16-16	45KUN16-26-16	45KUN16-26P-16	45KUN16-36-16	45KUN16-36P-16	

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

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Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS "W" SERIES 45° BAY WINDOWS

UNIT PROJECTION: 20 3/32"

U.D.	5'-3 35/64"	7'-3 35/64"	7'-3 35/64"	9'-3 35/64"	9'-3 35/64"
R.O.	5'-0 19/64"	7'-0 19/64"	7'-0 19/64"	9'-0 19/64"	9'-0 19/64"
G.S.	18 5/8"	18 5/8"	18 5/8"   42 5/8"   18 5/8"	18 5/8"	18 5/8"   66 5/8"   18 5/8"
3'-0"					
3'-6"					
4'-0"					
4'-6"					
5'-0"					
5'-6"					
6'-0"					

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

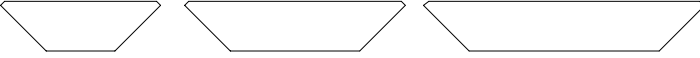
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U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



## CASEMENTS | "X" SERIES 45° BAY WINDOWS

UNIT PROJECTION: 24 11/32"



	6'-6 1/32"	9'-0 1/32"	11'-6 1/32"
U.D.	6'-6 1/32"	9'-0 1/32"	11'-6 1/32"
R.O.	6'-2 25/32"	8'-8 25/32"	11'-2 25/32"
G.S.	24 5/8"	24 5/8"	24 5/8"
3'-0"			
3'-0 1/2"	45KUX13-13-13	45KUX13-23-13	45KUX13-33-13
3'-6"			
3'-6 1/2"	45KUX136-136-136	45KUX136-236-136	45KUX136-336-136
4'-0"			
4'-0 1/2"	45KUX14-14-14	45KUX14-24-14	45KUX14-34-14
4'-6"			
4'-6 1/2"	45KUX146-146-146	45KUX146-246-146	45KUX146-346-146
5'-0"			
5'-0 1/2"	45KUX15-15-15	45KUX15-25-15	45KUX15-35-15
5'-6"			
5'-6 1/2"	45KUX156-156-156	45KUX156-256-156	45KUX156-356-156
6'-0"			
6'-0 1/2"	45KUX16-16-16	45KUX16-26-16	45KUX16-36-16

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used.

Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

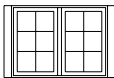
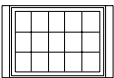
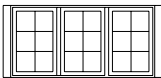
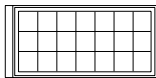
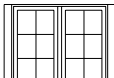

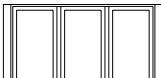


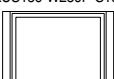

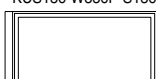

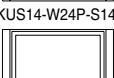

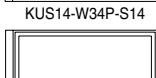
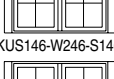
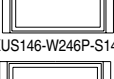
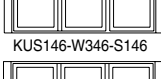
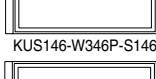




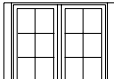



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U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## CASEMENTS 90° BAY WINDOWS

UNIT PROJECTION: 22 51/64"

U.D.	4'-8 7/64"	4'-8 7/64"	6'-8 7/64"	6'-8 7/64"
R.O.	4'-0 1/2"	4'-0 1/2"	6'-0 1/2"	6'-0 1/2"
G.S.	18 5/8"	42 5/8"	18 5/8"	66 5/8"
3'-0"				
	KUS13-W23-S13	KUS13-W23P-S13	KUS13-W33-S13	KUS13-W33P-S13
3'-6"				
	KUS136-W236-S136	KUS136-W236P-S136	KUS136-W336-S136	KUS136-W336P-S136
4'-0"				
	KUS14-W24-S14	KUS14-W24P-S14	KUS14-W34-S14	KUS14-W34P-S14
4'-6"				
	KUS146-W246-S146	KUS146-W246P-S146	KUS146-W346-S146	KUS146-W346P-S146
5'-0"				
	KUS15-W25-S15	KUS15-W25P-S15	KUS15-W35-S15	KUS15-W35P-S15
5'-6"				
	KUS156-W256-S156	KUS156-W256P-S156	KUS156-W356-S156	KUS156-W356P-S156
6'-0"				
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16	KUS16-W36P-S16

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Only flanker sash vent on 90° bay windows.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations. Sizes and divided lite configurations for flanker sash can be found on the Casements - "S" Series chart on pg. 24.

























If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

























U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES CASEMENTS

## SEGMENT HEAD CASEMENTS "S" SERIES

F.S.	1'-4"	2'-8"	4'-0"
R.O.	1'-4 1/2"	2'-8 1/2"	4'-0 1/2"
G.S.*	10 5/8"	10 5/8"	10 5/8"
G.S.**	9 7/8"	9 7/8"	9 7/8"
2'-6"			
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

## SEGMENT HEAD CASEMENTS "N" SERIES

F.S.	1'-8"	3'-4"	5'-0"
R.O.	1'-8 1/2"	3'-4 1/2"	5'-0 1/2"
G.S.*	14 5/8"	14 5/8"	14 5/8"
G.S.**	13 7/8"	13 7/8"	13 7/8"
2'-6"			
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above units are also available in EP Crank-Out option.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

\*\* Glass size for push-out casements.

† Push-out units only available with single-point hardware.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES CASEMENTS

## SEGMENT HEAD CASEMENTS "W" SERIES

F.S.	2'-0"	4'-0"	6'-0"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.*	18 5/8"	18 5/8"	18 5/8"
G.S.**	17 7/8"	17 7/8"	17 7/8"
2'-6"			
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

## SEGMENT HEAD CASEMENTS "L" SERIES

F.S.	2'-4"	4'-8"	7'-0"
R.O.	2'-4 1/2"	4'-8 1/2"	7'-0 1/2"
G.S.*	22 5/8"	22 5/8"	22 5/8"
G.S.**	21 7/8"	21 7/8"	21 7/8"
2'-6"			
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above units are also available in EP Crank-Out option.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

\*\* Glass size for push-out casements.












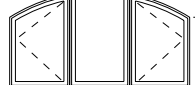











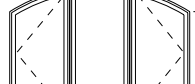
† Push-out units only available with single-point hardware.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size









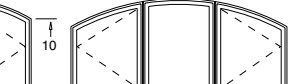














# ULTRA SERIES CASEMENTS

## SEGMENT HEAD CASEMENTS "X" SERIES

F.S.	2'-6"	5'-0"	7'-6"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.*	24 5/8"	24 5/8"	24 5/8"
G.S.**	23 7/8"	23 7/8"	23 7/8"
2'-6"			
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

## SEGMENT HEAD CASEMENTS "E" SERIES

F.S.	3'-0"	6'-0"	9'-0"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.*	30 5/8"	30 5/8"	30 5/8"
G.S.**	29 7/8"	29 7/8"	29 7/8"
3'-0"			
3'-6"			
4'-0"			
4'-6"			
5'-0"			
5'-6"			
6'-0"			

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above units are also available in EP Crank-Out option.

For push-out casements, have dealer specify push-out when placing order for unit.

Specify stationary, left or right venting when ordering single units. Venting is viewed from the exterior.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullited units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

\*\* Glass size for push-out casements

\*\*\* Units meet most national escape and rescue requirements.
























































† Push-out units only available with single-point hardware.

§ Only available as stationary units.

ES. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES CASEMENTS

## SEGMENT HEAD CASEMENTS | STUDIO UNITS

F.S.	3'-4"	4'-0"	4'-6"	5'-0"	6'-0"
R.O.	3'-4 1/2"	4'-0 1/2"	4'-6 1/2"	5'-0 1/2"	6'-0 1/2"
G.S.*	34 5/8"	42 5/8"	50 5/8"	54 5/8"	66 5/8"
G.S.**	33 7/8"	41 7/8"	49 7/8"	53 7/8"	65 7/8"
1'-4"	 KUN214P-SEG	 KUW214P-SEG	 KU4614P-SEG	 KUN314P-SEG	 KUW314P-SEG
1'-8"	 KUN218P-SEG	 KUW218P-SEG	 KU4618P-SEG	 KUN318P-SEG	 KUW318P-SEG
2'-0"	 KUN22P-SEG	 KUW22P-SEG	 KU4620P-SEG	 KUN32P-SEG	 KUW32P-SEG
2'-6"	 KUN226P-SEG	 KUW226P-SEG	 KU4626P-SEG	 KUN326P-SEG	 KUW326P-SEG
3'-0"	 KUN23P-SEG	 KUW23P-SEG	 KU4630P-SEG	 KUN33P-SEG	 KUW33P-SEG
3'-6"	 KUN236P-SEG	 KUW236P-SEG	 KU4636P-SEG	 KUN336P-SEG	 KUW336P-SEG
4'-0"	 KUN24P-SEG	 KUW24P-SEG	 KU4640P-SEG	 KUN34P-SEG	 KUW34P-SEG
4'-6"	 KUN246P-SEG	 KUW246P-SEG	 KU4646P-SEG	 KUN346P-SEG	 KUW346P-SEG
5'-0"	 KUN25P-SEG	 KUW25P-SEG	 KU4650P-SEG	 KUN35P-SEG	 KUW35P-SEG
5'-6"	 KUN256P-SEG	 KUW256P-SEG	 KU4656P-SEG	 KUN356P-SEG	 KUW356P-SEG
6'-0"	 KUN26P-SEG	 KUW26P-SEG	 KU4660P-SEG	 KUN36P-SEG	 KUW36P-SEG

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above units are also available in EP Crank-Out option.

Divided lites are optional. Follow down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes are given; true glass sizes vary depending on the radius involved.

\*\* Glass size for units to match operating push-out casements.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

## HALF-CIRCLE TOP CASEMENTS

F.S.	1'-8"	2'-0"	2'-4"	2'-6"	3'-0"
R.O.	1'-8 1/2"	2'-0 1/2"	2'-4 1/2"	2'-6 1/2"	3'-0 1/2"
G.S.*	14 5/8"	18 5/8"	22 5/8"	24 5/8"	30 5/8"
G.S.**	13 7/8"	17 7/8"	21 7/8"	23 7/8"	29 7/8"
2'-6"					
	KUN126-HC†	KUW126-HC†	KUL126-HC†	KUX126-HC†	KUE126-HC†
3'-0"					
	KUN13-HC	KUW13-HC	KUL13-HC	KUX13-HC	KUE13-HC
3'-6"					
	KUN136-HC	KUW136-HC	KUL136-HC	KUX136-HC	KUE136-HC
4'-0"					
	KUN14-HC	KUW14-HC	KUL14-HC	KUX14-HC**	KUE14-HC
4'-6"					
	KUN146-HC	KUW146-HC	KUL146-HC	KUX146-HC***	KUE146-HC
5'-0"					
	KUN15-HC	KUW15-HC	KUL15-HC	KUX15-HC***	KUE15-HC***
5'-6"					
	KUN156-HC	KUW156-HC	KUL156-HC	KUX156-HC***	KUE156-HC***
6'-0"					
	KUN16-HC	KUW16-HC	KUL16-HC	KUX16-HC***	KUE16-HC***

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above units are also available in EP Crank-Out option.

Units are stationary as standard, however, some may be ordered as venting units. Contact your local dealer for details.

Divided lites are optional. Follow down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes are given; true glass sizes vary depending on the radius involved.

\*\* Glass size for push-out casements.

\*\*\* Units meet most national escape and rescue requirements when ordered as venting units.

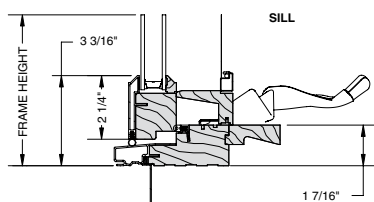
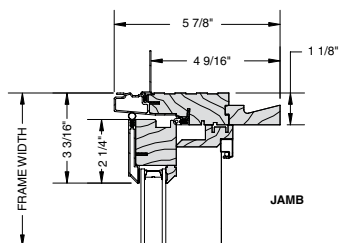
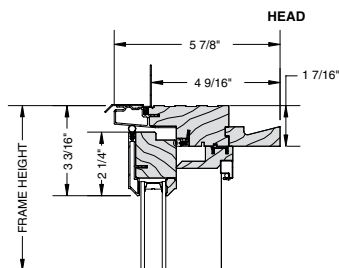
† Push-out units only available with single-point hardware.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

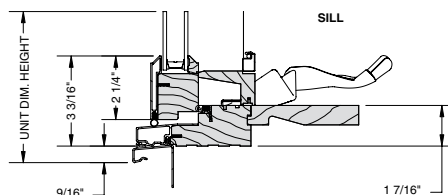
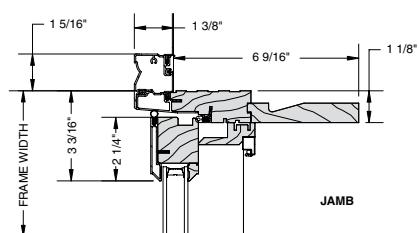
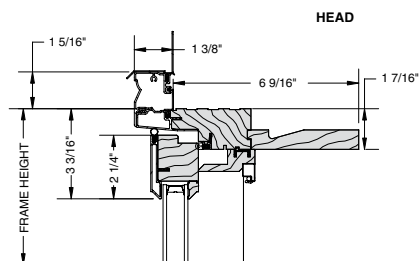
# ULTRA SERIES | CASEMENTS

## CRANK-OUT CASEMENT CROSS SECTION DRAWINGS

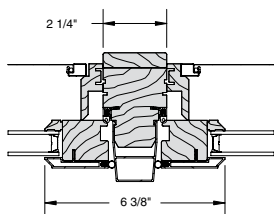
Standard Crank-out Casement



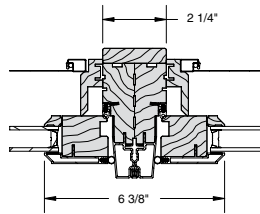
Crank-out Casement with 1-15/16" Brickmould & 6 9/16" Jamb



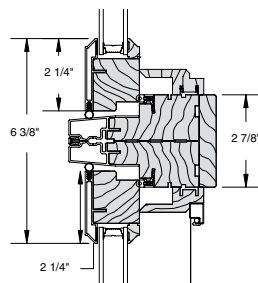
CRANK-OUT CASEMENT  
STANDARD MULLION



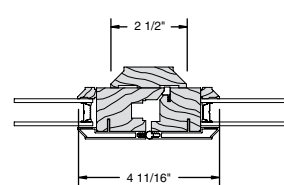
CRANK-OUT CASEMENT  
NARROW MULLION



RECTANGULAR TRANSOM  
STACKED OVER CASEMENT



FRENCH CASEMENT  
MEETING STILES



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

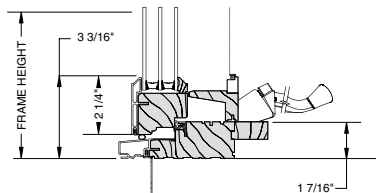
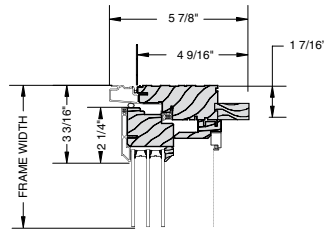
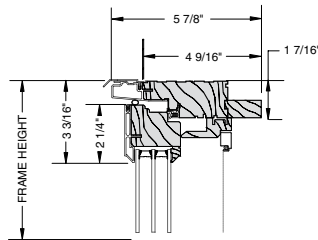
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

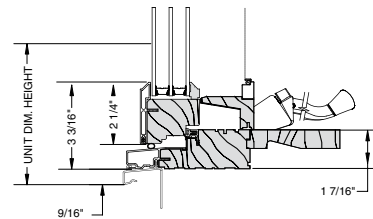
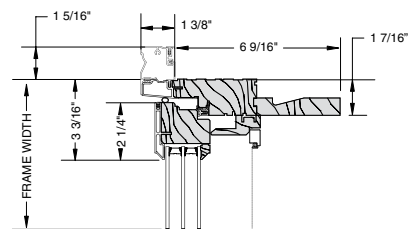
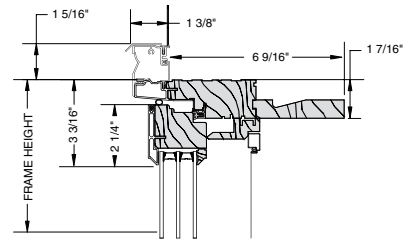
# ULTRA SERIES | CASEMENTS

## CRANK-OUT EP CASEMENT CROSS SECTION DRAWINGS

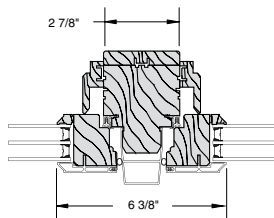
Standard Crank-out EP Casement



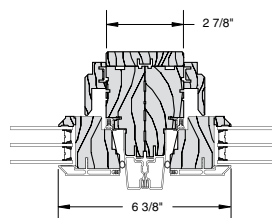
Crank-out EP Casement with 1-15/16" Brickmould & 6 9/16" Jamb



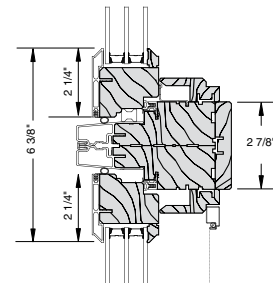
CRANK-OUT EP CASEMENT  
STANDARD MULLION



CRANK-OUT EP CASEMENT  
NARROW MULLION



RECTANGULAR TRANSOM  
STACKED OVER EP CASEMENT



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

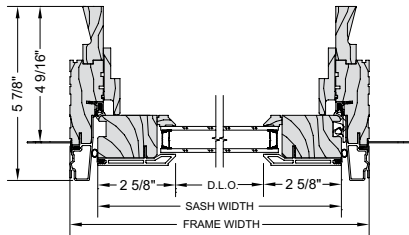
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).



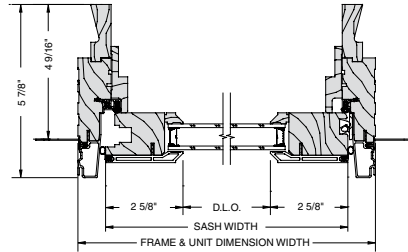
# ULTRA SERIES | CASEMENTS

## PUSH-OUT CASEMENT CROSS SECTION DRAWINGS

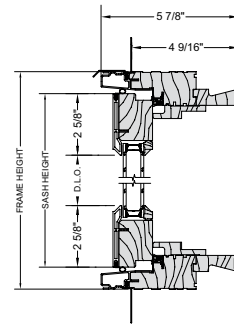
Horizontal Section - Single-point lock



Horizontal Section - Multi-point lock

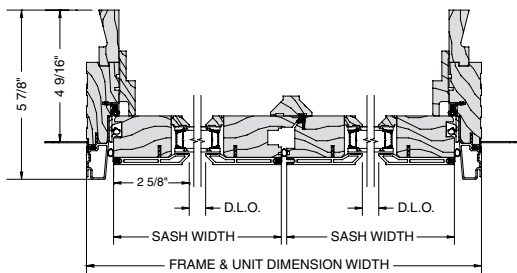


Vertical Section

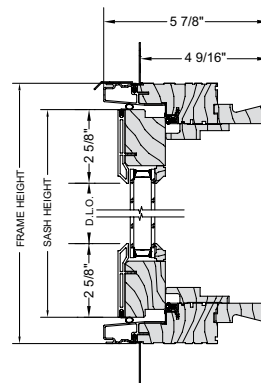


## FRENCH PUSH-OUT CASEMENT CROSS SECTION DRAWINGS

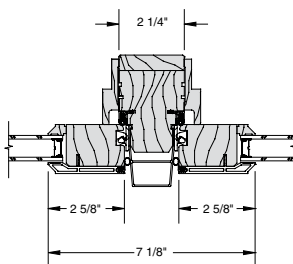
Horizontal Section



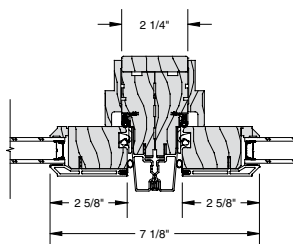
Vertical Section



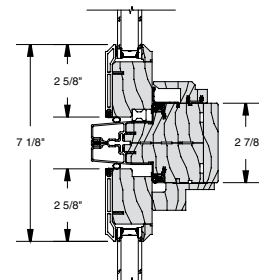
PUSH-OUT CASEMENT  
STANDARD MULLION



PUSH-OUT CASEMENT  
NARROW MULLION



RECTANGULAR TRANSOM STACKED  
OVER PUSH-OUT CASEMENT



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

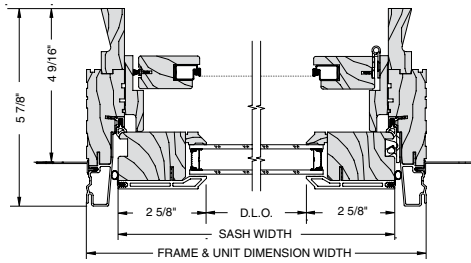
For Ultra accessory or application drawings, see pgs. 176-182.

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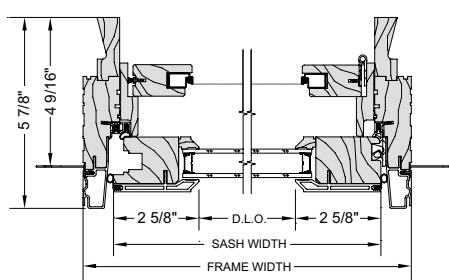
# ULTRA SERIES CASEMENTS

## PUSH-OUT CASEMENT SWINGING SCREEN DRAWINGS

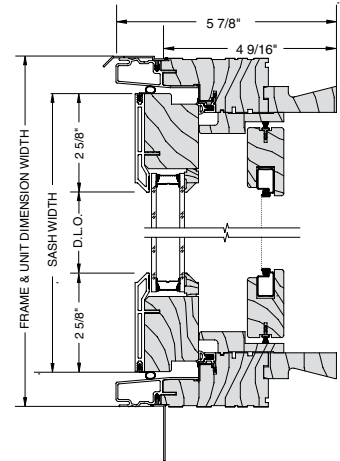
Horizontal Section, Single-point Lock



Horizontal Section, Multi-point Lock

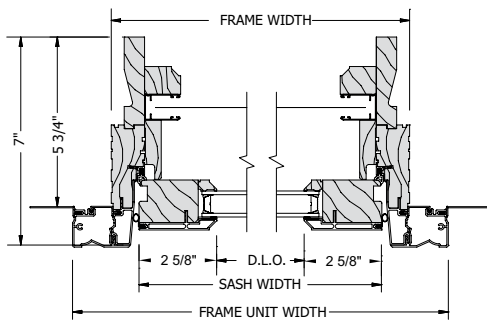


Vertical Section

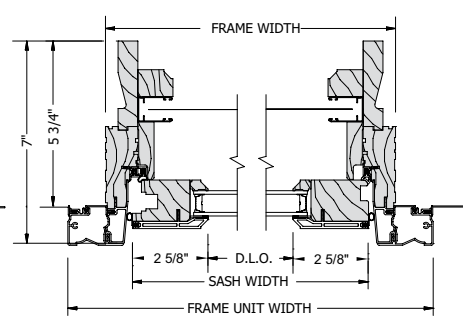


## PUSH-OUT CASEMENT RETRACTABLE SCREEN DRAWINGS

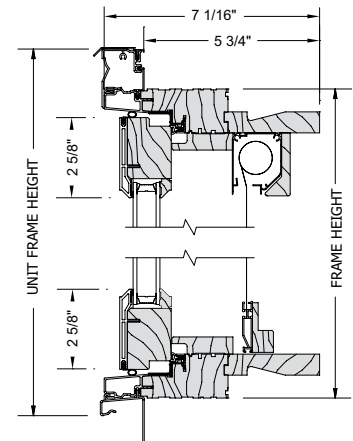
Horizontal Section, Single-point Lock



Horizontal Section, Multi-point Lock



Vertical Section



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

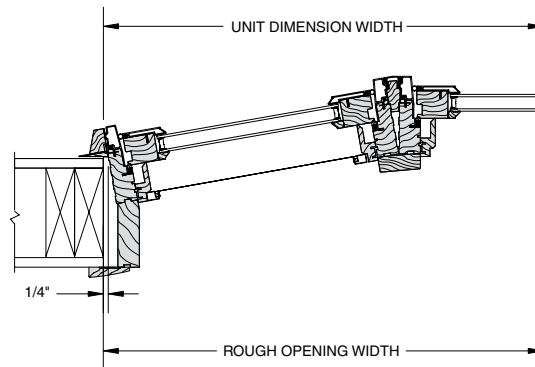
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

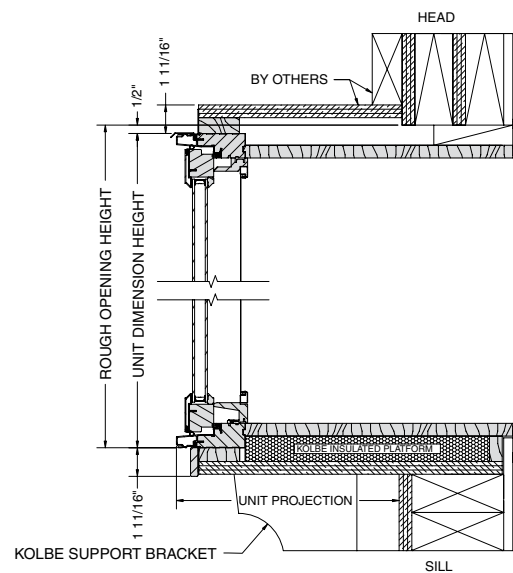
# ULTRA SERIES | CASEMENTS

## CASEMENT BOW & BAY CROSS SECTION DRAWINGS

Bow Horizontal Section



Bow & Bay Vertical Section



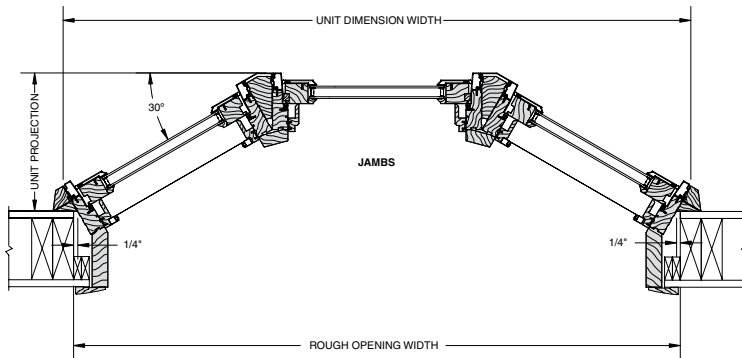
### NOTES:

Drawings are not to scale.

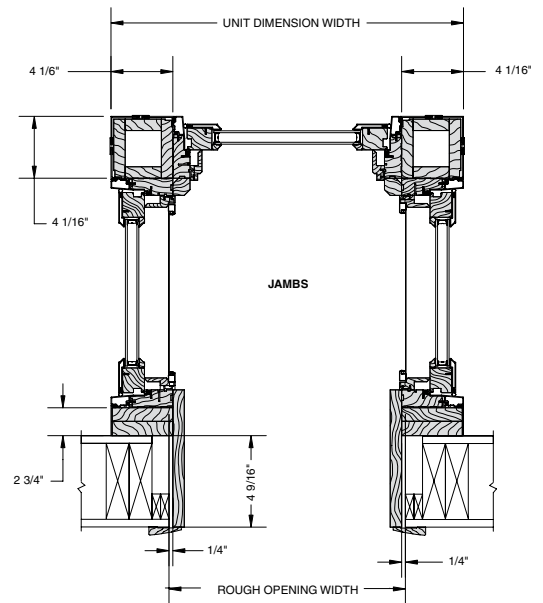
Bows and bays are only available as Crank-out casements, not EP Crank-out casements or Push-out casements.

## CASEMENT BOW & BAY CROSS SECTION DRAWINGS

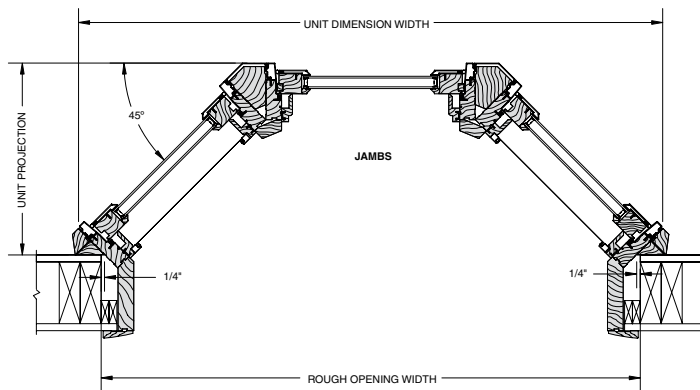
### 30° Bay Horizontal Section



### 90° Bay Horizontal Section



### 45° Bay Horizontal Section



#### NOTES:

Drawings are not to scale.

Bows and bays are only available as Crank-out casements, not EP Crank-out casements or Push-out casements.







# ULTRA SERIES | AWNINGS

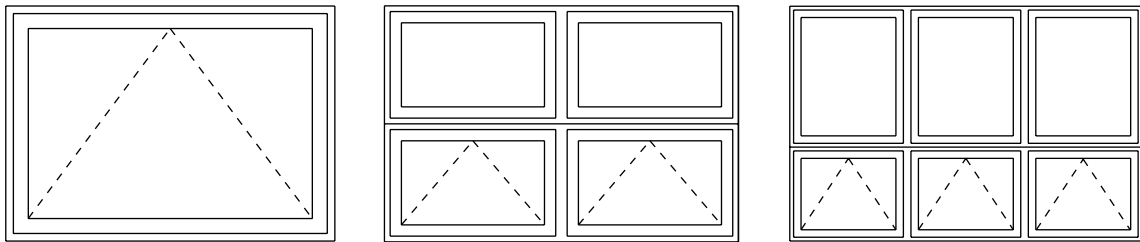
CRANK-OUT AWNINGS

PUSH-OUT AWNINGS

PICTURE UNITS

PICTURE COMBINATION UNITS

MULLED CONFIGURATIONS



Ultra Series awning windows open from the bottom out, making them fully functional even when there is a gentle rain outside. Awnings offer unique style to any room and are the perfect complement to other Kolbe windows and doors. Folding handles and dual-arm operators make these windows easy to operate.

# ULTRA SERIES | CRANK-OUT AWNINGS

## CRANK-OUT AWNING STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 2-3/4")
- Constructed of pine, with pine interior stops and wood mull casings on mullied units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units, as well as the sash
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Interior screens with Clay-colored aluminum frames and BetterVue<sup>®</sup> fiberglass mesh
- Clay-colored, folding handles and operator covers
- Roto-style operators with concealed, adjustable hinges
- Heavy vinyl nailing fins with head drip caps\*\*

## MULTI-POINT LOCK



Ultra Series awnings feature a multi-point locking system as standard. Up to three locking points are operated to quickly and securely lock units from one convenient location. A sleek slim-line handle and escutcheon makes windows more attractive. Handles and escutcheons are Clay as standard. Other finishes available are White, Beige, Brass and custom finishes listed on pg. 59.

NOTE: Not available on units with a box size smaller than 1' 4."

Vinyl nailing fin applied as standard



## CRANK-OUT EP AWNING

Crank-out EP awning windows feature triple pane glass to provide higher energy performance as well as meet the ENERGY STAR<sup>®</sup> criteria for Canadian climate zones.

### STANDARD FEATURES

(includes standard features above, with the exception of the following substitutions):

- 2-1/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 3-1/4" plus extensions)
- 1-3/8" total thickness of triple pane glass with LoE<sup>2</sup>-270 and LoE-180
- Multi-point keeper
- New engineered hinge designed to accommodate the additional sash weight



Triple pane glass is featured on the Crank-Out EP Awning as standard

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

## HARDWARE

Clay-colored, multi-point lock handles are applied to casement units as standard. Other finishes available are White, Beige, Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black.



Folding handle in Clay  
(closed)



Folding handle in Clay  
(open)



## CRANK-OUT AWNING OPTIONAL FEATURES

**GLASS** (pgs. 6-7): (Crank-Out EP Awning only available with triple pane glass)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Mountain Air Energy Package
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

**DIVIDED LITES** (pgs. 8-9) :

- Grilles-in-the-airspace (Not available on Crank-Out EP Awning)
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

**OTHER OPTIONS:** (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)

- Interior casing (pg. 13)
- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Operator covers, handles and multi-point locks in White, Beige, Bright Brass, Antique Brass, Rustic Umber, Satin Nickel, Antique Nickel or Matte Black
- Universal design awning handle and lock in White, Clay or Rustic Umber
- Screens with White, Beige, Dark Bronze Anodized or Clear Anodized frames
- Custom brass frames and screens (not available for radius top units)
- Screens with aluminum or charcoal-colored aluminum mesh (excluding Brass frames)
- Wood wrapped screens
- UltraVue® screen mesh
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Motorized window system
- Galvanized steel installation clips
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

# ULTRA SERIES | AWNINGS

## AWNING UNITS & MULL CONFIGURATIONS

2' 6" widths

F.S.	2'-6"	5'-0"	7'-6"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	24 5/8"	24 5/8"	24 5/8"
G.S.*	23 7/8"	23 7/8"	23 7/8"

4'-0"	1'-8"	KU26181	KU26182	KU26183
	3'-4"	KU26181	KU26182	KU26183
	1'-8 1/2"	KU26181	KU26182	KU26183
	14 5/8"	KU26181	KU26182	KU26183
5'-0"	3'-4 1/2"	KU26181	KU26182	KU26183
	13 7/8"	KU26181	KU26182	KU26183
	14 5/8"	KU26181	KU26182	KU26183
	13 7/8"	KU26181	KU26182	KU26183
6'-0"	5'-0 1/2"	KU26181	KU26182	KU26183
	13 7/8"	KU26181	KU26182	KU26183
	14 5/8"	KU26181	KU26182	KU26183
	13 7/8"	KU26181	KU26182	KU26183
6'-0"	4'-0"	KU26201	KU26202	KU26203
	2'-0"	KU26201	KU26202	KU26203
	2'-0 1/2"	KU26201	KU26202	KU26203
	18 5/8"	KU26201	KU26202	KU26203
6'-0"	4'-0 1/2"	KU26201	KU26202	KU26203
	17 7/8"	KU26201	KU26202	KU26203
	18 5/8"	KU26201	KU26202	KU26203
	17 7/8"	KU26201	KU26202	KU26203
6'-0"	6'-0 1/2"	KU26201	KU26202	KU26203
	17 7/8"	KU26201	KU26202	KU26203
	18 5/8"	KU26201	KU26202	KU26203
	17 7/8"	KU26201	KU26202	KU26203
6'-0"	2'-6"	KU26261	KU26262	KU26263
	2'-6 1/2"	KU26261	KU26262	KU26263
	24 5/8"	KU26261	KU26262	KU26263
	23 7/8"	KU26261	KU26262	KU26263
6'-0"	5'-0"	KU26261	KU26262	KU26263
	24 5/8"	KU26261	KU26262	KU26263
	23 7/8"	KU26261	KU26262	KU26263
	23 7/8"	KU26261	KU26262	KU26263
6'-0"	3'-0"	KU26301	KU26302	KU26303
	3'-0 1/2"	KU26301	KU26302	KU26303
	30 5/8"	KU26301	KU26302	KU26303
	29 7/8"	KU26301	KU26302	KU26303
6'-0"	6'-0 1/2"	KU26301	KU26302	KU26303
	29 7/8"	KU26301	KU26302	KU26303
	30 5/8"	KU26301	KU26302	KU26303
	29 7/8"	KU26301	KU26302	KU26303

## AWNING PICTURE UNITS

2' 6" widths

F.S.	2'-6"	5'-0"	7'-6"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	24 5/8"	24 5/8"	24 5/8"
G.S.*	23 7/8"	23 7/8"	23 7/8"

4'-0"	4'-0 1/2"	KU26401	KU26402	KU26403
	42 5/8"	KU26401	KU26402	KU26403
	41 7/8"	KU26401	KU26402	KU26403
	41 7/8"	KU26401	KU26402	KU26403
5'-0"	5'-0 1/2"	KU26501	KU26502	KU26503
	54 5/8"	KU26501	KU26502	KU26503
	53 7/8"	KU26501	KU26502	KU26503
	53 7/8"	KU26501	KU26502	KU26503
6'-0"	6'-0 1/2"	KU26601	KU26602	KU26603
	66 5/8"	KU26601	KU26602	KU26603
	65 7/8"	KU26601	KU26602	KU26603
	65 7/8"	KU26601	KU26602	KU26603

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to Sash O.S.M.	-1 7/8"	-1 7/8"
Sash O.S.M. to G.S.	-3 1/2"	-3 1/2"
G.S. to D.L.O.	-1"	-1"
G.S. to Screen O.S.M.	+2 1/16"	+13/16"
F.S. to G.S. (for push-outs)	-6 1/8"	-6 1/8"

NOTE: Clear opening dimensions can be found on pg. 188.

Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 15/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+3 3/8"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+4 11/16"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

#### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out awnings.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mullied units.

For push-out awnings, have dealer specify push-out when placing order for unit.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

\* Glass size for push-out awnings

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## AWNING UNIT COMBINATIONS

2' 6" widths

F.S.	2'-6"	5'-0"	7'-6"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	24 5/8"	24 5/8"	24 5/8"
G.S.*	23 7/8"	23 7/8"	23 7/8"
4'-8"			
5'-0"			
5'-8 1/2"			
6'-0"			
6'-8 1/2"			

## AWNING UNITS & MULL CONFIGURATIONS

3' 0" widths

F.S.	3'-0"	6'-0"	9'-0"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"
G.S.*	29 7/8"	29 7/8"	29 7/8"
1'-8"			
3'-4"			
5'-0"			
2'-0"			
4'-0"			
6'-0"			
2'-6"			
5'-0"			
3'-0"			
6'-0"			

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out awnings.

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For rough opening recommendations, see pg. 188.

\* Glass size for push-out awnings.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)



# ULTRA SERIES | AWNINGS

## AWNING PICTURE UNITS

3' 0" widths

	F.S.		
	3'-0"		
	6'-0"		
	9'-0"		
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"
G.S.*	29 7/8"	29 7/8"	29 7/8"
4'-0"	Basic Unit KU30401	KU30402	KU30403
5'-0"	Basic Unit KU30501	KU30502	KU30503
6'-0"	Basic Unit KU30601	KU30602	KU30603

## AWNING UNIT COMBINATIONS

3' 0" widths

	F.S.		
	3'-0"		
	6'-0"		
	9'-0"		
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"
G.S.*	29 7/8"	29 7/8"	29 7/8"
4'-8"	Basic Unit KU30301 over KU3018	KU3030182	KU3030183
5'-0"	Basic Unit KU30301 over KU3020	KU3030201	KU3030202
5'-8"	Basic Unit KU30401 over KU3018	KU3040182	KU3040183
6'-0"	Basic Unit KU30401 over KU3020	KU3040201	KU3040202
6'-8"	Basic Unit KU30501 over KU3018	KU3050182	KU3050183

## AWNING UNITS & MULL CONFIGURATIONS

3' 6" widths

	F.S.		
	3'-6"		
	7'-0"		
	10'-6"		
R.O.	3'-6 1/2"	7'-0 1/2"	10'-6 1/2"
G.S.	36 5/8"	36 5/8"	36 5/8"
G.S.*	35 7/8"	35 7/8"	35 7/8"
1'-8"	KU36181	KU36182	KU36183
3'-4"	Basic Unit KU36181	KU36182	KU36183
5'-0"	KU361813	KU361823	KU361833
2'-0"	KU36201	KU36202	KU36203
4'-0"	Basic Unit KU36201	KU36202	KU36203
6'-0"	KU362013	KU362023	KU362033
2'-6"	KU36261	KU36262	KU36263
5'-0"	Basic Unit KU36261	KU36262	KU36263
3'-0"	KU36301	KU36302	KU36303
6'-0"	Basic Unit KU36301	KU36302	KU36303

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out awnings.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mull configurations.

For push-out awnings, have dealer specify push-out when placing order for unit.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Glass size for push-out awnings.

ES. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## AWNING PICTURE UNITS

3' 6" widths

F.S.	3'-6"		7'-0"		10'-6"	
R.O.	3'-6 1/2"		7'-0 1/2"		10'-6 1/2"	
G.S.	36 5/8"		36 5/8"		36 5/8"	
G.S.	35 7/8"		35 7/8"		35 7/8"	
4'-0"	4'-0 1/2"	42 5/8"	41 7/8"			
		Basic Unit KU3640				
		KU36401	KU36402		KU36403	
5'-0"	5'-0 1/2"	54 5/8"	53 7/8"			
		Basic Unit KU3650				
		KU36501	KU36502		KU36503	
6'-0"	6'-0 1/2"	66 5/8"	65 7/8"			
		Basic Unit KU3660				
		KU36601	KU36602		KU36603	

## AWNING UNIT COMBINATIONS

3' 6" widths

F.S.	3'-6"			7'-0"			10'-6"		
R.O.	3'-6 1/2"			7'-0 1/2"			10'-6 1/2"		
G.S.	36 5/8"			36 5/8"			36 5/8"		
G.S.*	35 7/8"			35 7/8"			35 7/8"		
4'-8"									
4'-8 1/2"	KU3630181			KU3630182			KU3630183		
5'-0"									
5'-0 1/2"	KU3630201			KU3630202			KU3630203		
5'-8"									
5'-8 1/2"	KU3640181			KU3640182			KU3640183		
6'-0"									
6'-0 1/2"	KU3640201			KU3640202			KU3640203		
6'-8"									
6'-8 1/2"	KU3650181			KU3650182			KU3650183		

## AWNING UNITS & MULL CONFIGURATIONS

4' 0" widths

F.S.	4'-0"			8'-0"			12'-0"		
R.O.	4'-0 1/2"			8'-0 1/2"			12'-0 1/2"		
G.S.	42 5/8"			42 5/8"			42 5/8"		
G.S.*	41 7/8"			41 7/8"			41 7/8"		
1'-8"									
3'-4"									
5'-0"									
2'-0"									
4'-0"									
6'-0"									
2'-6"									
5'-0"									
3'-0"									
6'-0"									

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out awnings.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mull units.

For push-out awnings, have dealer specify push-out when placing order for unit.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Glass size for push-out awnings.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

# ULTRA SERIES | AWNINGS

## AWNING PICTURE UNITS

4' 0" widths

	F.S.		
	4'-0"		
	8'-0"		
	12'-0"		
R.O.	4'-0 1/2"		
	8'-0 1/2"		
	12'-0 1/2"		
G.S.	42 5/8"		
	41 7/8"		
4'-0"	Basic Unit KU4040		
	KU40401	KU40402	KU40403
5'-0"	Basic Unit KU4050		
	KU40501	KU40502	KU40503
6'-0"	Basic Unit KU4060		
	KU40601	KU40602	KU40603

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Above sizes are available as Crank-out, EP Crank-out and Push-out awnings.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mulled units.

For push-out awnings, have dealer specify push-out when placing order for unit.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Glass size for push-out awnings.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

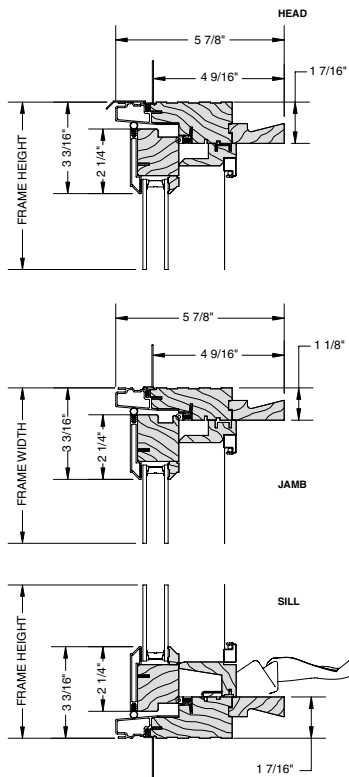
## AWNING UNIT COMBINATIONS

4' 0" widths

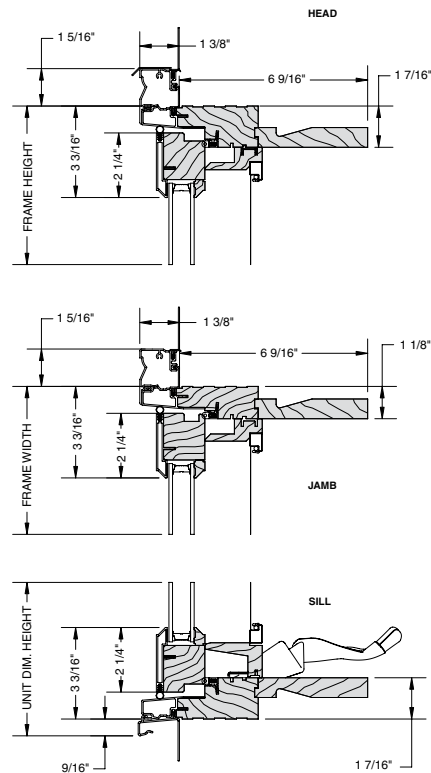
	F.S.		
	4'-0"		
	8'-0"		
	12'-0"		
R.O.	4'-0 1/2"		
	8'-0 1/2"		
	12'-0 1/2"		
G.S.	42 5/8"		
	41 7/8"		
4'-8"	Basic Unit KU4030 over KU4018		
	KU4030181	KU4030182	KU4030183
5'-0"	Basic Unit KU4030 over KU4020		
	KU4030201	KU4030202	KU4030203
5'-8"	Basic Unit KU4040 over KU4018		
	KU4040181	KU4040182	KU4040183
6'-0"	Basic Unit KU4040 over KU4020		
	KU4040201	KU4040202	KU4040203
6'-8"	Basic Unit KU4050 over KU4018		
	KU4050181	KU4050182	KU4050183

## CRANK-OUT AWNING CROSS SECTION DRAWINGS

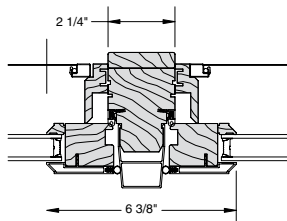
Standard Crank-out Awning



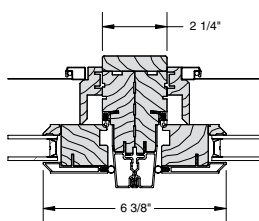
Crank-out Awning with 1-15/16" Brickmould & 6 9/16" Jamb



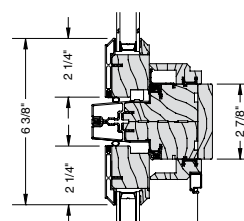
CRANK-OUT AWNING  
STANDARD MULLION



CRANK-OUT AWNING  
NARROW MULLION



PICTURE UNIT  
STACKED OVER AWNING



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

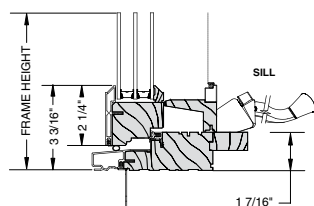
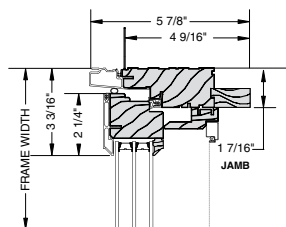
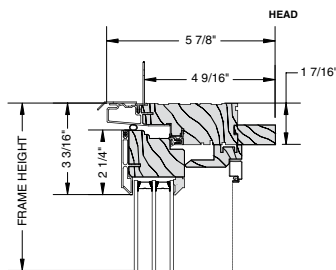
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

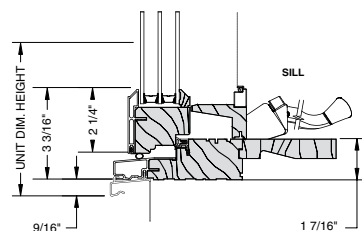
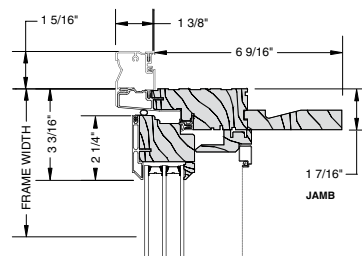
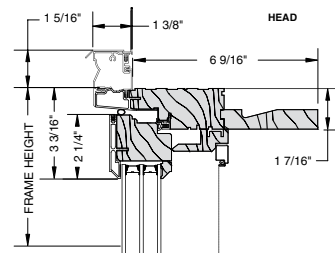
# ULTRA SERIES | AWNINGS

## CRANK-OUT EP AWNING CROSS SECTION DRAWINGS

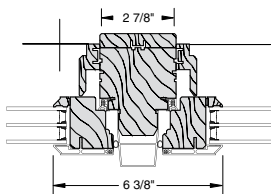
Standard Crank-out EP Awning



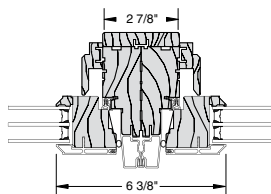
Crank-out EP Awning with 1-15/16" Brickmould & 6-9/16" Jamb



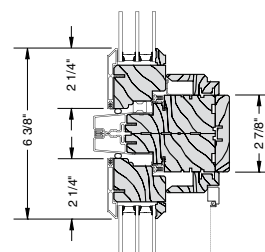
CRANK-OUT EP AWNING  
STANDARD MULLION



CRANK-OUT EP AWNING  
NARROW MULLION



EP PICTURE UNIT  
STACKED OVER AWNING



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

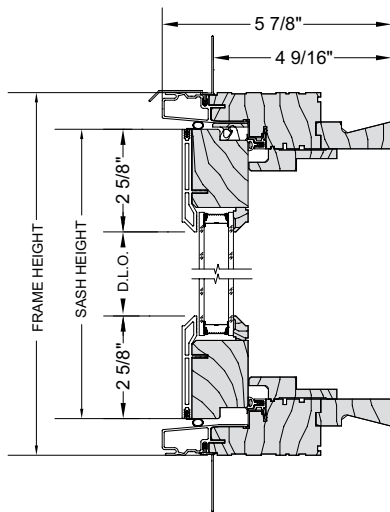
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

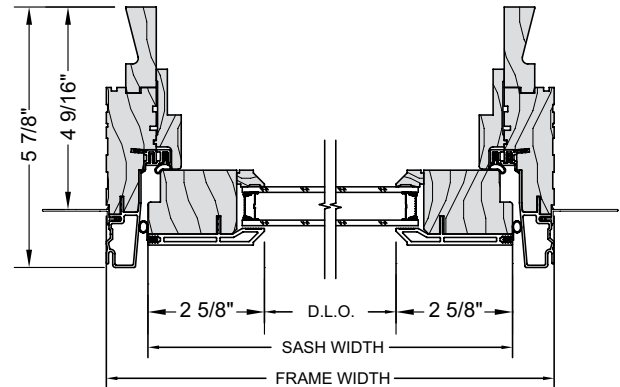


## PUSH-OUT AWNING CROSS SECTION DRAWINGS

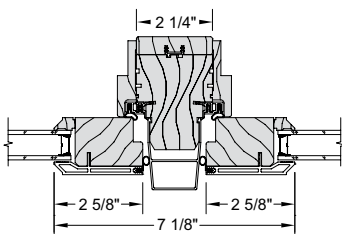
Vertical Section



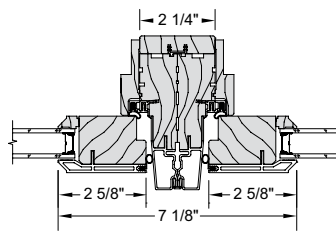
Horizontal Section



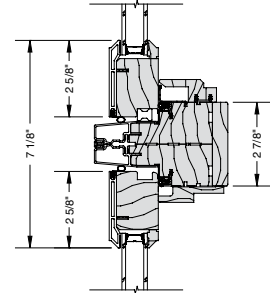
PUSH-OUT AWNING  
STANDARD MULLION



PUSH-OUT AWNING  
NARROW MULLION



PICTURE UNIT STACKED  
OVER PUSH-OUT AWNING



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).



# ULTRA SERIES | DOUBLE HUNG

STERLING DOUBLE HUNG

MAJESTA® DOUBLE HUNG

MAGNUM DOUBLE HUNG

TRADITIONAL DOUBLE HUNG

POCKET DOUBLE HUNG

COTTAGE-STYLE & REVERSE-COTTAGE STYLE

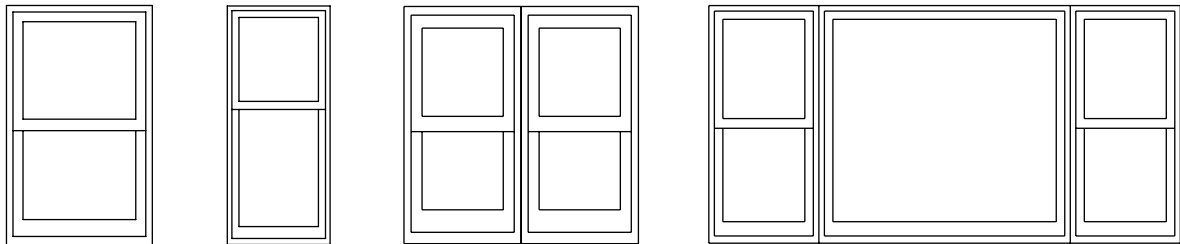
STUDIO & TRANSOM UNITS

PICTURE COMBINATION UNITS

BAY UNITS

SEGMENT HEAD & HALF-CIRCLE TOP UNITS

SINGLE HUNG



Quality details adorn the classic design of Ultra Series double hungs. Both Traditional and Sterling sash double hungs can be removed from the inside of your home for easy cleaning. Choose options such as divided lites or StormGuard combination units to enhance the style and performance of your windows. Or, replace older windows with an easy to install, energy efficient pocket double hung.

# ULTRA SERIES | STERLING DOUBLE HUNG

PATENT NOS. 7,296,381 & 7,448,164



## STERLING DOUBLE HUNG STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 4-9/16" (basic box width is 4-9/16")
- Frame thickness is 3/4" at side jambs and head
- Sill thickness is 1-3/16", slope is 14°
- Constructed of pine, with pine interior stops and wood mull casings on mulled units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- .050" thick, 6063 extruded aluminum alloy is kerf mount, press fit and mechanically fastened onto wood sash with coped ends
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Wood interior head parting stop
- Fully weatherstripped for a tight seal
- Clay-colored, heavy duty sash lock with a dual positioning lever allows sash to be unlocked, operated and tilted in from one location
- Spring-loaded block-and-tackle mechanical balances to carry the sash weight
- Concealed PVC jambliners with kerf mount
- Wood wrapped jambliner closure on the interior (unless interior is prefinished white or primed, then jambliner will be paintable white PVC) and extruded aluminum jambliner closure on the exterior hides PVC jambliners
- Heavy vinyl nailing fins with head drip caps\*\*
- Pine-veneered head and seat boards; unique narrow mullions and cable support system on bay units

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Interior jamb view



Exterior jamb view



Wood wrapped jambliner closure on the interior and an extruded aluminum jambliner closure on the exterior hides PVC jambliners.



Heavy duty sash lock with dual positioning lever allows sash to be unlocked, operated, and tilted in from one location.



## STORMGUARDS



Kolbe's durable StormGuard combination storm/screen units provide extra protection from the elements. Units feature two glass inserts and one screen insert that can be removed from the interior for cleaning. Frames are constructed of extruded aluminum made of a lightweight alloy, which is easy to handle without sacrificing performance. Weatherstripping along the top and sides of all three inserts ensures a tight fit that will withstand harsh weather. Weep holes channel water out to help prevent damage to the window sill. The sight

lines and profile of StormGuard units closely match the window it complements, which means the unit will blend in and your view will not be obscured. Screen inserts have fiberglass mesh as standard; aluminum mesh is optional. Frames are available in Ultra Pure White, White, Beige, Sand, Rustic, Hartford Green, Chutney and Coal Black.



## HARDWARE

Sterling double hungs feature a pick-resistant cam lock with a concealed locking mechanism and tilt latches installed into an interlock channel. The Clay-colored lock is factory-applied as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black. Optional sash lift handles are available for easy operation.



Clay  
(standard)



sash lift handle in White  
(optional)

## STERLING DOUBLE HUNG OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Mountain Air Energy Package
- Triple Pane
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Prep for stool

- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Universal design crank handle hardware kit in white
- Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Retractable screen kit (details on pg. 14)
- Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- Anodized aluminum screen frames in Clear, Champagne, Light Bronze, Medium Bronze, Dark Bronze, Black and Auburn
- StormGuard combination storm/screen units
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Insulated platforms, support brackets and oak-veneered head and seat boards for bay units
- Segment head, cottage-style segment head, half-circle top, and cottage-style half-circle top units. Contact your Kolbe supplier for further details.
- Sash limiters for safety
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

# ULTRA SERIES | MAJESTA® DOUBLE HUNG



## MAJESTA DOUBLE HUNG STANDARD FEATURES

- 2-1/4" thick sash
- Overall jamb width is 6-9/16" (basic box width is 6-9/16")
- Frame thickness is 3/4" at side jambs and head
- Sill thickness is 1-3/16", slope is 14°
- Top rail is 3", stiles are 2-1/8" and bottom rail is 4-1/8"
- Constructed of pine with pine interior head parting stops and side stops
- Horizontal sash parts are constructed with LVL core for added strength
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- .050" thick, 6063 extruded aluminum alloy is kerf mount, press fit and mechanically fastened onto wood sash with coped ends
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- All exterior wood parts are preservative-treated
- Innovative, Bright Brass, heavy-duty sash locks; top lock eliminates sash drop and is located at the center of the top rail on the top sash; bottom lock is located at the center of the bottom rail on the bottom sash for operating convenience
- Class 5 balance system capable of carrying sash up to 200 lbs. makes sash installation and removal easier
- Concealed jamb liners and balance system using a wood-wrapped jamb liner closure on the interior and an aluminum closure on the exterior
- Double row of heavy duty weatherstripping around all sides of the sash for a tight seal
- Innovative design secures the sash in place allowing this unit to meet ratings up to CW-PG65 for certain units

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.



concealed wood jamb liners provide a clean look



optional triple pane glazing for added energy efficiency

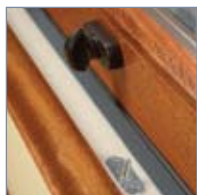


## HARDWARE

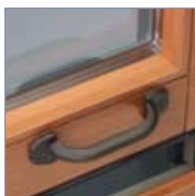
The innovative design of the Majesta locking hardware provides both performance and security. The turn knob and locking pin on the bottom sash tightly secure the window, while the heavy duty locking hardware on the top rail of the top sash eliminates sash drop. Optional hardware includes a keyed custodial lock and sash lift handles. An optional hook and pole device to help unlock and lower the top sash is also available. All Majesta hardware is available in Bright Brass (standard), Rustic Umber and Satin Nickel finishes.



turn knob lock on the bottom rail of the bottom sash in the closed position



turn knob and locking pin on the bottom of the bottom sash in the open position



optional sash lift handle helps to raise the bottom sash



heavy duty locking hardware on the top rail of the top sash



## MAJESTA DOUBLE HUNG OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Triple Pane
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Interior prefinishing (pg. 11)

- Interior casing (pg. 13)
- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Ovolo and square profile glazing beads (pg. 9)
- Projected sill nosing, extended sill horns or no nosing
- Standard locks in Rustic Umber and Satin Nickel finishes
- Keyed custodial locks
- Sash lift handles (two per sash); will match other hardware
- Hook pole device to help unlock and lower the top sash
- Half screens with BetterVue® fiberglass screen mesh and aluminum frames that match the exterior color of the unit
- Sash limiters for safety
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.. Argon gas may also not be included depending on lite size.

# ULTRA SERIES | MAGNUM DOUBLE HUNG

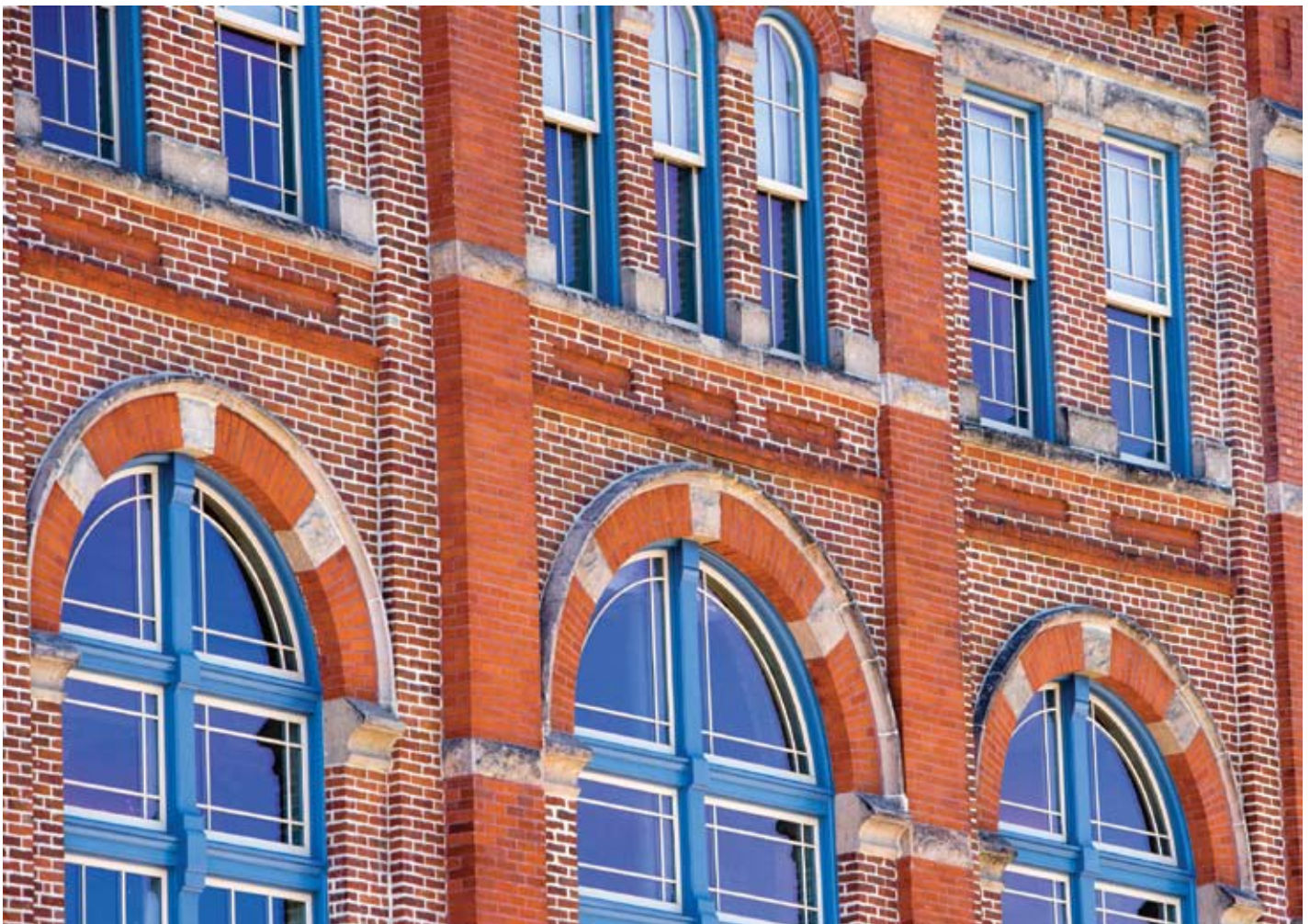
## MAGNUM DOUBLE HUNG STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 5-9/16" (basic box width is 5-9/16")
- Frame thickness is 1-1/16" at side jambs and head
- Sill thickness is 1-5/16", slope is 14°
- Stiles and top rail width is 2-9/16", bottom rail width is 3-5/8"
- Constructed of pine, with pine interior stops and wood mull casings on muller units with jambs wider than 5-9/16"
- 7/8" LoE<sup>2</sup>-270 insulating glass filled with argon gas\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit onto the wood frame exterior of all units
- Sash exterior is covered with heavy-gauge 5052 aluminum alloy roll-formed cladding
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Rigid PVC head parting stop with flexible fins and waterseal at the sill
- Fully weatherstripped for a tight seal
- Two clay-colored heavy duty sash locks
- Spring-loaded block-and-tackle mechanical balances to carry the sash weight (four per sash)
- Beige PVC jamb liners with compression foam backing

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.





## HARDWARE

Two Clay-colored cam locks are factory-applied to Magnum double hung units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black. Sash lift handles are optional.



Clay (standard)



sash lift handle in White  
(optional)



## MAGNUM DOUBLE HUNG OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)

- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Projected sill nosing, extended sill horns or no nosing
- Ovolo and square profile glazing beads (pg. 9)
- White jamb liners
- Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black finishes
- Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black finishes
- Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Narrow mull covers
- Available as replacement sash kits (pg. 84)
- High performance modifications (impact performance modifications available for single hungs and studio units)

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

# ULTRA SERIES | TRADITIONAL DOUBLE HUNG

## TRADITIONAL DOUBLE HUNG STANDARD FEATURES

- 1-3/8" thick sash
- Overall jamb width is 4-9/16" (basic box width is 4-9/16")
- Frame thickness is 3/4" at side jambs and head
- Sill thickness is 1-3/16", slope is 14°
- Constructed of pine, with pine interior stops and wood mull casings on mull units
- 9/16" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with heavy gauge, 5052 aluminum alloy roll-formed cladding
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Rigid PVC head parting stop with flexible fins and waterseal at the sill
- Fully weatherstripped for a tight seal
- Clay-colored heavy duty sash lock
- Machined finger grooves on the top rail of the upper sash and bottom rail of the lower sash
- Spring-loaded block-and-tackle mechanical balances to carry the sash weight
- Beige PVC jambliners with compression foam backing
- Heavy vinyl nailing fins with head drip caps\*\*
- Pine-veneered head and seat boards; unique narrow mullions and cable support system on bay units

Vinyl nailing fin applied as standard on units without brickmould



### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.



## HARDWARE

Clay-colored cam locks are factory-applied to double hung units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black. Sash lift handles are an option for units without finger grooves.



Clay (standard)



White



sash lift handle in White  
(optional)



Beige



Brass



## STORMGUARDS

Kolbe's durable StormGuard combination storm/screen units provide extra protection from the elements. Units feature two glass inserts and one screen insert that can be removed from the interior for cleaning. Frames are constructed of extruded aluminum made of a lightweight alloy, which is easy to handle without sacrificing performance. Weatherstripping along the top and sides of all three inserts ensures a tight fit that will withstand harsh weather. Weep holes channel water out to help prevent damage to the window sill. The sight lines and profile of StormGuard units closely match the window it complements, which means the unit will blend in and your view will not be obscured. Screen inserts have BetterVue® fiberglass mesh as standard; aluminum mesh is optional. Frames are available in Ultra Pure White, White, Beige, Sand, Rustic, Hartford Green, Chutney and Coal Black.

## TRADITIONAL DOUBLE HUNG OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Prep for stool

- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- No finger grooves in top, bottom or both sash
- Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Matte Black or Rustic Umber
- Universal design crank handle hardware kit in white
- Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Matte Black or Rustic Umber
- White jamb liners
- Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- StormGuard combination storm/screen units
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Insulated platforms, support brackets and oak-veneered head and seat boards for bay units
- Sash limiters for safety
- High performance impact modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.



## ULTRA SERIES | POCKET DOUBLE HUNG



### POCKET DOUBLE HUNG STANDARD FEATURES

- 1-3/4" thick sash
- 3-1/4" pocket jamb depth
- Frame thickness is 3/4" at side jambs and head
- Sill slope is 7°
- Constructed of pine, with pine interior stops and wood mull casings on mull units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- .050" thick, 6063 extruded aluminum alloy is kerf mount, press fit and mechanically fastened onto wood sash with coped ends
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Wood interior head parting stop
- Fully weatherstripped for a tight seal
- Clay-colored, heavy duty sash lock
- Spring-loaded block-and-tackle mechanical balances to carry the sash weight
- Concealed PVC jambliners with kerf mount
- Wood wrapped jambliner closure on the interior (unless interior is prefinished white or primed, then jambliner will be paintable white PVC) and extruded aluminum jambliner closure on the exterior hides PVC jambliners

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.



## HARDWARE

Clay-colored sash locks are factory-applied to double hung units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, or Matte Black. Sash lift handles are an option for units without finger grooves.



Clay (standard)



White



Beige



Brass



sash lift handle in White  
(optional)

## POCKET DOUBLE HUNG OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)

- Interior casing (pg. 13)
- Prep for stool
- Extruded aluminum accessories can be field-applied to accessory grooves on the exterior frame (pg. 12)
- Sash lift handles in Clay, White, Beige, Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Sash locks in White, Beige, Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- Anodized aluminum screen frames in Clear, Champagne, Light Bronze, Medium Bronze, Dark Bronze, Black or Auburn
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Transom and studio units
- Segment head, cottage-style segment head, half-circle top, and cottage-style half-circle top units.
- Sash limiters for safety




































































































### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

# ULTRA SERIES | DOUBLE HUNG

## STERLING & TRADITIONAL DOUBLE HUNG

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-0 7/16"									
3'-4 7/16"									
4'-0 7/16"									
4'-4 7/16"									
4'-8 7/16"									
5'-0 7/16"									
5'-4 7/16"									
5'-8 7/16"									
6'-0 7/16"									
6'-4 7/16"									
6'-8 7/16"									

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Units shown are also available as single hung units with Traditional sash only.

For cottage-style units, see pg. 87.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

For rough opening recommendations, see pg. 188.

\* Units meet most national emergency escape and rescue requirements.

\*\* Only Traditional sash units meet most national emergency escape and rescue requirements.

### PRODUCT CODES:

To order double hung units, add "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: UDH1614-3). Specify Traditional or Sterling sash. For pocket double hungs, talk to your local Kolbe dealer.

ES. = Frame Size

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

## WIDTH DIMENSIONS FOR TWIN MULLED UNITS



Glass (per-sash)	16"	20"	24"	26"	28"	30"	32"	36"	40"
R.O.	3'-7 1/2"	4'-3 1/2"	4'-11 1/2"	5'-3 1/2"	5'-7 1/2"	5'-11 1/2"	6'-3 1/2"	6'-11 1/2"	7'-7 1/2"
F.S.	3'-7"	4'-3"	4'-11"	5'-3"	5'-7"	5'-11"	6'-3"	6'-11"	7'-7"

### NOTES:

All measurements are nominal. Elevation charts are not to scale. Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary. For rough opening recommendations, see pg. 188.

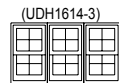
### PRODUCT CODES:

To order cottage-style double hung units, add "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: UDH1624/36-3). Specify Traditional or Sterling sash. For pocket double hungs, talk to your local Kolbe dealer.

F.S. = Frame Size • R.O. = Rough Opening

S.O. = Sash Opening • G.S. = Glass Size (Glass sizes are shown per sash.)

## WIDTH DIMENSIONS FOR TRIPLE MULLED UNITS



Glass (per-sash)	16"	20"	24"	26"	28"	30"	32"	36"	40"
R.O.	5'-5"	6'-5"	7'-5"	7'-11"	8'-5"	8'-11"	9'-5"	10'-5"	11'-5"
F.S.	5'-4 1/2"	6'-4 1/2"	7'-4 1/2"	7'-10 1/2"	8'-4 1/2"	8'-10 1/2"	9'-4 1/2"	10'-4 1/2"	11'-4 1/2"

## DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to S.O.	-1 1/2"	-2 7/16"
S.O. to G.S.	-4"	-6" ± 2
G.S. to D.L.O.	-1"	-1"

NOTES: Clear opening dimensions can be found on pg. 188.

Cottage-style dimension calculations are different; consult your supplier.











































Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 15/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+3 3/8"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+4 11/16"

F.S. = Frame Size • G.S. = Glass Size • S.O. = Sash Opening  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

# ULTRA SERIES | DOUBLE HUNG

## DOUBLE HUNG | RECTANGULAR TRANSOMS

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-9 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-10"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	28"	32"	36"	40"
11 1/2"							
1'-0"							
1'-3 1/2"							
1'-4"							
1'-5 1/2"							
1'-6"							
1'-7 1/2"							
1'-8"							
1'-11 1/2"							
2'-0"							
2'-5 1/2"							
2'-6"							
2'-9 1/2"							

### NOTES:

All measurements are nominal. These dimensions apply only for transoms with flat sills. Contact your supplier for dimensions of units with beveled sills. Elevation charts are not to scale.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Transom units are only available with a 1-3/4" sash. Specify roll-formed or extruded aluminum sash when ordering.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

For pocket double hung transoms, talk to your local Kolbe dealer.

F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size



# ULTRA SERIES | DOUBLE HUNG

## DOUBLE HUNG | STUDIO UNITS

F.S.	4'-1 1/2"	4'-5 1/2"	5'-1 1/2"	5'-9 1/2"	6'-5 1/2"	7'-1 1/2"	8'-5 1/2"
R.O.	4'-2"	4'-6"	5'-2"	5'-10"	6'-6"	7'-2"	8'-6"
S.O.	4'-0"	4'-4"	5'-0"	5'-8"	6'-4"	7'-0"	8'-4"
G.S.	44 1/2"	48 1/2"	56 1/2"	64 1/2"	72 1/2"	80 1/2"	96 1/2"
4'-0 7/16"							
4'-4 7/16"							
4'-8 7/16"							
5'-0 7/16"							
5'-4 7/16"							
5'-8 7/16"							
6'-0 7/16"							
6'-4 7/16"							
6'-8 7/16"							

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Studio units are only available with a 1-3/4" sash. Specify roll-formed or extruded aluminum sash when ordering.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

For pocket double hung studio units, talk to your local Kolbe dealer.















\* To match cottage-style double hungs with divided lites, 5'-6" high (S.O.) units must be ordered 5 lites high.

F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

# ULTRA SERIES | DOUBLE HUNG

## STERLING & TRADITIONAL DOUBLE HUNG

### Active Half-Circle Tops

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-0 1/2"									
3'-1 1/16"									
3'-4 1/2"									
3'-5 1/16"									
3'-10"									
4'-0 1/2"									
4'-1 1/16"									
4'-4 1/2"									
4'-5 1/16"									
4'-8 1/2"									
4'-9 1/16"									
5'-0 1/2"									
5'-1 1/16"									
5'-4 1/2"									
5'-5 1/16"									
5'-8 1/2"									
5'-9 1/16"									
6'-0 1/2"									
6'-1 1/16"									
6'-4 1/2"									
6'-5 1/16"									
6'-8 1/2"									
6'-9 1/16"									

#### NOTES:

All measurements are nominal. Elevation charts are not to scale.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

The venting of the bottom sash of half-circle top units is limited due to the radius of the top sash.

Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

F.S. = Frame Size

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

# ULTRA SERIES DOUBLE HUNG

## STERLING DOUBLE HUNG

### Active Segment Heads

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-0 7/16"	UDH1614-SEG	UDH2014-SEG	UDH2414-SEG	UDH2614-SEG	UDH2814-SEG	UDH3014-SEG	UDH3214-SEG	UDH3614-SEG	UDH4014-SEG
3'-4 7/16"	UDH1616-SEG	UDH2016-SEG	UDH2416-SEG	UDH2616-SEG	UDH2816-SEG	UDH3016-SEG	UDH3216-SEG	UDH3616-SEG	UDH4016-SEG
4'-0 7/16"	UDH1620-SEG	UDH2020-SEG	UDH2420-SEG	UDH2620-SEG	UDH2820-SEG	UDH3020-SEG	UDH3220-SEG	UDH3620-SEG	UDH4020-SEG
4'-4 7/16"	UDH1622-SEG	UDH2022-SEG	UDH2422-SEG	UDH2622-SEG	UDH2822-SEG	UDH3022-SEG	UDH3222-SEG	UDH3622-SEG	UDH4022-SEG
4'-8 7/16"	UDH1624-SEG	UDH2024-SEG	UDH2424-SEG	UDH2624-SEG	UDH2824-SEG	UDH3024-SEG	UDH3224-SEG	UDH3624-SEG	UDH4024-SEG
5'-0 7/16"	UDH1626-SEG	UDH2026-SEG	UDH2426-SEG	UDH2626-SEG	UDH2826-SEG	UDH3026-SEG	UDH3226-SEG	UDH3626-SEG	UDH4026-SEG
5'-4 7/16"	UDH1628-SEG	UDH2028-SEG	UDH2428-SEG	UDH2628-SEG	UDH2828-SEG	UDH3028-SEG	UDH3228-SEG	UDH3628-SEG	UDH4028-SEG
5'-8 7/16"	UDH1630-SEG	UDH2030-SEG	UDH2430-SEG	UDH2630-SEG	UDH2830-SEG	UDH3030-SEG	UDH3230-SEG	UDH3630-SEG	UDH4030-SEG
6'-0 7/16"	UDH1632-SEG	UDH2032-SEG	UDH2432-SEG	UDH2632-SEG	UDH2832-SEG	UDH3032-SEG	UDH3232-SEG	UDH3632-SEG	UDH4032-SEG
6'-4 7/16"	UDH1634-SEG	UDH2034-SEG	UDH2434-SEG	UDH2634-SEG	UDH2834-SEG	UDH3034-SEG	UDH3234-SEG	UDH3634-SEG	UDH4034-SEG
6'-8 7/16"	UDH1636-SEG	UDH2036-SEG	UDH2436-SEG	UDH2636-SEG	UDH2836-SEG	UDH3036-SEG	UDH3236-SEG	UDH3636-SEG	UDH4036-SEG

#### NOTES:

All measurements are nominal. Elevation charts are not to scale.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary. Venting is viewed from the exterior. Single units shown are also available as single hung units and replacement sash kits with Traditional sash only.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

F.S. = Frame Size

R.O. = Rough Opening


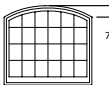
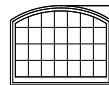
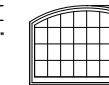
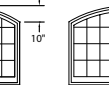
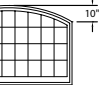
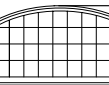
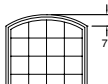
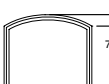


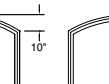
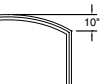

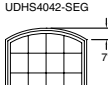
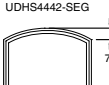
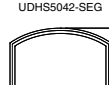
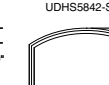
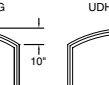
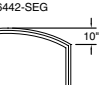
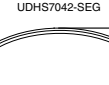


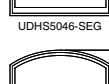

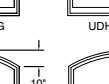
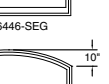
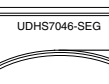
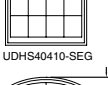

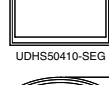



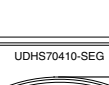
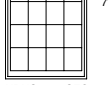



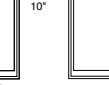



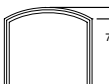
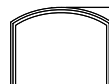
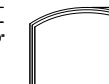
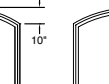
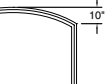



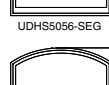
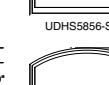
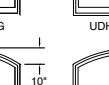
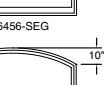
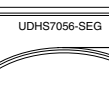
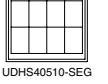






S.O. = Sash Opening

G.S. = Glass Size

# ULTRA SERIES | DOUBLE HUNG

## STERLING DOUBLE HUNG

Segment Head Studios

F.S.	4'-1 1/2"	4'-5 1/2"	5'-1 1/2"	5'-9 1/2"	6'-5 1/2"	7'-1 1/2"	8'-5 1/2"
R.O.	4'-2"	4'-6"	5'-2"	5'-10"	6'-6"	7'-2"	8'-6"
S.O.	4'-0"	4'-4"	5'-0"	5'-8"	6'-4"	7'-0"	8'-4"
G.S.	44 1/2"	48 1/2"	56 1/2"	64 1/2"	72 1/2"	80 1/2"	96 1/2"
4'-0 7/16"							
4'-4 7/16"							
4'-8 7/16"							
5'-0 7/16"							
5'-4 7/16"							
5'-8 7/16"							
6'-0 7/16"							
6'-4 7/16"							
6'-8 7/16"							

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

Venting is viewed from the exterior. Single units shown are also available as single hung units and replacement sash kits with Traditional sash only.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

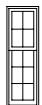








F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

# ULTRA SERIES | DOUBLE HUNG

## STERLING & TRADITIONAL DOUBLE HUNGS | COTTAGE-STYLE\* UNITS

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"

5'-8 7/16"  
5'-9"  
5'-6"  
36" / 24"






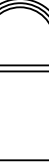



UDH1624/36 UDH2024/36 UDH2424/36 UDH2624/36 UDH2824/36 UDH3024/36 UDH3224/36 UDH3624/36 UDH4024/36

### STERLING DOUBLE HUNG

Active Cottage-Style Half-Circle Tops\*

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"

5'-8 1/2"  
5'-9 1/16"  
5'-6"  
36" / 24"

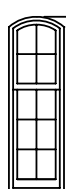








UDH1624/36-HC UDH2024/36-HC UDH2424/36-HC UDH2624/36-HC UDH2824/36-HC UDH3024/36-HC UDH3224/36-HC UDH3624/36-HC UDH4024/36-HC

### STERLING DOUBLE HUNG

Active Cottage-Style Segment Heads\*

F.S.	1'-9 1/2"	2'-1 1/2"	2'-5 1/2"	2'-7 1/2"	2'-9 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-9 1/2"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"

5'-8 7/16"  
5'-9"  
5'-6"  
36" / 24"

UDH1624/36 SEG UDH2024/36 SEG UDH2424/36 SEG UDH2624/36 SEG UDH2824/36 SEG UDH3024/36-SEG UDH3224/36-SEG UDH3624/36-SEG UDH4024/36-SEG

#### NOTES:

\*Also available in reverse cottage-style.

All measurements are nominal. Elevation charts are not to scale.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

The venting of the bottom sash of half-circle top units is limited due to the radius of the top sash.

Venting is viewed from the exterior. Single units shown are also available as single hung units and replacement sash kits with Traditional sash only.

Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

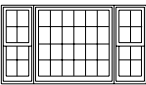
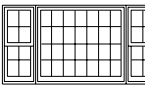
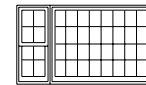
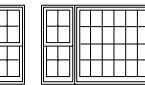





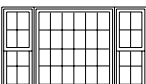


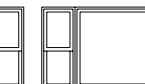
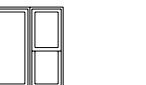




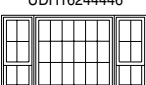
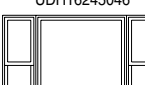
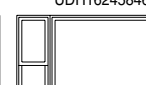
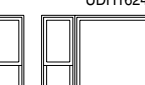





F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size



# ULTRA SERIES | DOUBLE HUNG

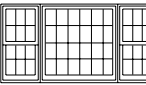
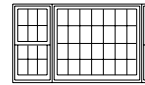
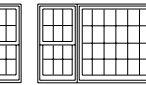
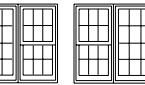
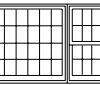




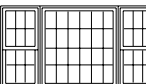


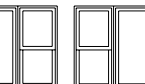





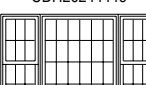
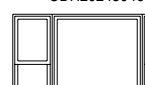


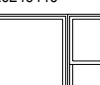




## DOUBLE HUNG | PICTURE UNITS

16" flankers

F.S.	8'-0 1/2"			8'-8 1/2"			9'-4 1/2"			10'-0 1/2"		
	8'-1"			8'-9"			9'-5"			10'-1"		
	S.O. 1'-8"   4'-4"   1'-8"			1'-8"   5'-0"   1'-8"			1'-8"   5'-8"   1'-8"			1'-8"   6'-4"   1'-8"		
	G.S.* 16"   48 1/2"   16"			16"   56 1/2"   16"			16"   64 1/2"   16"			16"   72 1/2"   16"		
4'-4 7/16"	4'-5"	4'-2"	22"   45 1/4"									
				UDH16224442	UDH16225042	UDH16225842	UDH16226442					
4'-8 7/16"	4'-9"	4'-6"	24"   49 1/4"									
				UDH16244446	UDH16245046	UDH16245846	UDH16246446					
5'-5 7/16"	5'-5"	5'-2"	28"   57 1/4"									
				UDH16284452	UDH16285052	UDH16285852	UDH16286452					

## DOUBLE HUNG | PICTURE UNITS

20" flankers

F.S.	8'-8 1/2"			9'-4 1/2"			10'-0 1/2"			10'-8 1/2"		
	8'-9"			9'-5"			10'-1"			10'-9"		
	S.O. 2'-0"   4'-4"   2'-0"			2'-0"   5'-0"   2'-0"			2'-0"   5'-8"   2'-0"			2'-0"   6'-4"   2'-0"		
	G.S.* 20"   48 1/2"   20"			20"   56 1/2"   20"			20"   64 1/2"   20"			20"   72 1/2"   20"		
4'-4 7/16"	4'-5"	4'-2"	22"   45 1/4"									
				UDH20224442	UDH20225042	UDH20225842	UDH20226442					
4'-8 7/16"	4'-9"	4'-6"	24"   49 1/4"									
				UDH20244446	UDH20245046	UDH20245846	UDH20246446					
5'-5 7/16"	5'-5"	5'-2"	28"   57 1/4"									
				UDH20284452	UDH20285052	UDH20285852	UDH20286452					

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

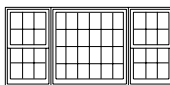
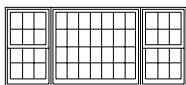
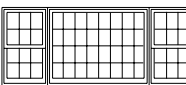
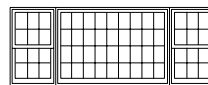
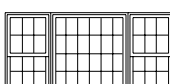



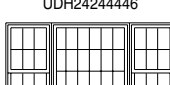



\* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.

F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

# ULTRA SERIES | DOUBLE HUNG

## DOUBLE HUNG | PICTURE UNITS

24" flankers

F.S.		9'-4 1/2"			10'-0 1/2"			10'-8 1/2"			11'-4 1/2"		
R.O.		9'-5"			10'-1"			10'-9"			11'-5"		
S.O.		2'-4"	4'-4"	2'-4"	2'-4"	5'-0"	2'-4"	2'-4"	5'-8"	2'-4"	2'-4"	6'-4"	2'-4"
G.S.*		24"	48 1/2"	24"	24"	56 1/2"	24"	24"	64 1/2"	24"	24"	72 1/2"	24"
4'-4 7/16"	4'-5"	22"   45 1/4"											
4'-8 7/16"	4'-9"	24"   49 1/4"											
5'-5 7/16"	5'-2"	28"   57 1/4"											

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

\* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.

F.S. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

# ULTRA SERIES | DOUBLE HUNG

## DOUBLE HUNG | 30° BAY WINDOWS

16" flankers

20" flankers

UNIT PROJECTION: 13 3/8"				UNIT PROJECTION: 15 3/8"			
U.D.	8'-0 5/8"			8'-8 5/8"			
R.O.	7'-11"			8'-7"			
S.O.	1'-8"	4'-4"	1'-8"	1'-8"	5'-0"	1'-8"	
G.S.*	16"	48 1/2"	16"	16"	56 1/2"	16"	
4'-5 3/16"	UDH30-16224442			UDH30-16225042			
4'-5 11/16"	UDH30-16244446			UDH30-16245046			
4'-9 3/16"	UDH30-20224442			UDH30-20225042			
4'-9 11/16"	UDH30-20244446			UDH30-20245046			
5'-5 3/16"	UDH30-20285052						
5'-5 11/16"							
5'-2"							
28"							

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-13/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

\* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.

F.S. = Frame Size

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

## DOUBLE HUNG | 45° BAY WINDOWS

16" flankers

20" flankers

UNIT PROJECTION: 18 7/8"				UNIT PROJECTION: 21 11/16"			
U.D.	7'-8 1/4"			8'-1 7/8"			
R.O.	7'-4 7/8"			7'-10 1/2"			
S.O.	1'-8"	4'-4"	1'-8"	2'-0"	4'-4"	2'-0"	
G.S.*	16"	48 1/2"	16"	20"	48 1/2"	20"	
4'-5 3/16"	UDH45-16224442			UDH45-20224442			
4'-5 11/16"	UDH45-16225042			UDH45-20225042			
4'-9 3/16"	UDH45-16244446			UDH45-20244446			
4'-9 11/16"	UDH45-16245046			UDH45-20245046			
5'-5 3/16"	UDH45-20285052						
5'-5 11/16"							
5'-2"							
28"							

# ULTRA SERIES | DOUBLE HUNG

## MAGNUM DOUBLE HUNG

F.S.	3'-2 1/8"	3'-6 1/8"	3'-10 1/8"	4'-2 1/8"	4'-6 1/8"	4'-10 1/8"
R.O.	3'-2 5/8"	3'-6 5/8"	3'-10 5/8"	4'-2 5/8"	4'-6 5/8"	4'-10 5/8"
S.O.	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"
G.S.	29 9/16"	33 9/16"	37 9/16"	41 9/16"	45 9/16"	49 9/16"
6'-5 3/16"						
6'-9 3/16"						
7'-5 3/16"						
8'-1 3/16"						
8'-9 3/16"						
9'-1 3/16"						

## DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to S.O.	-2 1/8"	-3 3/16"
S.O. to G.S.	-6 7/16"	-6 7/8" ÷ 2
G.S. to D.L.O.	-1"	-1"

NOTES: Clear opening dimensions can be found on pg. 188.

Cottage-style dimension calculations are different; consult your supplier.

Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 63/64"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+3 7/16"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+4 11/16"

F.S. = Frame Size • G.S. = Glass Size • S.O. = Sash Opening  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

## MAJESTA DOUBLE HUNG

There are no standard sizes for Majesta windows.

Minimum Frame Size = 42" wide x 67-1/2" high

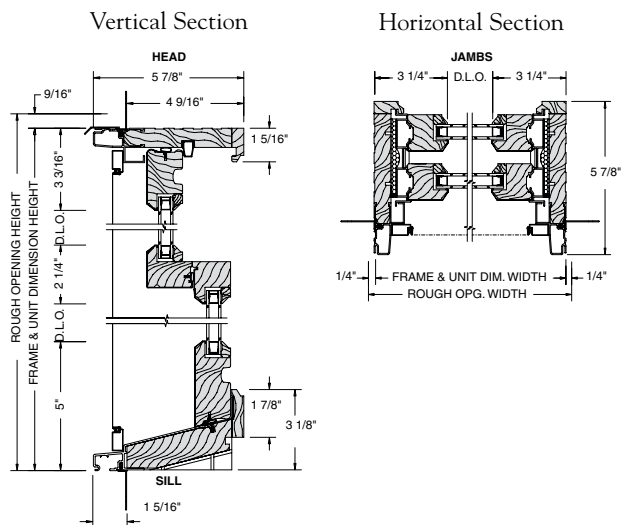
Minimum Glass Size = 34-5/8" wide x 28-7/16" (per sash)

Emergency Escape & Rescue Clearance = 37" wide x 24" high

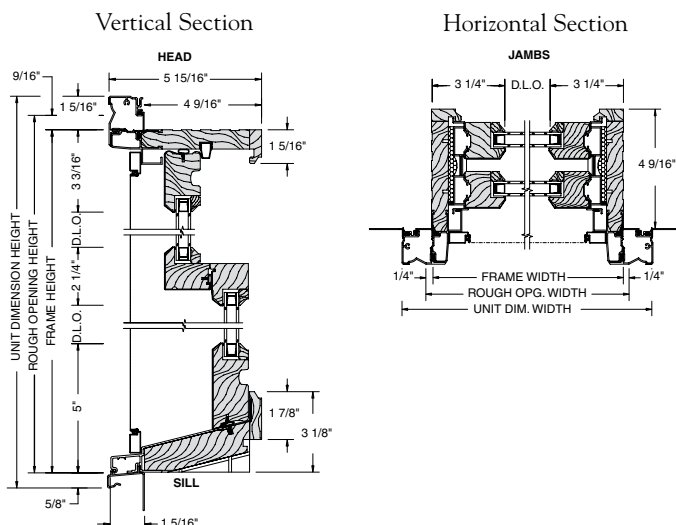
# ULTRA SERIES | DOUBLE HUNG

## TRADITIONAL DOUBLE HUNG CROSS SECTION DRAWINGS

Standard Traditional Double Hung

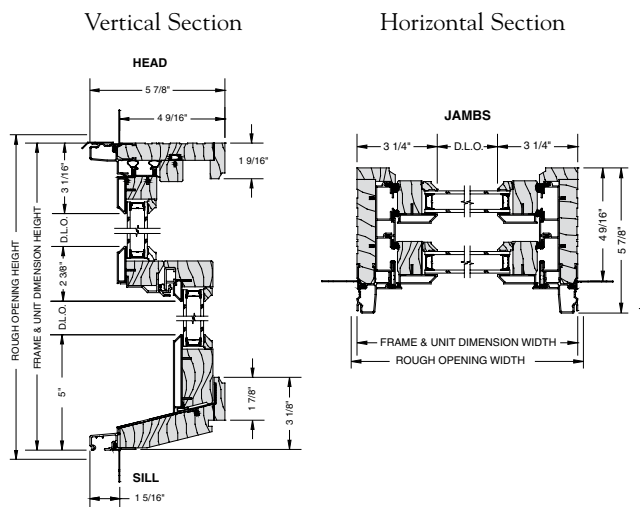


Traditional Double Hung with 1-15/16" Brickmould

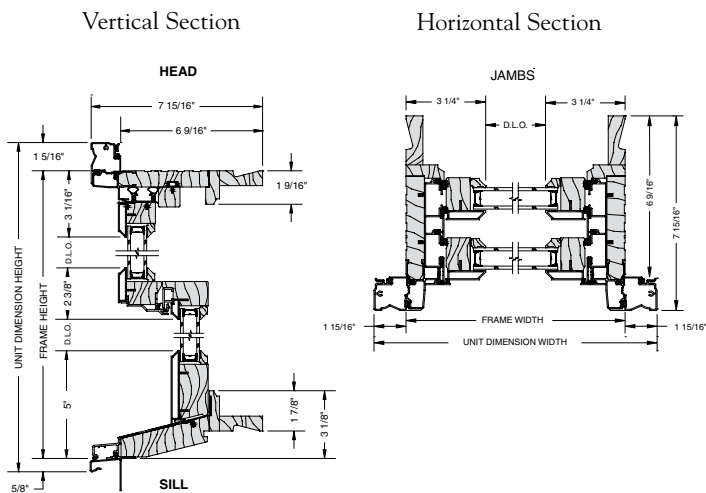


## STERLING DOUBLE HUNG CROSS SECTION DRAWINGS

Standard Sterling Double Hung



Sterling Double Hung with 1-15/16" Brickmould & 6-9/16" Jamb



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

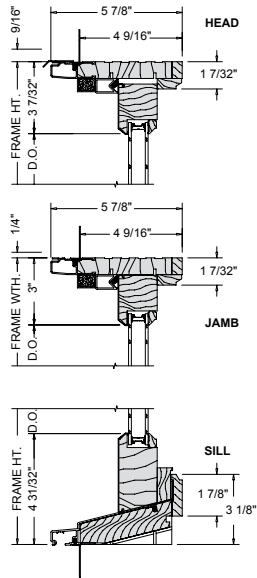
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).



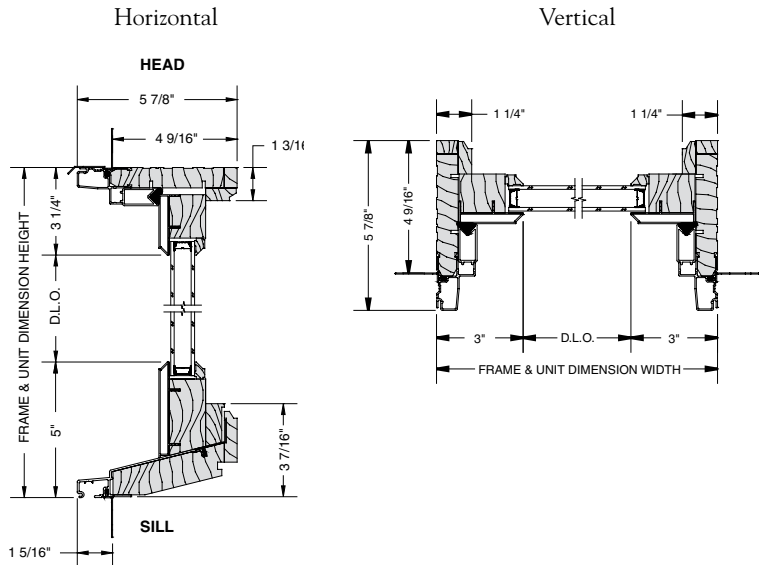
# ULTRA SERIES | DOUBLE HUNG

## DOUBLE HUNG STUDIO UNIT

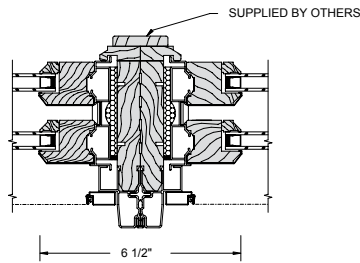
Traditional



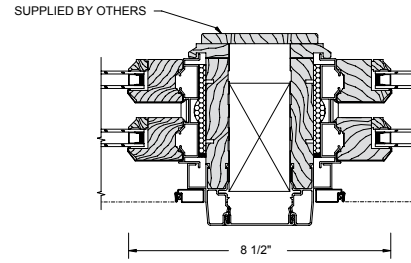
Sterling



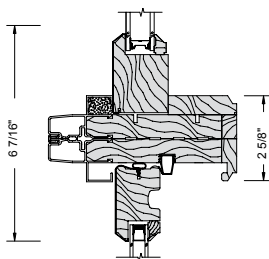
STANDARD NARROW MULLION



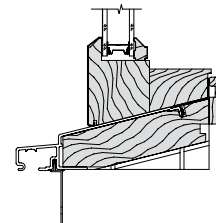
2" SPREAD MULLION



RECTANGULAR TRANSOM STACKED OVER TRADITIONAL DOUBLE HUNG



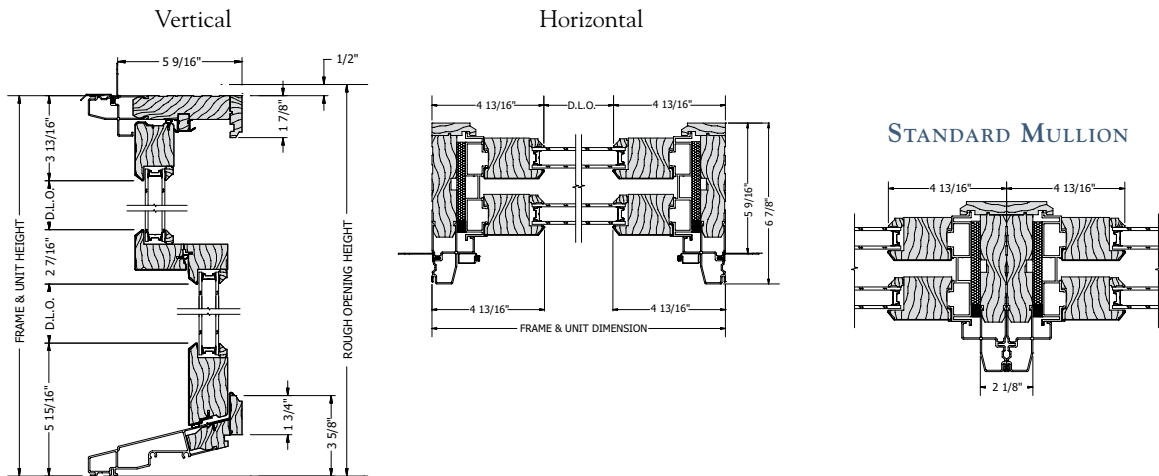
DOUBLE HUNG TRANSOM WITH OPTIONAL SILL



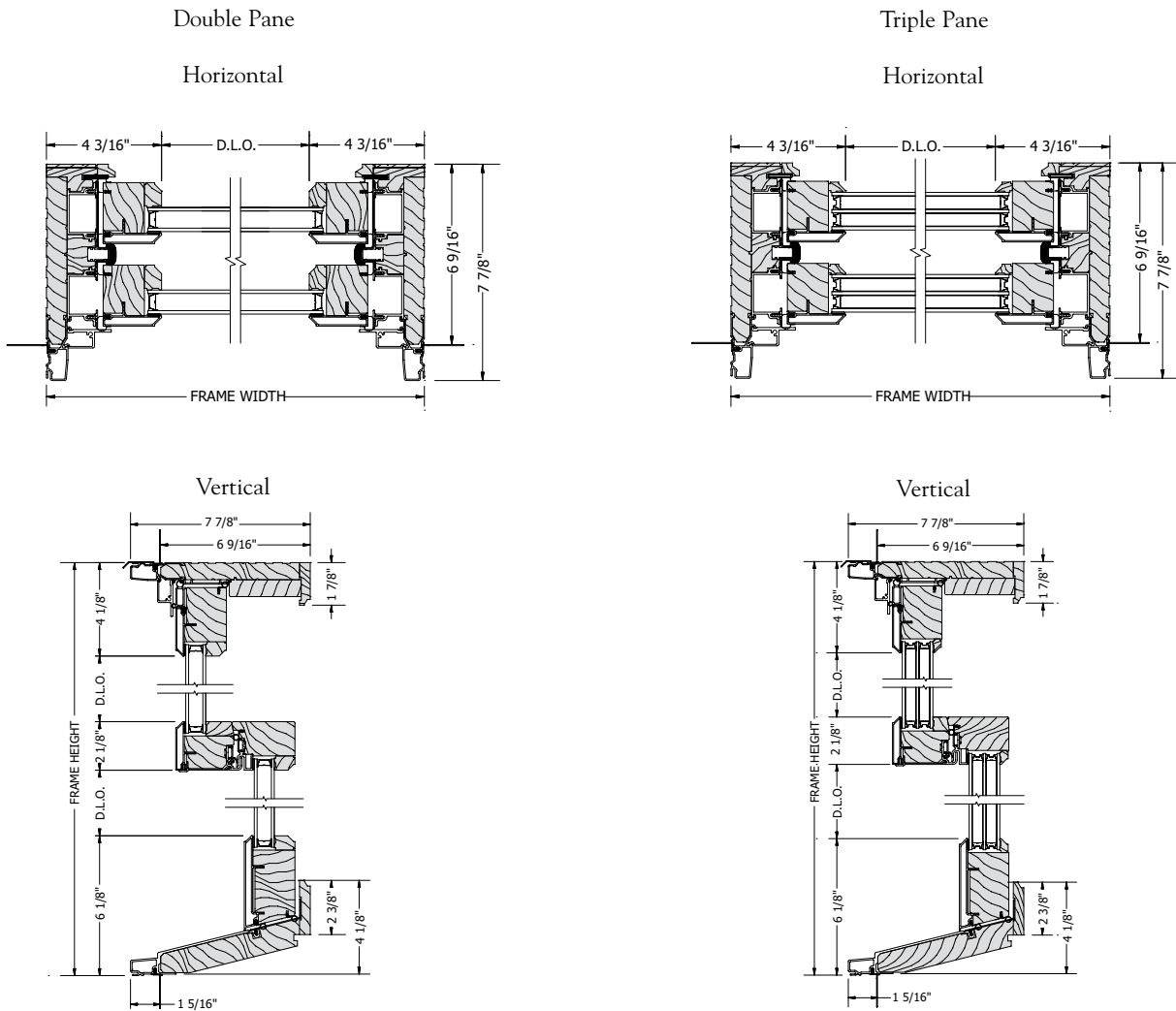
NOTE: Drawings are not to scale.

# ULTRA SERIES | DOUBLE HUNG

MAGNUM DOUBLE HUNG CROSS SECTION DRAWINGS



MAJESTA DOUBLE HUNG CROSS SECTION DRAWINGS



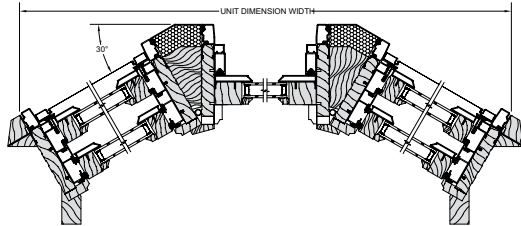
NOTE: Drawings are not to scale.

# ULTRA SERIES | DOUBLE HUNG

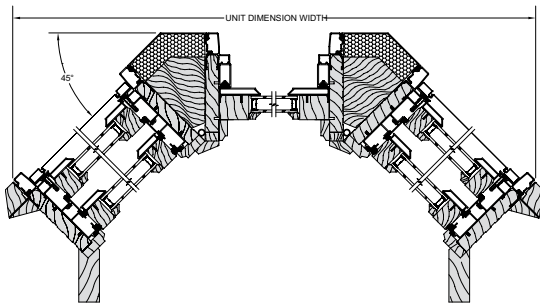
## DOUBLE HUNG BAY CROSS SECTION DRAWINGS

### STERLING

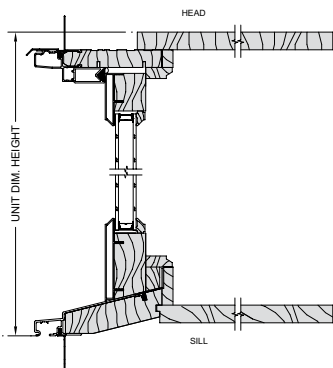
30° Bay Horizontal Section



45° Bay Horizontal Section

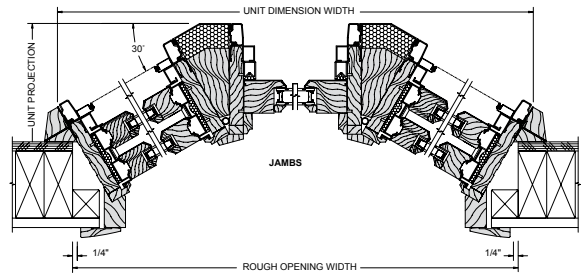


30° & 45° Bay Vertical Section

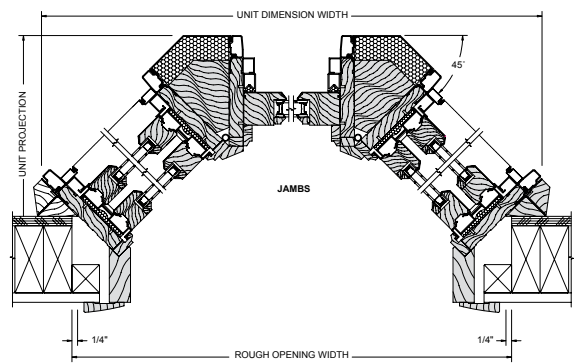


### TRADITIONAL

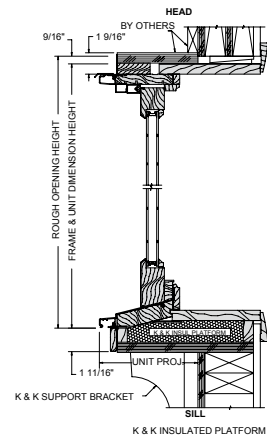
30° Bay Horizontal Section



45° Bay Horizontal Section



30° & 45° Bay Vertical Section

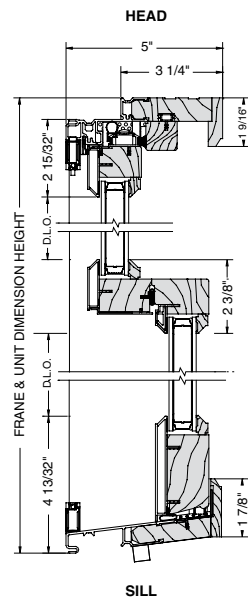


NOTE: Drawings are not to scale.

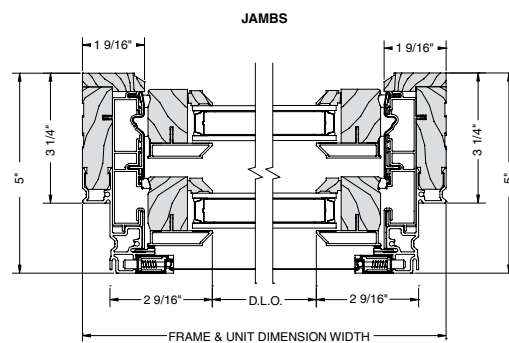
# ULTRA SERIES | DOUBLE HUNG

## POCKET DOUBLE HUNG CROSS SECTION DRAWINGS

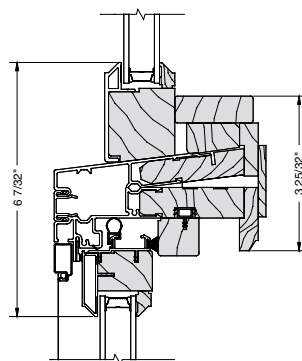
Vertical Section



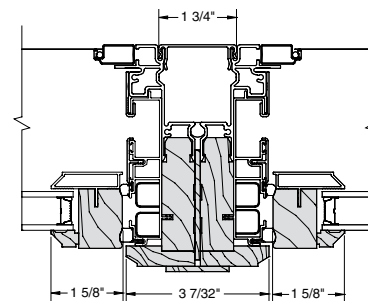
Horizontal Section



## RECTANGULAR TRANSOM STACKED OVER POCKET DOUBLE HUNG



## ACTIVE UNIT TO ACTIVE UNIT MULLION

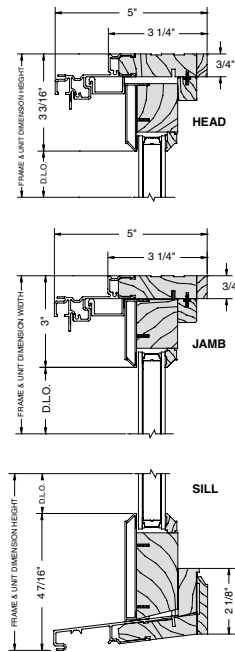


NOTE: Drawings are not to scale.

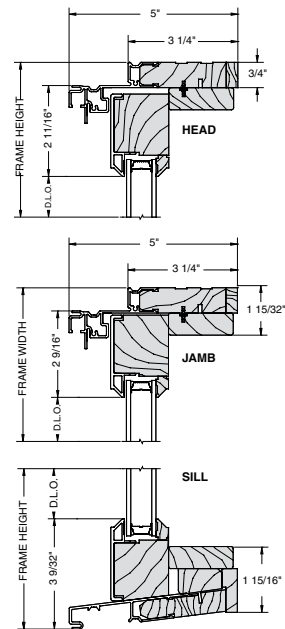
# ULTRA SERIES | DOUBLE HUNG

## POCKET DOUBLE HUNG CROSS SECTION DRAWINGS

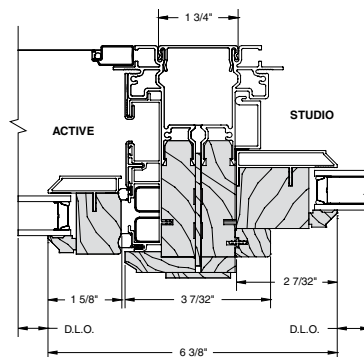
Studio Unit



Transom Unit



## STUDIO UNIT TO ACTIVE UNIT MULLION



NOTE: Drawings are not to scale.

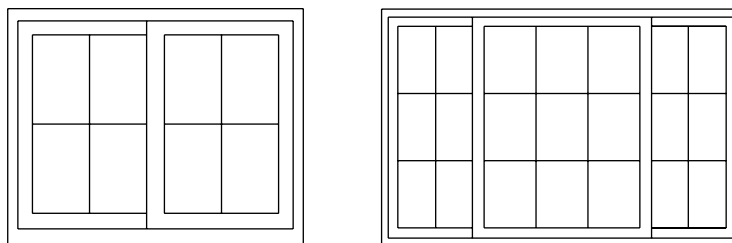




# ULTRA SERIES | SLIDERS

## DOUBLE SLIDERS

## TRIPLE SLIDERS



Ultra Series slider windows offer a large, unobstructed view of the outdoors. Sash operate from side-to-side, making slider windows ideal for areas with limited space. A heavy vinyl sill track and a foam-backed compression head track allow sash to be easily removed from the interior. Kolbe & Kolbe offers either double or triple sliders.



# ULTRA SERIES | SLIDERS

## SLIDER STANDARD FEATURES

- 1-3/8" thick sash
- 9/16" LoE<sup>2</sup>-270 insulating glass\*
- Overall jamb width is 4-9/16" (basic box width is 4-9/16")
- Constructed of pine, with pine interior stops
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with heavy gauge, 5052 aluminum alloy roll-formed cladding
- 70% PVDF fluoropolymer finish on frame exterior and sash exteriors (meets performance requirements of AAMA 2605-05)
- Rigid PVC waterseal at the sill
- Fully weatherstripped for a tight seal
- Clay-colored heavy duty sash lock
- Machined finger grooves on the outermost stiles
- Beige extruded vinyl head and sill tracks with compression foam backing on the head track
- Heavy vinyl nailing fins with head drip caps\*\*

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Vinyl nailing fin  
applied as standard



## HARDWARE

Clay-colored sash locks are factory-applied to slider units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black. Sash lift handles are an option for units without finger grooves.



Clay (standard)



White



Beige



Brass

## SLIDER OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermoPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-air-space
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.



## STORMGUARDS














































Kolbe's durable StormGuard combination storm/screen units provide extra protection from the elements. Units feature two glass inserts and one screen insert that can be removed from the interior for cleaning. Frames are constructed of extruded aluminum made of a lightweight alloy, which is easy to handle without sacrificing performance. Weatherstripping along three sides of all three inserts ensures a tight fit that will withstand harsh weather. Weep holes channel water out to help prevent damage to the window sill. The sight lines and profile of StormGuard units closely match the slider it complements which means the unit will blend in and your view will not be obscured. Screen inserts have BetterVue® fiberglass mesh as standard; aluminum mesh is optional. Frames are available in Ultra Pure White, White, Beige, Sand, Rustic, Hartford Green, Chutney and Coal Black.

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Prep for stool
- Extruded aluminum accessories applied to accessory grooves on exterior frame (pg. 12)
- Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber or Matte Black
- Full screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- BetterVue® or UltraVue® screen mesh
- StormGuard combination storm/screens units
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips

# ULTRA SERIES SLIDERS

## TRADITIONAL DOUBLE SLIDERS

F.S.	3'-2 1/2"	3'-10 1/2"	4'-6 1/2"	5'-2 1/2"	5'-10 1/2"
R.O.	3'-3"	3'-11"	4'-7"	5'-3"	5'-11"
S.O.	3'-1"	3'-9"	4'-5"	5'-1"	5'-9"
G.S.	16"   16"	20"   20"	24"   24"	28"   28"	32"   32"
1'-10 13/16"					
1'-11 3/8"	USL1616	USL2016	USL2416	USL2816	USL3216
2'-2 13/16"					
2'-3 3/8"	USL1620	USL2020	USL2420	USL2820	USL3220
2'-4 1/2"					
2'-5 1/4"	USL1624	USL2024	USL2424	USL2824	USL3224*
2'-6 13/16"					
2'-7 3/8"	USL1628	USL2028	USL2428	USL2828*	USL3228*
2'-8 1/2"					
2'-9 1/4"	USL1632	USL2032	USL2432	USL2832*	USL3232*
2'-10 13/16"					
2'-11 3/8"	USL1636	USL2036	USL2436*	USL2836*	USL3236*
2'-12 1/2"					
2'-13 3/8"	USL1640	USL2040	USL2440*	USL2840*	USL3240*
2'-14 1/2"					
2'-15 1/4"	USL1644	USL2044	USL2444*	USL2844*	USL3244*
2'-16 13/16"					
2'-17 3/8"	USL1648	USL2048	USL2448*	USL2848*	USL3248*

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary.

For rough opening recommendations, see pg. 188.

\* Units meet most national emergency escape and rescue requirements.

F.S. = Frame Size • R.O. = Rough Opening

S.O. = Sash Opening • G.S. = Glass Size

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to S.O.	-1 1/2"	-1 15/16"
S.O. to G.S.	-5" +2	-5 9/16"
G.S. to D.L.O.	-1"	-1"

NOTES: Clear opening dimensions can be found on pg. 188.

Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 15/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+3 3/8"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+4 11/16"

F.S. = Frame Size • G.S. = Glass Size • S.O. = Sash Opening  
D.L.O. = Daylight Opening • U.D. = Unit Dimension



## TRIPLE SLIDERS

F.S.	5'-11 1/2"	7'-3 1/2"	7'-11 1/2"	8'-7 1/2"
R.O.	6'-0"	7'-4"	8'-0"	8'-8"
S.O.	5'-10"	7'-2"	7'-10"	8'-6"
G.S.	16" / 31 3/4" / 16"	20" / 39 3/4" / 20"	20" / 47 3/4" / 20"	24" / 47 3/4" / 24"
3'-2 13/16"				
3'-10 13/16"				
4'-2 13/16"				
4'-6 13/16"				

## SLIDERS | REMODELING SIZES

F.S.	1'-11 1/2"	2'-11 1/2"	3'-11 1/2"	4'-11 1/2"	5'-11 1/2"	7'-11 1/2"
R.O.	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	8'-0"
S.O.	1'-10"	2'-10"	3'-10"	4'-10"	5'-10"	7'-10"
G.S.	8 1/2"   8 1/2"	14 1/2"   14 1/2"	20 1/2"   20 1/2"	26 1/2"   26 1/2"	32 1/2"   32 1/2"	20"   47 3/4"   20"
1'-11 7/16"						
2'-11 7/16"						
3'-11 7/16"						
4'-11 7/16"						

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary.

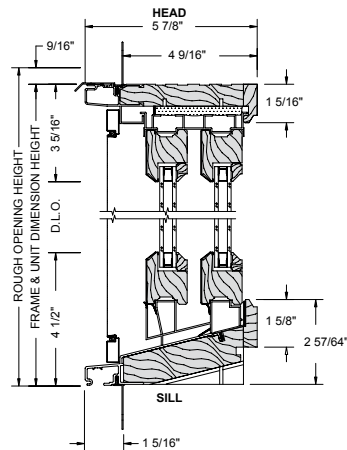
\* Units meet most national emergency escape and rescue requirements.

FS. = Frame Size • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

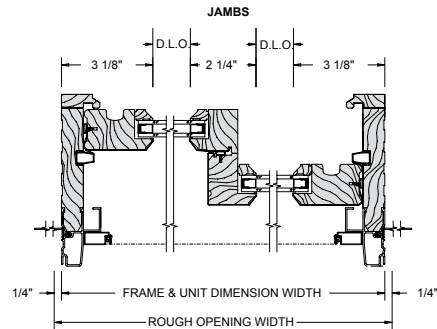
## TRADITIONAL SLIDER CROSS SECTION DRAWINGS

### Standard Traditional Double Slider

Vertical Section

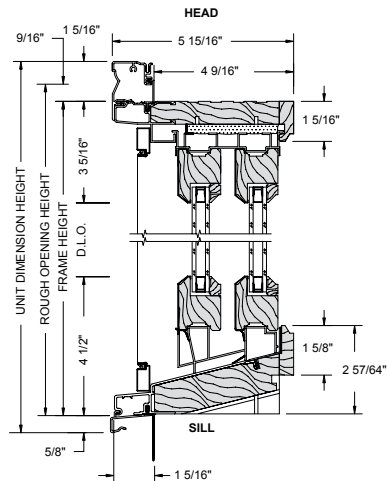


Horizontal Section

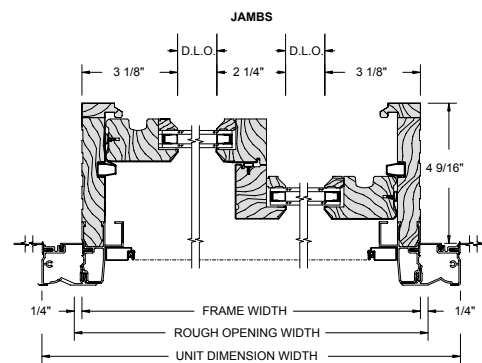


### Traditional Double Slider with 1-15/16\" Brickmould

Vertical Section



Horizontal Section



#### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

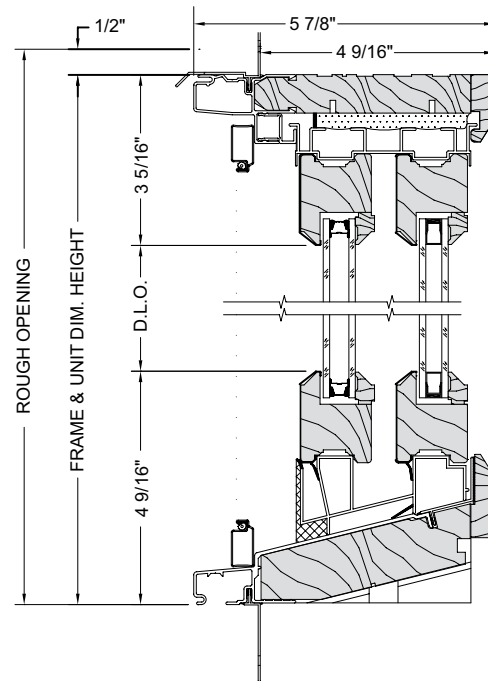
Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

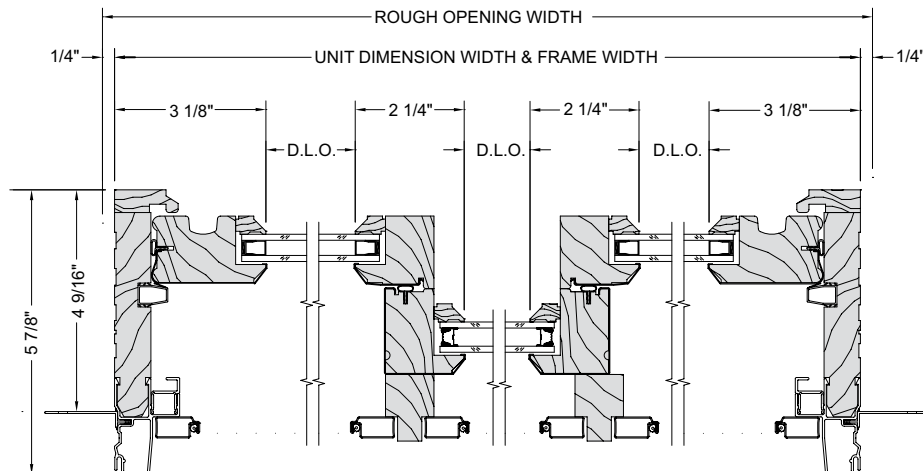
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

## TRIPLE SLIDER CROSS SECTION DRAWINGS

Vertical Section



Horizontal Section



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.



# ULTRA SERIES | PATIO DOORS

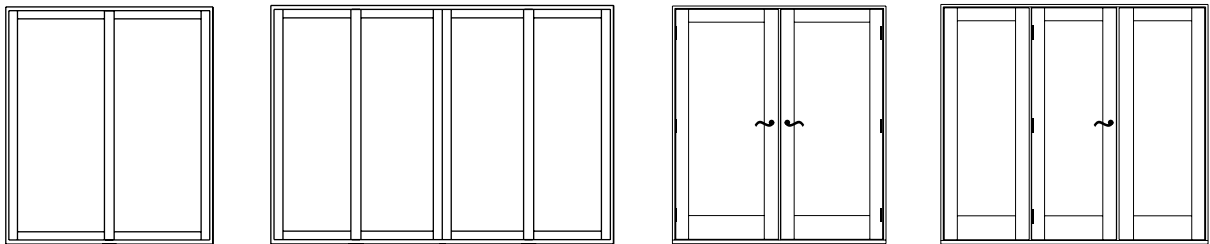
GARDEN-AIRE SLIDING PATIO DOORS

INSWING PATIO DOORS

PATIO DOOR TRANSOMS

FOLDING DOORS

TERRASPACE® LIFT & SLIDE DOORS



Whether it's a passageway to a garden or a creative way to separate an interior space, Ultra Series patio doors bring beauty and elegance to any room. Folding doors and TerraSpan Lift & Slide doors offer the ability to create expansive openings and take your outdoor living space to a whole new level. The ability to coordinate with any decor is simple with many hardware options available in seven different finishes. Add interest to patio doors with matching transoms or radius units.



# ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOORS



## GARDEN-AIRE STANDARD FEATURES

- 1-3/4" thick sash
- Standard jamb width is 4-9/16"
- 3" wide LVL stiles and rails
- Frame setup
- Constructed of pine, with pine interior stops and wood mull casings on muller units
- Tempered, 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .063" thick, 6063 extruded aluminum alloy
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Tandem rollers with adjustable, ball-bearing wheels carry the sliding panel
- Single-point mortise latch with handle set in a Bright Brass finish
- Screens with BetterVue<sup>®</sup> fiberglass mesh and extruded aluminum frames
- One-piece, protruded fiberglass sill with continuous aluminum sill nosing and fiberglass sill filler
- Thick oak interior threshold
- Heavy vinyl nailing fins with head drip caps\*\*

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.



Vinyl nailing fin  
applied as standard  
to units without  
brickmould



## HARDWARE

As standard, a single-point mortise latch is factory-applied to each Garden-Aire sliding patio door, with a Bright Brass handle set shipped for field installation. A multi-point lock and handle is also available. Handle sets and finish options are shown below.



	Bright Brass	Antique Brass	Satin Nickel	Antique Nickel	Oil-rubbed*	Rustic Umber	Matte Black
Standard Handle							
Multi-point Handle							

\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

## GARDEN-AIRE OPTIONAL FEATURES

GLASS (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Triple Pane
- Patterned-, bronze- or gray-lite
- Laminated glass
- Other options standard to the industry

DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Panels available with wide stiles and rails (stiles and top rail are 4-5/8", bottom rail is 7-9/16")

- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Handle set and mortise latch in Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber or Matte Black
- Multi-point lock
- Keyed lock
- Secondary security lock
- Corrosion-resistant hardware
- "Ultra" sliding screen with extruded aluminum screen frames and fiberglass mesh
- UltraVue® screen mesh
- Screens with aluminum mesh
- Extension jambs in a wide variety of sizes (shipped loose for field application)
- Galvanized steel installation clips
- High performance or K-Force® impact performance modifications
- Universal design aluminum sill ramp kits

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

## ULTRA SERIES | INSWING PATIO DOORS



### INSWING STANDARD FEATURES

- 1-3/4" thick sash panel, prehung in the 1-5/16" frame
- Standard jamb width is 4-9/16"
- LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- Constructed of pine, with pine interior stops and wood mull casings on mull units
- Tempered, 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .062" thick, 6063 extruded aluminum alloy
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Toronto handle set in a Bright Brass finish
- HLS 9000 stainless steel multi-point locking hardware on single door panels, French doors have a 3-point lock on the active panel and a 2-point lock in the less active panel
- Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in a Gold-painted finish
- "Ultra" sliding screens with BetterVue® fiberglass mesh and extruded aluminum frames
- Bronze-anodized aluminum, self-draining Waterguard™ exterior sill with an oak interior threshold
- Heavy vinyl nailing fins with head drip caps\*\*

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Vinyl nailing fin applied as standard on units without brickmould (not shown)







## INSWING OPTIONAL FEATURES

GLASS (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Laminated glass
- Other options standard to the industry

DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Toronto handle set in Antique Brass, Satin Nickel, Antique Nickel, Matte Black, Rustic Umber or Oil-rubbed\*\* finishes
- München handle set in a Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Matte Black, Rustic Umber or Oil-rubbed\*\* finishes

- 2-point flush bolt lock on less active panel of French doors
- Single-point locking system
- Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber, Matte Black or Stainless Steel finishes
- Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Matte Black or Stainless Steel finishes
- Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Oil-rubbed\*\* or Stainless Steel finishes
- Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass or Oil-rubbed\*\* finishes
- Self-closing, swinging screen includes a spring-loaded lock, fiberglass or aluminum mesh, and aluminum screen frame
- UltraVue® screen mesh
- Factory-applied extension jambs in a variety of sizes
- Thermal handicap sill
- Taller bottom rail for commercial or handicap applications
- Galvanized steel installation clips
- Rustic weatherstripping
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.















\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

# ULTRA SERIES | INSWING PATIO DOORS

## HARDWARE

As standard, Inswing patio doors feature Gold-painted adjustable hinges and a Toronto handle set in Bright Brass. Optional handle sets and hinges are shown below.

	Bright Brass	Antique Brass	Satin Nickel	Antique Nickel	Oil-rubbed*	Rustic Umber	Matte Black
Toronto							
München							

\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

### Adjustable Hinges



Residential, 4" x 4" ball-bearing, with 1/4" radius corners

### Non-Adjustable Hinges



Commercial-grade, 4" x 4" ball-bearing, with square corners

Commercial-grade, 4-1/2" x 4-1/2"

\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.





# ULTRA SERIES | FOLDING DOORS

## FOLDING DOOR STANDARD FEATURES

- 1-3/4" thick sash
- 6-9/16" minimum jamb width
- LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- Frame setup up to 177" wide x 106" tall; all others knocked down
- Constructed of pine with pine interior stops
- Tempered, 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .063" thick, 6063 extruded aluminum alloy
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Bronze weep sill
- Grooved guide rollers with adjustable, ball-bearing wheels carry the folding panels
- Single-point or multi-point mortise latch with handle set in a Bright Brass finish
- 3-point hardware for access door
- Face mounted flush bolt locking hardware on folding panels
- Thick oak interior threshold
- Heavy vinyl nailing fins with head drip caps\*\*

### NOTES:

All measurements are nominal.















\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.



## HARDWARE





Folding doors can have a swing door for easy access. The swing door features a Toronto handle set in Bright Brass as standard. Folding panels have Bright Brass flushbolt hardware as standard.

Inswing Door Handles	Bright Brass	Antique Brass	Satin Nickel	Antique Nickel	Oil-rubbed*	Rustic Umber	Matte Black
Toronto							
München							

Verona  
(Matte Black shown; also available in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-Rubbed\* or Rustic Umber)



\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

Folding Panel Handles	Bright Brass	Chrome	Satin Nickel	Matte Black
Uno				

### Alternate Folding Panel Handle

Aria  
(Satin Nickel shown; also available in Bright Brass, Chrome or Matte Black)



## FOLDING DOOR OPTIONAL FEATURES

**GLASS** (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Laminated glass
- Other options standard to the industry

**DIVIDED LITES** (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

**OTHER OPTIONS:** (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- 2-1/4" thick sash
- Stile and top rail options: 6"
- Bottom rail options: 4-5/8", 6" or 12-5/8"
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)

- Interior casing (pg. 13)
- Single-point hardware for access door
- Black pleated sliding screens available up to 177" wide x 102" tall (frame size)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Toronto Handle set in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber or Matte Black finishes
- München handle set in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber or Matte Black finishes
- Verona handle set in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-Rubbed\*\*, Rustic Umber or Matte Black finishes
- Single point hardware for access door
- Concealed shootbolt locking hardware for folding panels
- Recessed floor track sill (interior)
- Weep sill, bronze anodized finish (exterior)
- Extension jambs in a wide variety of sizes (shipped loose for field application if over 12")
- Galvanized steel installation clips

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.



# ULTRA SERIES | TERRASpan® LIFT & SLIDE DOORS

## TERRASpan LIFT & SLIDE STANDARD FEATURES

- 2-1/4" thick panels with end caps to match color or wood species
- Panels can pocket into a wall or stack together; 90° corner units are also available\*
- 4-5/8" wide stiles and rails provide a large glass area
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Tempered, 1" LoE<sup>2</sup>-270 insulating glass\*\*
- Glazed to the interior
- All interior wood panel parts are preservative-treated
- Stainless steel multi-point locking hardware channels provide corrosion resistance and increased security
- Wheel sets are constructed of 300 series stainless steel (drive bars, wheels, hubs and shafts, rivets, drive pins and link rods) to provide superior corrosion resistance
- Panels available 30"-72" in width and 36"-144" in height
- LS100 removable handle set in Rustic Umber, Bright Brass, Satin Nickel or Oil-rubbed\*\*\*
- Black anodized flush mount weep sill is thermally broken with 1/2" roller cap height
- Black anodized recessed weep sill option with 1/2" roller cap height
- Panels are thermally broken using a .090" thick extruded double-wall aluminum alloy frame press fit to a non-conductive fiberglass core finished on the interior with a solid wood cover
- Fully weatherstripped for a tight seal
- Pocket cover for all pocket doors
- No visible fasteners
- Traditional coped stile and rail joints both interior and exterior
- Glazing bracket is inter-locked and screwed from the interior side of the core and hidden by the interior wood panel cover
- Removable handle
- Up to ten panels in a system

### NOTES:

All measurements are nominal.

\* Curved units are also available; contact your Kolbe dealer for further information and to ask about the availability of other options not shown in this catalog

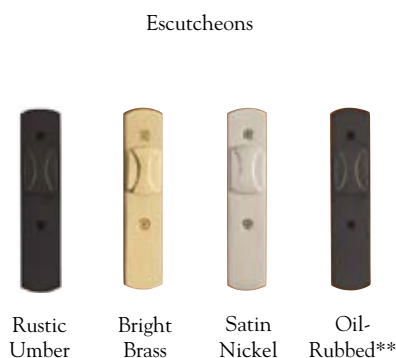
\*\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\*\*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



## HARDWARE

As standard, a stainless steel multi-point locking system provides corrosion resistance and increased security. Standard on the TerraSpan is the interior LS100 removable handle set, which is available in Rustic Umber, Bright Brass, Satin Nickel or Oil Rubbed\* finishes. The LS300 is an optional handle, also available in a variety of finish options. Double fixed handles (fixed handles on interior and exterior) or single fixed handles (on interior) can be utilized in some designs.



(Also available in Bright Brass and Oil-Rubbed\*\*)

## LIFT & SLIDE OPTIONAL FEATURES

GLASS (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Laminated glass
- Other options standard to the industry

DIVIDED LITES (pgs. 8-9):

- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile interior wood cover (pg. 9)
- Interior prefinishing (pg. 11)
- Flush non-weep sill for all sill types
- LS300 removable handle set in Rustic Umber, Bright Brass, Satin Nickel or Oil-rubbed\*\*
- LS100 or LS300 available in fixed, double fixed and with or without a key knob or interior knob only

- Keyed cylinders
- Corrosion-resistant hardware
- Phantom® motorized executive screen
- Genius Screen
- Centor Screen
- Accordion Screen
- Pre-installed jamb jacks with color matched screw covers
- High performance or K-Force® impact performance modifications
- 3/16" roller cap height (recessed only) available weeping or non-weeping\*\*\*
- Interior flush sill nosing extensions
- 8-11/16" bottom rail height to match other Kolbe products
- Edge pull in Rustic Umber, Bright Brass, Satin Nickel, Oil-rubbed\*\* or Black
- Wall holding plate for removable handle in Rustic Umber, Bright Brass, Satin Nickel or Oil-Rubbed\*\*
- Double fixed handles (on interior & exterior)
- Single fixed handles (on interior)
- Finger pull in Bright Brass, Satin Nickel or Oil-rubbed\*\*
- 12" bottom rail height for meeting ADA compliance

### NOTES:

All measurements are nominal.

Units with panel sizes wider than 72" and/or taller than 144" are available on a project-by-project basis, subject to review.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

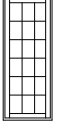
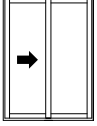
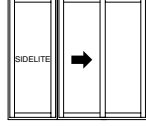
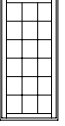
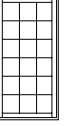
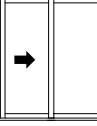
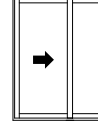
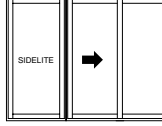
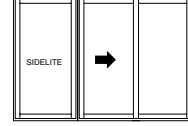
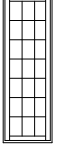
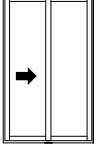
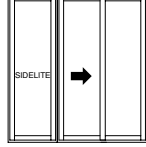
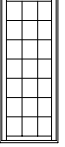
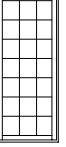
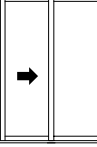
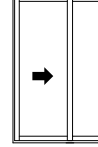
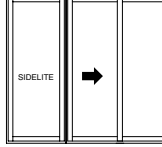
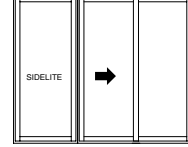
\*\* The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

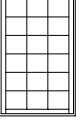
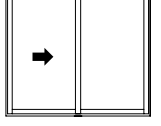
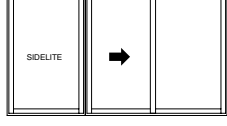
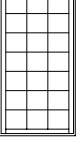
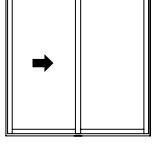
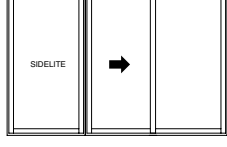
\*\*\* Units with a 3/16" roller cap height will not meet performance requirements.



# ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

## GARDEN-AIRE SLIDING PATIO DOORS

F.S.	2'-8 1/2"	5'-0"	7'-8 1/2"	3'-2 1/2"	3'-5 1/2"	6'-0"	6'-6"	9'-2 1/2"	9'-11 1/2"
R.O.	2'-9"	5'-0 1/2"	7'-9"	3'-3"	3'-6"	6'-0 1/2"	6'-6 1/2"	9'-3"	10'-0"
G.S.	25 1/4"	25 1/4"	25 1/4"	31 1/4"	31 1/4"	31 1/4"	31 1/4"	31 1/4"	31 1/4"
6'-10 7/16"									
6'-10 15/16"									
8'-2 7/16"									
8'-2 15/16"									

F.S.	4'-2 1/2"	8'-0"	12'-2 1/2"
R.O.	4'-3"	8'-0 1/2"	12'-3"
G.S.	43 1/4"	43 1/2"	43 1/2"
6'-10 7/16"			
6'-10 15/16"			
8'-2 7/16"			
8'-2 15/16"			

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to Panel O.S.M.	+1/2" ±2	-2 3/4"
Panel O.S.M. to G.S.	-5"	-4 11/16"
G.S. to D.L.O.	-1"	-1"

#### NOTES:

Clear opening dimensions can be found on pg. 188.

Contact your supplier for 4-wide Garden-Aire dimension calculations.

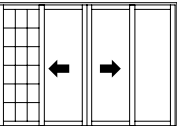
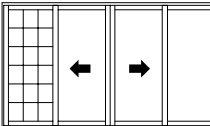
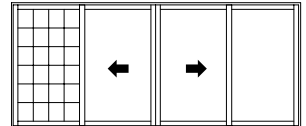
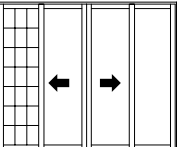
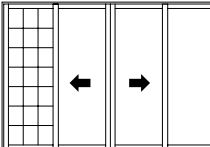
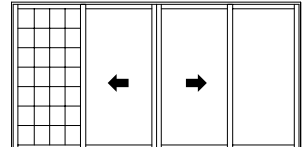
Elevation charts provide frame sizes for units without brickmould.

Below are the calculations to determine overall unit dimensions for units with brickmould.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 5/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+2 3/4"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+3 1/2"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

## 4-WIDE GARDEN-AIRE SLIDING PATIO DOORS

F.S.	9'-10 5/16"	11'-10 5/16"	15'-10 5/16"
R.O.	9'-10 13/16"	11'-10 13/16"	15'-10 13/16"
G.S.	25 1/4"	31 1/4"	43 1/4"
6'-10 7/16"			
6'-10 15/16"			
8'-2 7/16"			
8'-2 15/16"			

#### NOTES:

All measurements are nominal. Elevation charts are not to scale. Operation is viewed from the exterior. Standard operation is shown. Please specify if other operating configurations are needed.

Divided lites are optional. The divided lite configuration shown for a single panel is typical for each panel. Divided lite configurations for wide stile units are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size

R.O. = Rough Opening

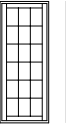
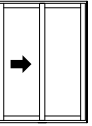
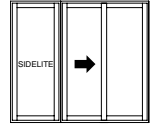
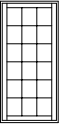
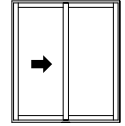
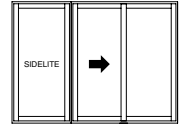
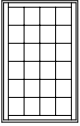
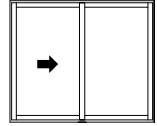
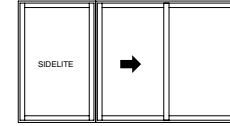
G.S. = Glass Size (Glass sizes are shown per panel.)

# ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

## GARDEN-AIRE SLIDING PATIO DOORS | REMODELING SIZES

F.S.	2'-8"	4'-11"	7'-7"	3'-2"	5'-11"	9'-1"	4'-2"	7'-11"	12'-1"
R.O.	2'-8 1/2"	4'-11 1/2"	7'-7 1/2"	3'-2 1/2"	5'-11 1/2"	9'-1 1/2"	4'-2 1/2"	7'-11 1/2"	12'-1 1/2"
G.S.	24 3/4"	24 3/4"	24 3/4"	30 3/4"	30 3/4"	30 3/4"	42 3/4"	42 3/4"	42 3/4"

6'-7 15/16" 6'-8 7/16" 72 1/2"									
	GAU2866	GAU41166	GAU7766	GAU3266	GAU51166	GAU9166	GAU4266	GAU71166	GAU12166

### NOTES:

All measurements are nominal. Elevation charts are not to scale. Operation is viewed from the exterior. Standard operation is shown. Please specify if other operating configurations are needed. Divided lites are optional. The divided lite configuration shown for a single panel is typical for each panel. Divided lite configurations for wide stile units are different.



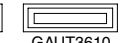


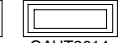
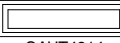
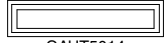













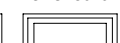







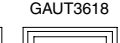
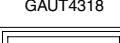
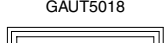
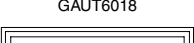
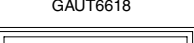
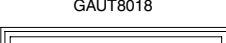


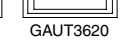
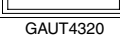
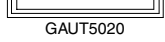
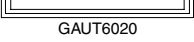
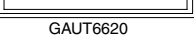

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size

R.O. = Rough Opening

G.S. = Glass Size (Glass sizes are shown per panel.)

## GARDEN-AIRE | RECTANGULAR TRANSOMS

F.S.	2'-8 1/2"	3'-2 1/2"	3'-5 1/2"	4'-2 1/2"	5'-0"	6'-0"	6'-6"	8'-0"
R.O.	2'-9"	3'-3"	3'-6"	4'-3"	5'-0 1/2"	6'-0 1/2"	6'-6 1/2"	8'-0 1/2"
G.S.	25 7/8"	31 7/8"	34 7/8"	43 7/8"	53 3/8"	65 3/8"	71 3/8"	89 3/8"
11 1/2"								
1'-0"	GAUT2910	GAUT3310	GAUT3610					
1'-4"								
8 7/8"	GAUT2914	GAUT3314	GAUT3614	GAUT4314	GAUT5014	GAUT6014	GAUT6614	GAUT8014
1'-5 1/2"								
1'-6"	GAUT2916	GAUT3316	GAUT3616	GAUT4316	GAUT5016	GAUT6016	GAUT6616	GAUT8016
1'-8"								
12 7/8"	GAUT2918	GAUT3318	GAUT3618	GAUT4318	GAUT5018	GAUT6018	GAUT6618	GAUT8018
1'-11 1/2"								
2'-0"	GAUT2920	GAUT3320	GAUT3620	GAUT4320	GAUT5020	GAUT6020	GAUT6620	GAUT8020
16 7/8"								
2'-5 1/2"	GAUT2926	GAUT3326	GAUT3626	GAUT4326	GAUT5026	GAUT6026	GAUT6626	GAUT8026
2'-6"								
22 7/8"								

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Rectangular transom units are sash set as standard. The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lite configurations must be specified when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

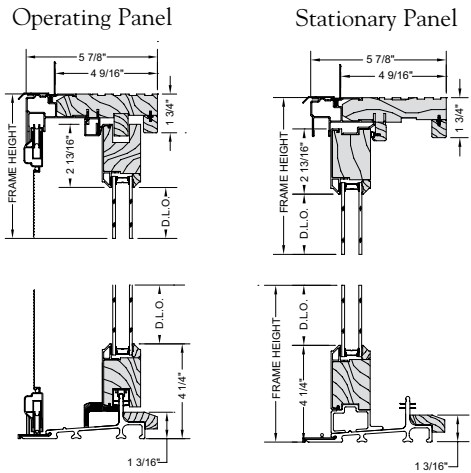
F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

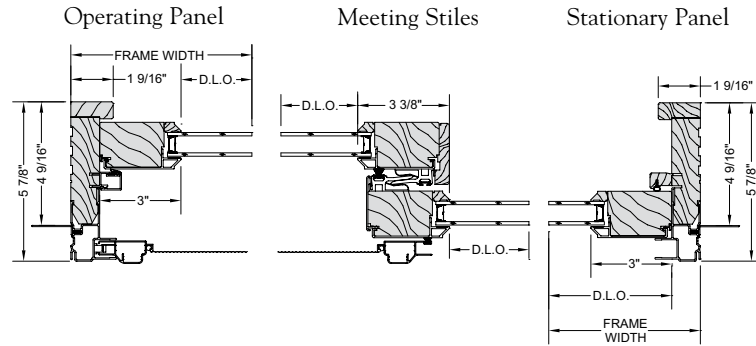
## GARDEN-AIRE CROSS SECTION DRAWINGS

### Standard Garden-Aire

#### Vertical Section

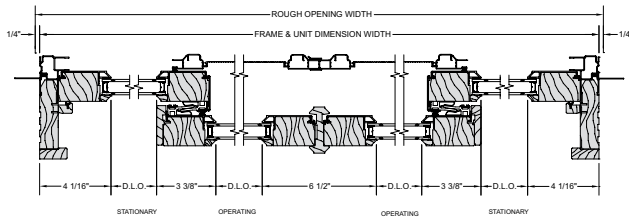


#### Horizontal Section



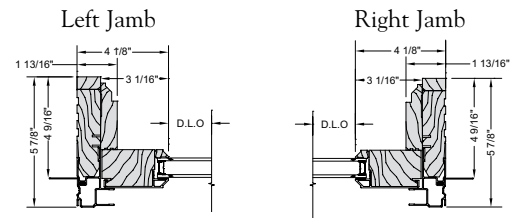
### 4-WIDE GARDEN-AIRE

#### Standard Horizontal Section

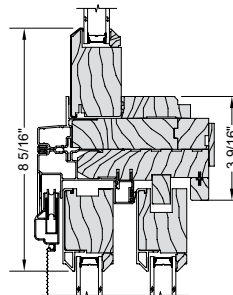


### GARDEN-AIRE WITH SIDELITE

#### Standard Horizontal Section



### RECTANGULAR TRANSOM OVER GARDEN-AIRE



#### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

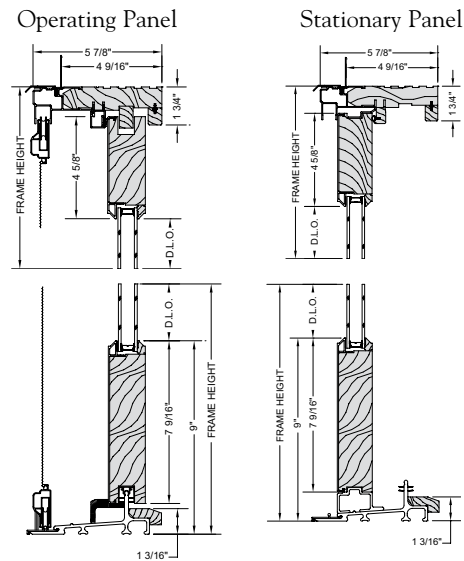
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

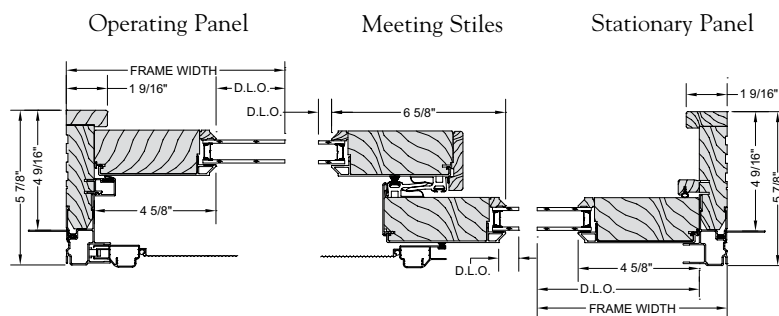
# ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

## WIDE-STILE GARDEN-AIRE

### Vertical Section



### Horizontal Section



NOTE: Drawings are not to scale.

# ULTRA SERIES | INSWING PATIO DOORS

## INSWING PATIO DOORS

F.S.	2'-6 1/4"	4'-11 7/16"	4'-11 7/16"	7'-4 5/8"	7'-4 5/8"	3'-0 1/4"	5'-11 7/16"	5'-11 7/16"	8'-10 5/8"	8'-10 5/8"
R.O.	2'-6 3/4"	4'-11 15/16"	4'-11 15/16"	7'-5 1/8"	7'-5 1/8"	3'-0 3/4"	5'-11 15/16"	5'-11 15/16"	8'-11 1/8"	8'-11 1/8"
G.S.	20 5/16"	20 5/16"	20 5/16"	20 5/16"	20 5/16"	26 5/16"	26 5/16"	26 5/16"	26 5/16"	26 5/16"
6'-7 1/2"										
6'-8"										
65 11/16"										
7'-11 5/8"										
8'-0 1/8"										
81 3/4"										
	SPU2666	SPU41166AS	SPU41166SA	SPU7566SASR	SPU7566SASL	SPU3066	SPU51166AS	SPU51166SA	SPU81166SASR	SPU81166SASL
	SPU2680	SPU41180AS	SPU41180SA	SPU7580SASR	SPU7580SASL	SPU3080	SPU51180AS	SPU51180SA	SPU81180SASR	SPU81180SASL

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Operation is viewed from the interior. When ordering single units, specify stationary, hinged left or hinged right.

Divided lites are optional. The divided lite configuration shown for a single panel is typical for each panel in the unit.

Additional swinging door sizes are available in the Entrance Door section.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per panel.)

## DIMENSION CALCULATIONS

	WIDTH	HEIGHT
FS. to Panel O.S.M. (1-wide, active)	-1 13/16"	-2 23/32"
(1-wide, stationary)	-1 3/4"	-2 23/32"
(2-wide)	-2 9/16" ÷ 2	-2 23/32"
(3-wide)	-3 15/16" ÷ 3	-2 23/32"
Panel O.S.M. to G.S.	-8 1/8"	-11 3/32"
G.S. to D.L.O.	-1"	-1"

NOTE: Dimension calculations for transoms may be obtained from your supplier. Clear opening dimensions can be found on pg. 188.

Elevation charts provide frame sizes for units without brickmould.

Below are the calculations to determine overall unit dimensions for units with brickmould.

1 15/16" brickmould; FS. to U.D.	+2 5/8"	+1 5/16"
3 1/2" flat or profiled casing; FS. to U.D.	+5 1/2"	+2 3/4"
3 1/2" flat casing & backband; FS. to U.D.	+7"	+3 1/2"

FS. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension



# ULTRA SERIES | INSWING PATIO DOORS

## INSWING PATIO DOORS | FRENCH DOORS

	F.S.	4'-11 7/16"		5'-11 7/16"	
		4'-11 15/16"		5'-11 15/16"	
		20 5/16"		26 5/16"	
R.O.		4'-11 15/16"		5'-11 15/16"	
G.S.		20 5/16"		26 5/16"	
6'-7 1/2"	6'-8"				
	65 11/16"				
		SPFU41166AL	SPFU41166AR	SPFU51166AL	SPFU51166AR
7'-11 5/8"	8'-0 1/8"				
	81 3/4"				
		SPFU41180AL	SPFU41180AR	SPFU51180AL	SPFU51180AR

## INSWING PATIO DOORS | RECTANGULAR TRANSOMS

	F.S.	2'-6 1/4"	3'-0 1/4"	4'-11 7/16"	5'-11 7/16"
		2'-6 3/4"	3'-0 3/4"	4'-11 15/16"	5'-11 15/16"
		24 3/4"	30 3/4"	53 15/16"	65 15/16"
R.O.		2'-6 3/4"	3'-0 3/4"	4'-11 15/16"	5'-11 15/16"
G.S.		24 3/4"	30 3/4"	53 15/16"	65 15/16"
1'-11 1/2"	1'-0"				
	6"	SPUT2610	SPUT3010	SPUT41110	SPUT51110
1'-3 1/2"	1'-4"				
	10"	SPUT2614	SPUT3014	SPUT41114	SPUT51114
1'-5 1/2"	1'-6"				
	12"	SPUT2616	SPUT3016	SPUT41116	SPUT51116
1'-7 1/2"	1'-8"				
	14"	SPUT2618	SPUT3018	SPUT41118	SPUT51118
1'-11 1/2"	2'-0"				
	18"	SPUT2620	SPUT3020	SPUT41120	SPUT51120
2'-5 1/2"	2'-6"				
	24"	SPUT2626	SPUT3026	SPUT41126	SPUT51126

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Operation is viewed from the interior.

Divided lites are optional. The divided lite configuration shown for a single panel is typical for each panel in the unit.

Additional swinging door sizes are available in the Entrance Door section.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

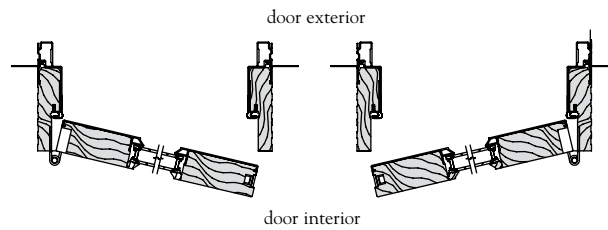
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per panel.)

HINGING FOR INSWING PATIO DOOR

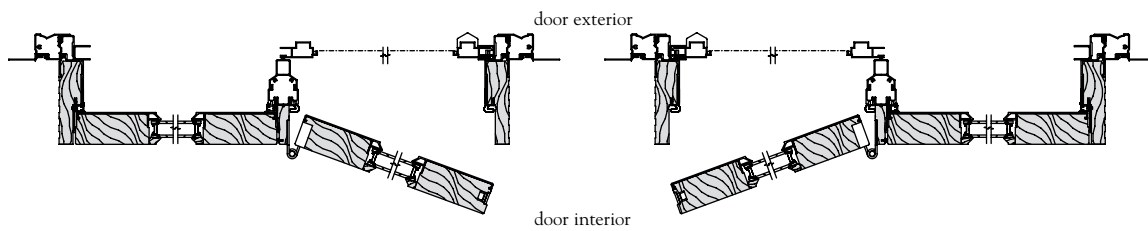
HL (Hinged Left)

HR (Hinged Right)



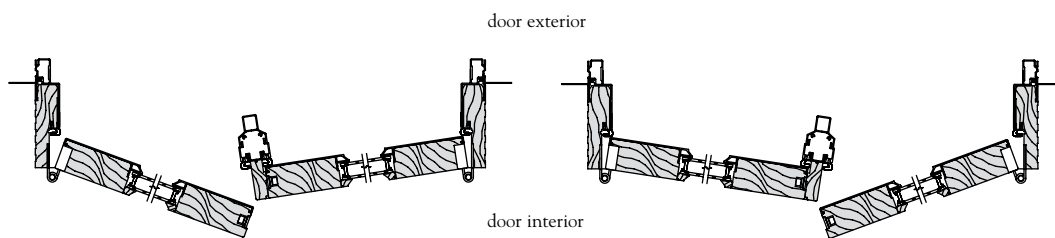
SAL (Stationary, Active Hinged Left)

ASR (Active Hinged Right, Stationary)



AL (French, Hinged Left, Active)

AR (French, Hinged Right, Active)



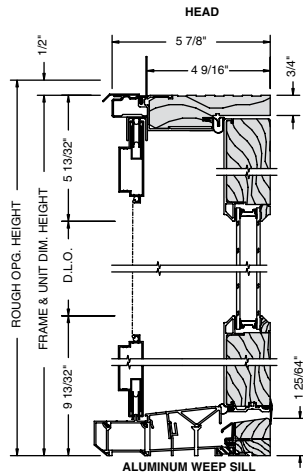
NOTE: Drawings are not to scale.

# ULTRA SERIES | INSWING PATIO DOORS

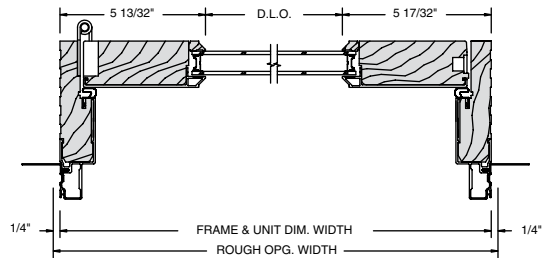
## INSWING PATIO DOOR CROSS SECTION DRAWINGS

### Standard Inswing

Vertical Section

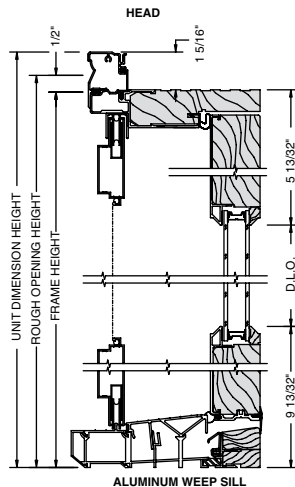


Horizontal Section

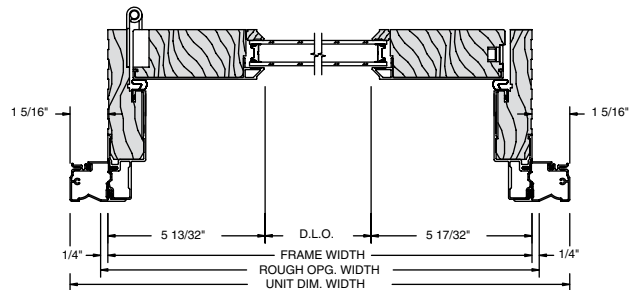


### Inswing with 1-15/16" Brickmould

Vertical Section



Horizontal Section



#### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

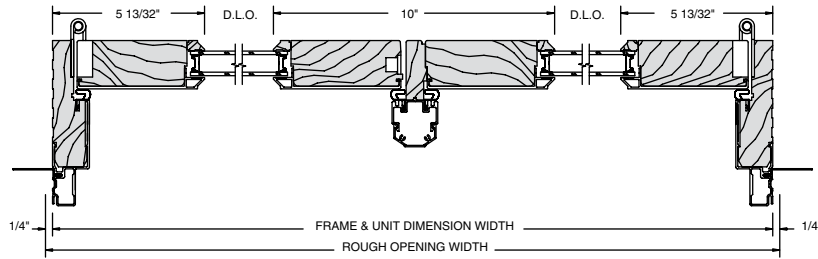
Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

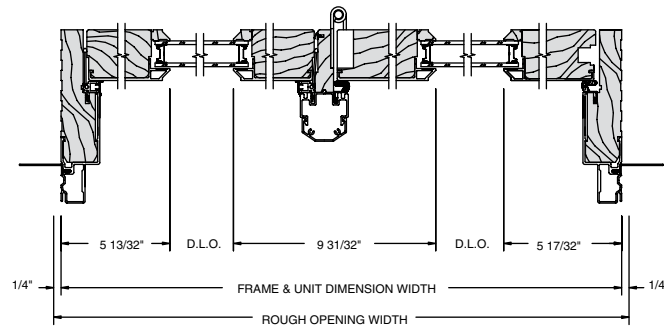
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

# ULTRA SERIES | INSWING PATIO DOORS

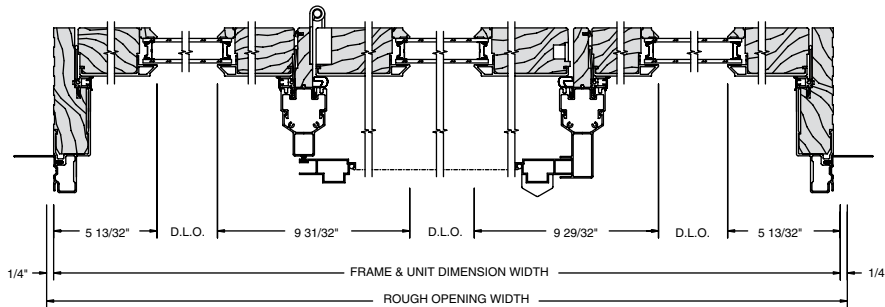
## TWO-WIDE INSWING PATIO FRENCH DOOR



## TWO-WIDE INSWING PATIO DOOR - ACTIVE/STATIONARY

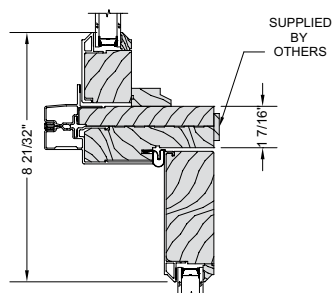


## THREE-WIDE INSWING PATIO DOOR

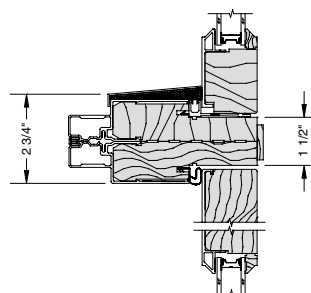


## RECTANGULAR TRANSOM STACKED OVER INSWING PATIO DOOR

### Standard

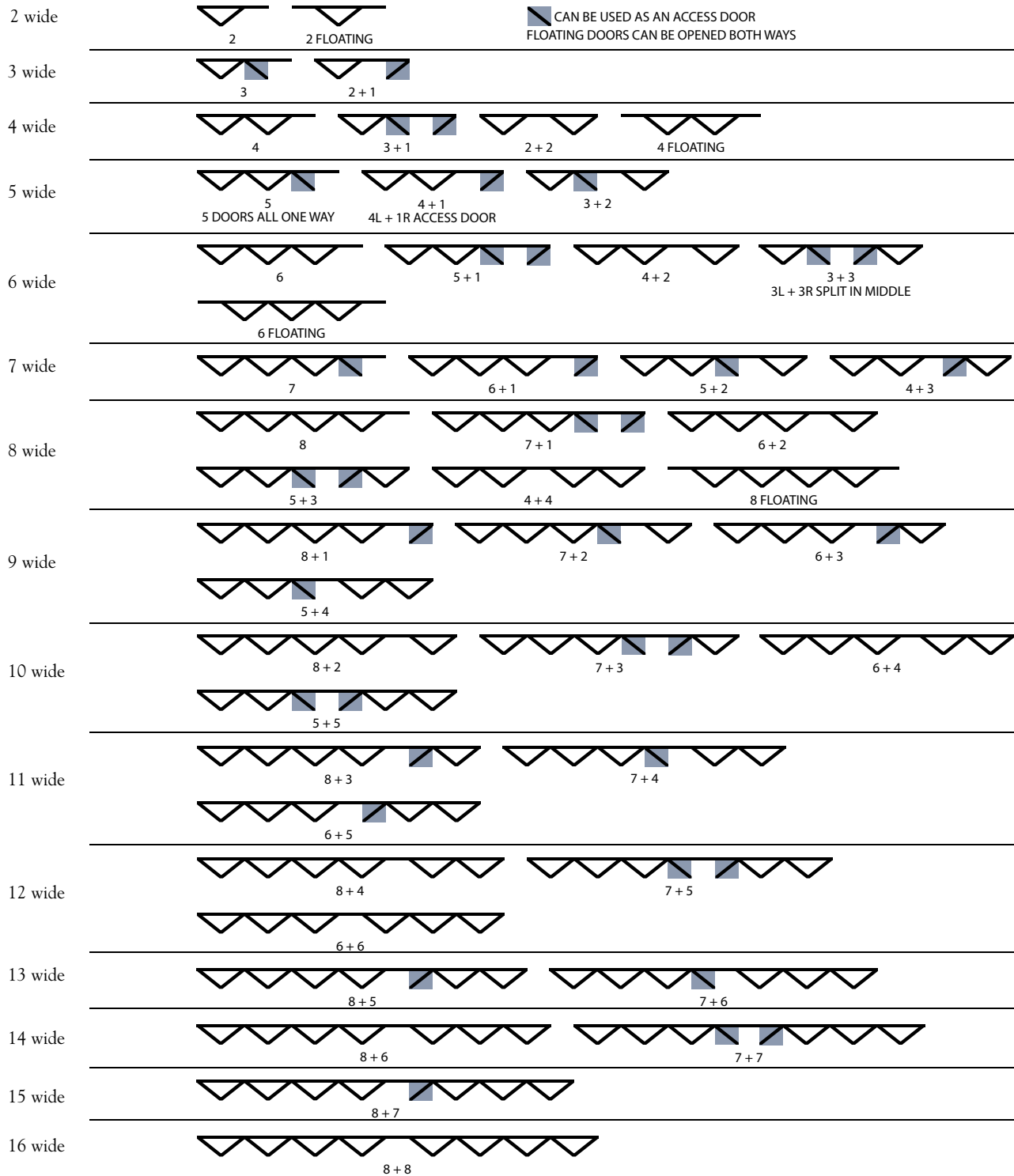


### Optional



NOTES:  
Drawings are not to scale.  
Operation is viewed from the interior.

# ULTRA SERIES FOLDING DOORS



## NOTES:

Folding doors are shown as outswing operation.

There is a maximum of 8 panels per side.

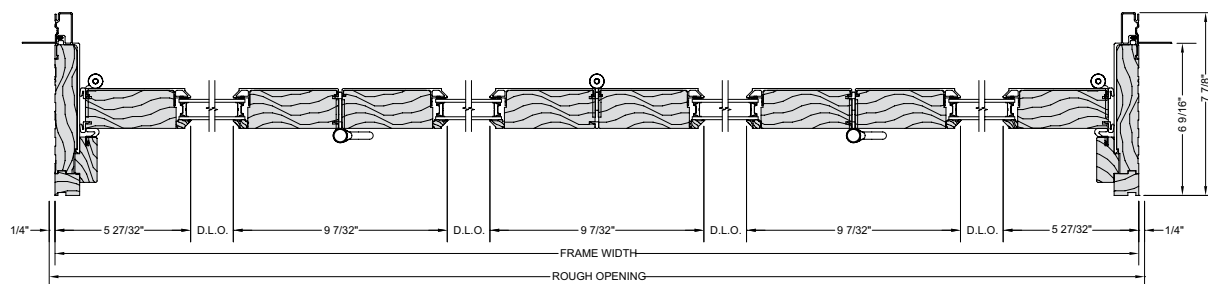
Access door configuration will have a swing door hinged off of one of the sides of the frame or off of another panel, depending on the configuration chosen. Configurations can be reversed.

The configurations and grille patterns shown above are an overview of what is available. Contact your Kolbe dealer for more information.

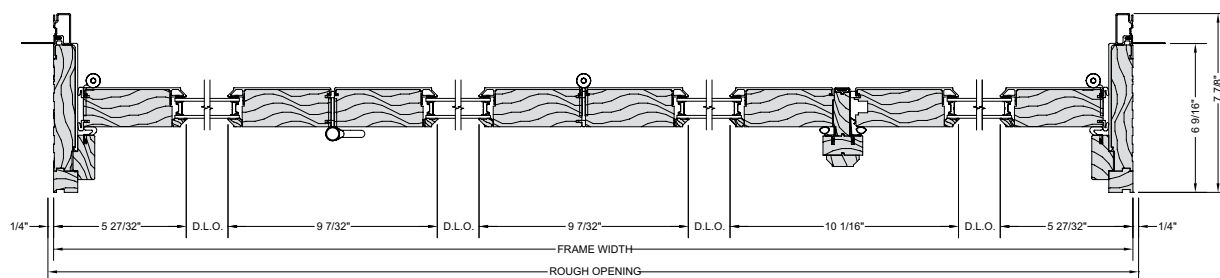


# ULTRA SERIES | FOLDING DOORS

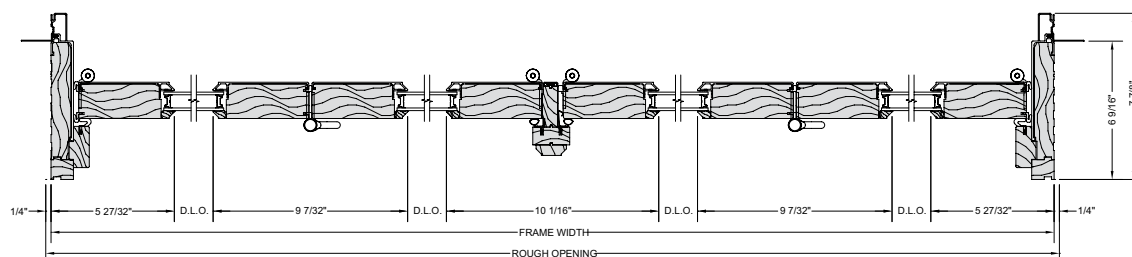
## FOUR-WIDE: FOLDING ONE-WAY



## FOUR-WIDE: ONE LEFT & THREE RIGHT



## FOUR-WIDE: TWO LEFT & TWO RIGHT



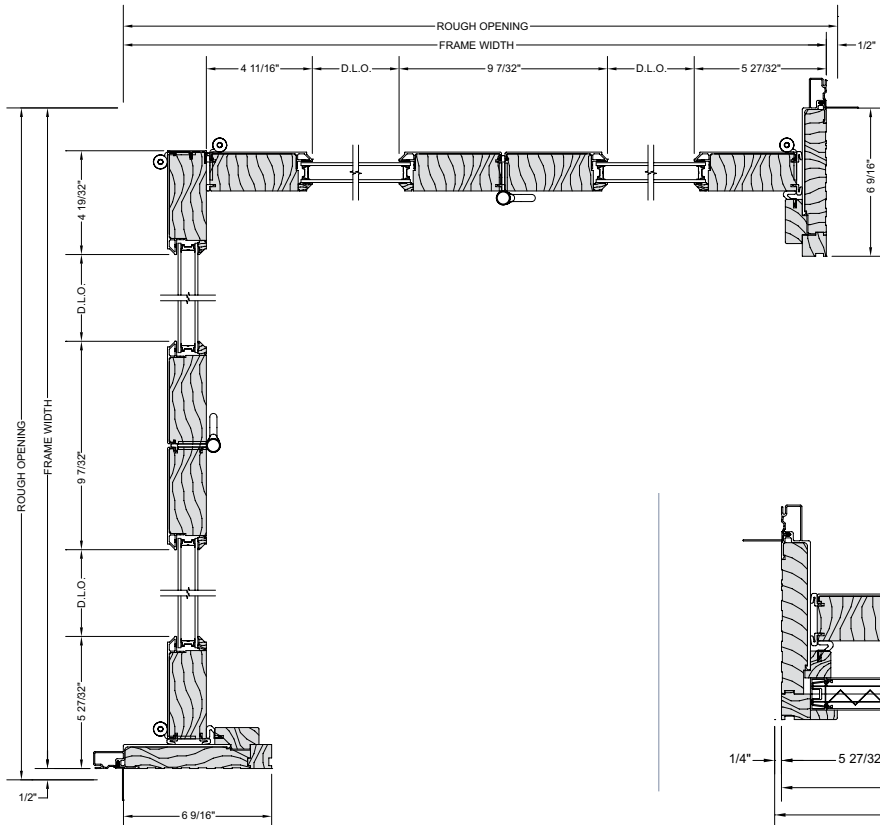
### NOTES:

Drawings are not to scale.

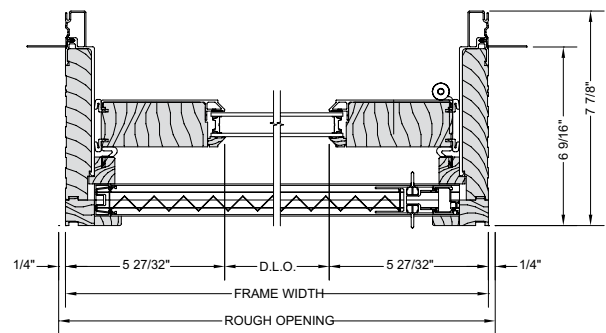
Operation is viewed from the exterior.

# ULTRA SERIES | FOLDING DOORS

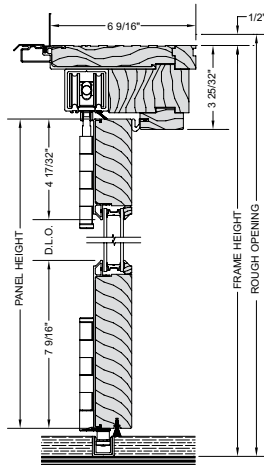
## CORNER UNIT



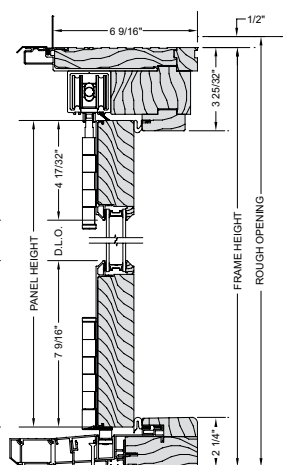
## ONE WIDE WITH SCREEN



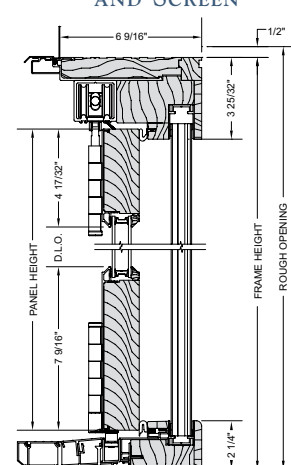
## 1.75 PANEL WITH RECESSED SILL



## 1.75 PANEL WITH WEEP SILL



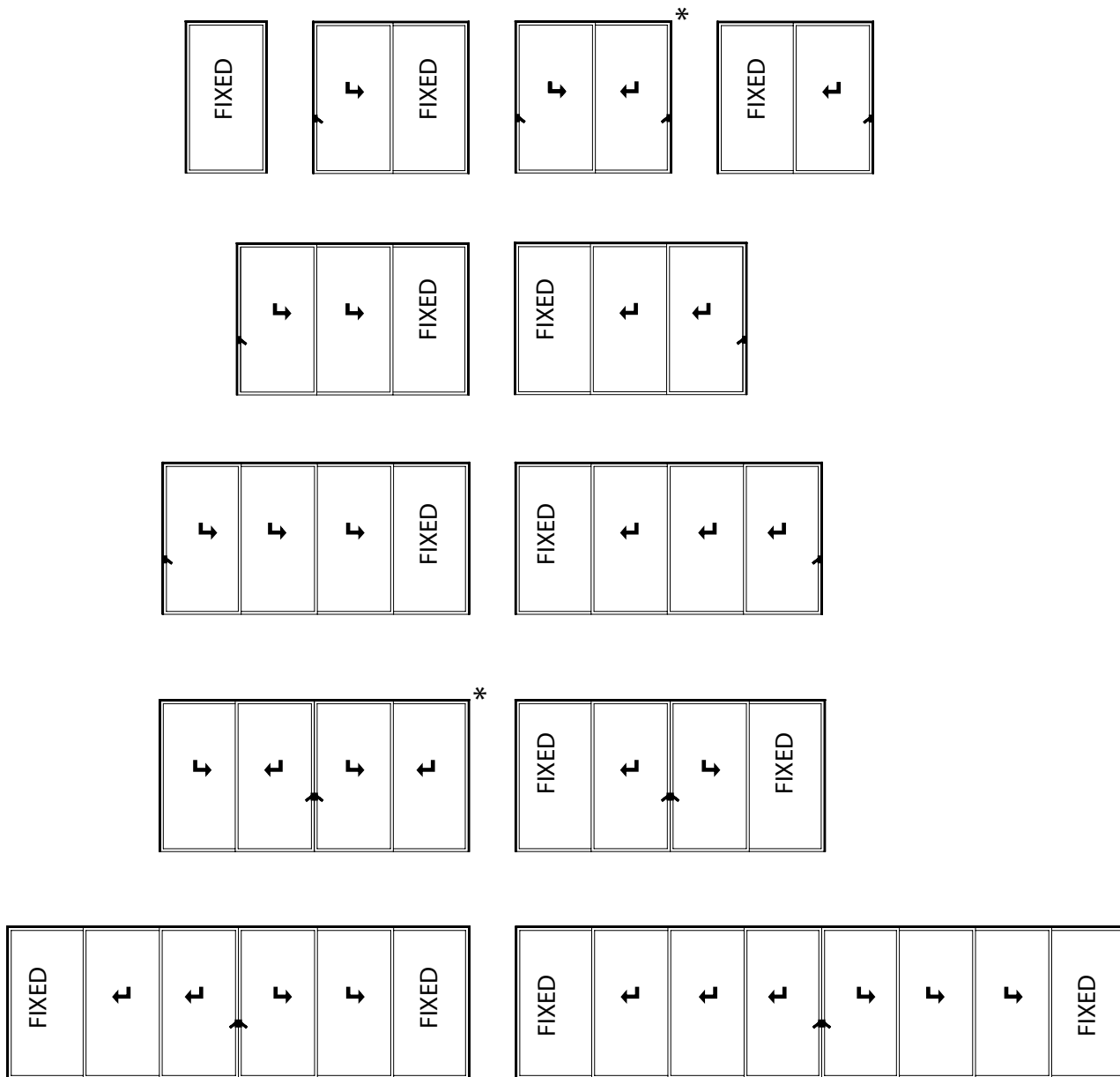
## 1.75 PANEL WITH WEEP SILL AND SCREEN



NOTE: Drawings are not to scale.

# ULTRA SERIES

There are over 900 different operational configurations available for the Ultra TerraSpan Lift & Slide. Only a few are illustrated below (viewed from the interior). There is a maximum of 10 panels per unit. Panel width is a minimum of 30" with a maximum of 72", while panel height is a minimum of 78" with a maximum of 144". Pocketing lift and slides will not have a stationary panel on the end(s) of the operating unit. Talk with your local Kolbe dealer to learn about the different possibilities.



## DIMENSION CALCULATIONS

Dimension calculation formulas for TerraSpan units vary depending on the unit and application. Please contact your Kolbe supplier if formulas are needed.

NOTES:

\*Panel design is not available in a pocketing lift and slide.

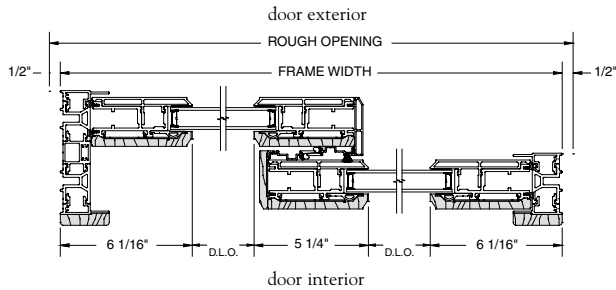
Drawings are not to scale.

# ULTRA SERIES | TERRASpan® LIFT & SLIDE DOORS

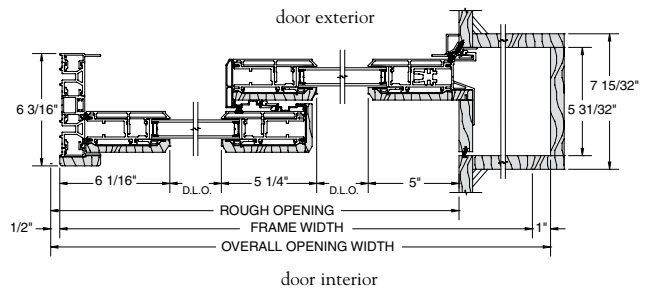
## LIFT & SLIDE CROSS SECTION DRAWINGS

### Horizontal Section

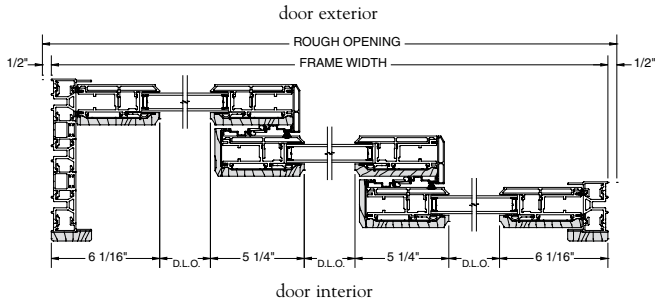
#### 2-WIDE STACKING RECESSED SILL DETAIL



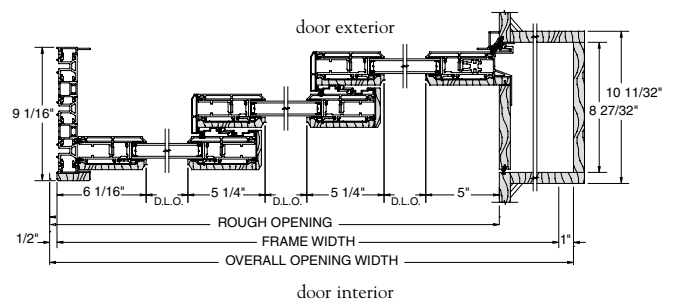
#### 2-WIDE POCKETING FLUSH SILL DETAIL



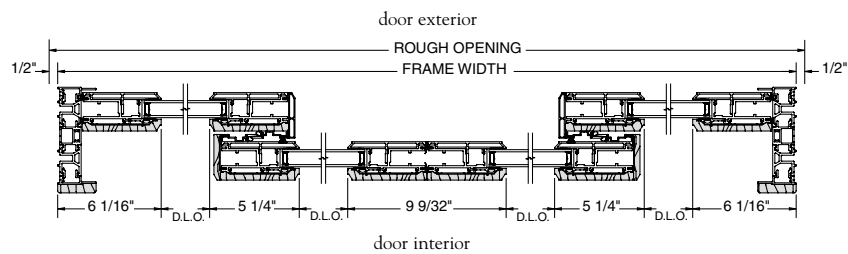
#### 3-WIDE STACKING RECESSED SILL DETAIL



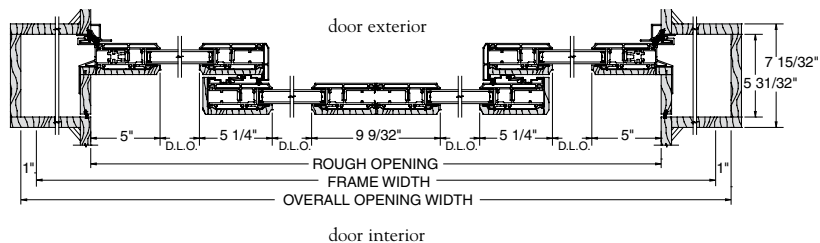
#### 3-WIDE POCKETING FLUSH SILL DETAIL



#### 4-WIDE STACKING CENTER-OPENING\*



#### 4-WIDE POCKETING CENTER-OPENING\*

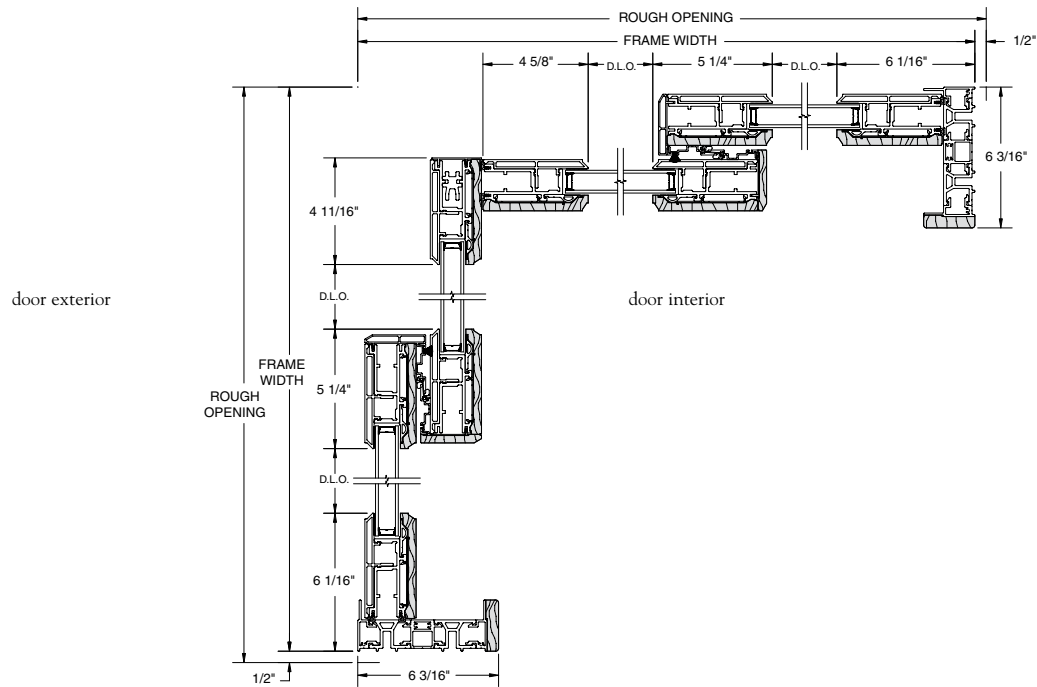


\*There is no difference in the horizontal section details between a flush sill and a recessed sill for center-operating units.

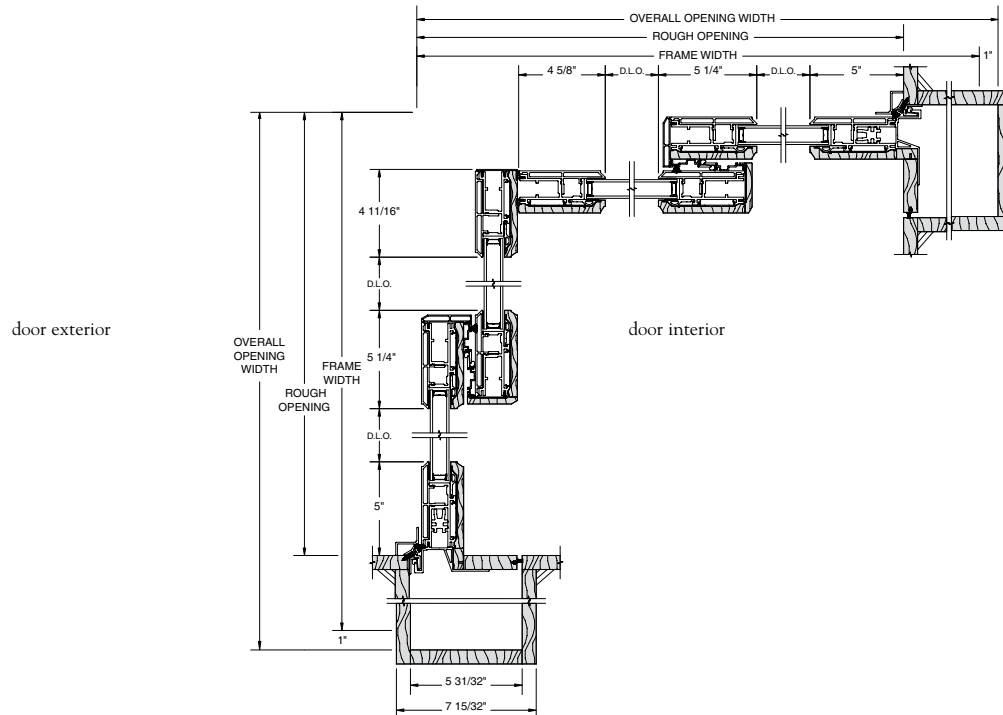
# ULTRA SERIES | TERRASpan® LIFT & SLIDE DOORS

## Horizontal Section

### 90° WITH JAMBS



### 90° WITH POCKETS



#### NOTES:

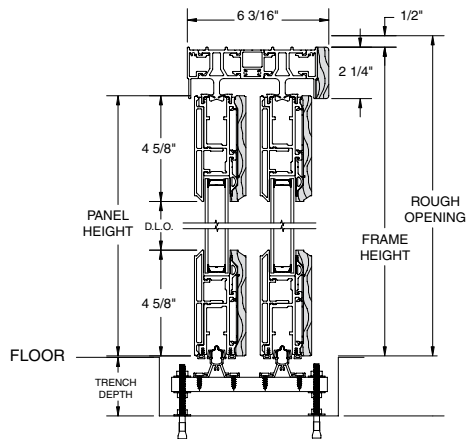
Drawings are not to scale.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com)

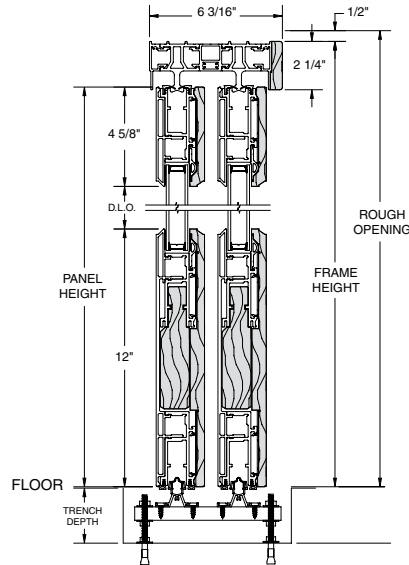


Vertical Section

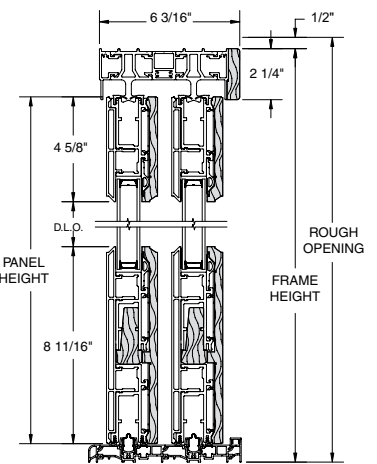
RECESSED SILL  
(4-5/8" BOTTOM RAIL HEIGHT)



RECESSED SILL  
(12" BOTTOM RAIL HEIGHT)



FLUSH SILL  
(8-11/16" BOTTOM RAIL HEIGHT)



NOTE: Drawings are not to scale.



# ULTRA SERIES | ENTRANCE DOORS

INSWING ENTRANCE DOORS

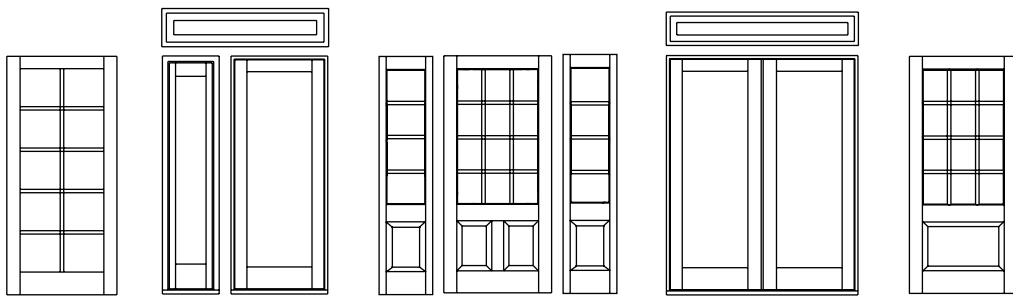
OUTSWING ENTRANCE DOORS

SEGMENT HEAD DOORS

RAISED PANEL DOORS

ENTRANCE DOOR SIDELITES

ENTRANCE DOOR TRANSOMS



Set the tone for home or business with Ultra Series entrance doors. Inswing and outswing doors are available in a variety of styles including raised panel, French and segment head doors. Add a transom and sidelites to complete the look of your grand entrance.

# ULTRA SERIES | INSWING ENTRANCE DOORS



## INSWING ENTRANCE DOOR STANDARD FEATURES

- 1-3/4" thick sash panel prehung in the 1-5/16" frame
- Standard jamb width is 4-9/16"
- LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- Constructed of pine, with pine interior stops and wood mull casings on mulled units
- Tempered, 7/8" LoE<sup>2</sup>-270 insulating glass; 5/8" on doors with raised panels (except those with PDL)\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .062" thick, 6063 extruded aluminum alloy (except raised panels, which are covered with .040" thick, 1100 aluminum alloy)
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in a Gold-painted finish
- Bronze-anodized aluminum, self-draining Waterguard™ exterior sill with an oak interior threshold
- Heavy vinyl nailing fins with head drip caps\*\*
- Raised panels and/or glass lites

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Vinyl nailing fin  
applied as standard  
on units without  
brickmould







## INSWING ENTRANCE DOOR OPTIONAL FEATURES

GLASS (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Finely crafted glass in predetermined or custom patterns (not available with argon gas)
- Laminated glass
- Other options standard to the industry

DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- 2-1/4" thick door panels
- Panels available with 12-5/8" bottom rail and 6" stiles and top rail
- Flat panel option available
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Toronto or München handle set in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Matte Black, Rustic Umber or Oil-rubbed\*\* finishes

- HLS 9000 stainless steel multi-point locking hardware on single door panels
- 3-point lock on the active panel of French doors and 2-point flush bolt lock on less active panel
- Single-point locking system
- Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Brass, Antique Brass, Rustic Umber, Brushed Chrome, Satin Nickel, Antique Nickel, Matte Black, Rustic Umber or Oil-rubbed\* finishes
- Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Bright Brass, Antique Brass, Stainless Steel, Satin Nickel, Antique Nickel, Matte Black or Oil-rubbed\* finishes
- Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel or Oil-rubbed\*\* finishes
- Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass or Oil-rubbed\*\* finishes
- Self-closing, swinging screen includes a spring-loaded lock, BetterVue® fiberglass or aluminum mesh, and aluminum screen frame
- UltraVue® screen mesh
- Extension jambs in a variety of sizes
- Oak and mahogany sills
- Thermal or non-thermal handicap sills
- Galvanized steel installation clips
- Rustic weatherstripping
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.



# ULTRA SERIES | OUTSWING ENTRANCE DOORS



## OUTSWING ENTRANCE DOOR STANDARD FEATURES

- 1-3/4" thick sash panel prehung in the 1-1/16" frame with a 1/2" rabbeted-in stop
- Standard jamb width is 4-9/16"
- LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- Constructed of pine, with pine interior stops and wood mull casings on muller units
- Tempered, 7/8" LoE<sup>2</sup>-270 insulating glass, 5/8" on doors with raised panels (except those with PDL)\*
- Glazed to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .062" thick, 6063 extruded aluminum alloy (when design contains raised panel, the raised panel is covered with .040" thick, 1100 extruded aluminum alloy)
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Fully weatherstripped for a tight seal
- Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in a Bright Brass finish
- Bronze-anodized aluminum bumper sill with oak interior threshold
- Heavy vinyl nailing fins with head drip caps\*\*
- Raised panels and/or glass lites

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.



Vinyl nailing fin  
applied as standard  
to units without  
brickmould





## OUTSWING ENTRANCE DOOR OPTIONAL FEATURES

### GLASS (pgs. 6-7): (all door glass is tempered)

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermoPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Finely crafted glass in pre-determined or custom patterns (not available with argon gas)
- Laminated glass
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- 2-1/4" thick door panels
- Panels available with 12-5/8" bottom rail and 6" stiles and top rail
- Flat panel option available
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)

- Toronto or München handle set in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber or Matte Black finishes
- HLS 9000 stainless steel multi-point locking hardware on single door panels
- 3-point lock on the active panel of French doors and 2-point flush bolt lock on less active panel
- Single-point locking system
- Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Antique Brass, Stainless Steel, Satin Nickel, Antique Nickel, Oil-rubbed\*\* or Matte Black finishes
- Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Gold-painted, Bright Brass, Antique Brass, Brushed Chrome, Satin Nickel, Antique Nickel, Oil-rubbed\*\*, Rustic Umber or Matte Black finishes
- Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel or Oil-rubbed\*\* finishes
- Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright brass or Oil-rubbed\*\* finishes
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Oak bumper sills
- Oak and mahogany sills
- Thermal or non-thermal handicap sills
- Galvanized steel installation clips
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.















\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

# ULTRA SERIES | ENTRANCE DOORS

## HARDWARE

As standard, entrance doors feature Gold-painted adjustable hinges and outswing entrance doors feature Bright Brass 4" x 4" non-adjustable hinges with 1/4" radius corners. Handle sets, boring or locking systems must be requested for entrance doors. The following hinges and handles are available as an option.

	Bright Brass	Antique Brass	Satin Nickel	Antique Nickel	Oil-rubbed*	Rustic Umber	Matte Black
Toronto							
München							

\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.

### Adjustable Hinges



Residential, 4" x 4" ball-bearing, with 1/4" radius corners

### Non-Adjustable Hinges



Commercial-grade, 4" x 4" ball-bearing, with square corners

Commercial-grade, 4-1/2" x 4-1/2"

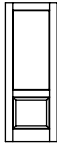
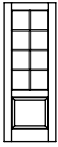
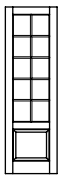

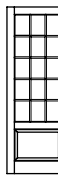
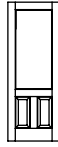
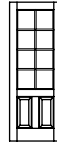
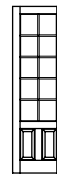


\*The Oil-rubbed finish is a living finish, which means that it will change appearance over time with use.





# ULTRA SERIES | INSWING ENTRANCE DOORS

## INSWING ENTRANCE DOOR SASH WITH PANEL (FLAT OR RAISED) DESIGNS

										
Sash Design#:	UP8110	UP8124	UP8125	UP8134	UP8135	UP8210	UP8224	UP8225	UP8234	UP8235
Product I.D. Code	UXD- 2068 / 4068	✓	✓	N/A	N/A	N/A	✓	✓	N/A	N/A
	UXD- 2668 / 5068	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 2868 / 5468	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 3068 / 6068	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 2070 / 4070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 2670 / 5070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 2870 / 5470	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 3070 / 6070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓
	UXD- 2080 / 4080	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓
	UXD- 2680 / 5080	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓
	UXD- 2880 / 5480	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓
	UXD- 3080 / 6080	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓

### NOTES:

Sash designs shown with divided lites have PDL. If a different divided lite pattern is needed, specify sash design UP8110 or UP8210 and the type of PDL configuration.

Drawings are not to scale.

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to Panel O.S.M. (1-wide, active)	-1 13/16"	-2 23/32"
(1-wide, stationary)	-1 3/4"	-2 23/32"
(2-wide)	-2 9/16"±2	-2 23/32"
(3-wide)	-3 15/16"±3	-2 23/32"
Panel O.S.M. to G.S.	-8 1/8"	-11 3/32"
G.S. to D.L.O.	-1"	-1"

NOTE: Dimension calculations for transoms may be obtained from your supplier. Clear opening dimensions can be found on pg. 188.

Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with brickmould.

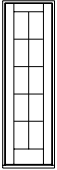
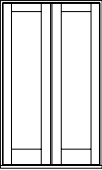
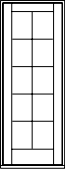
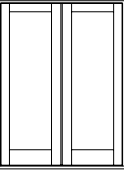
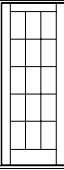
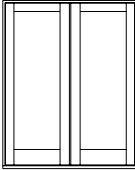
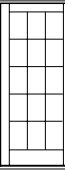
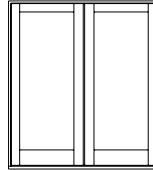
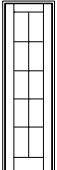
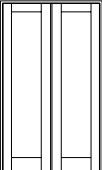
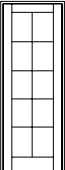

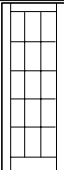
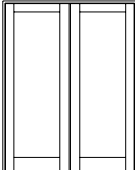
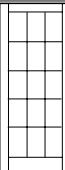
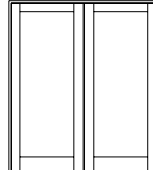
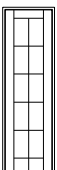
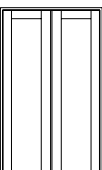
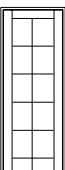
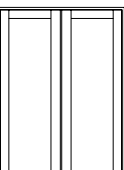
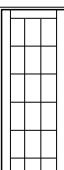
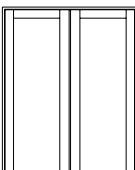
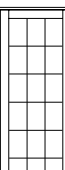
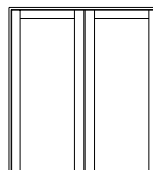
1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 5/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+2 3/4"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+3 1/2"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

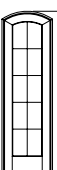
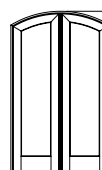

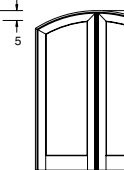

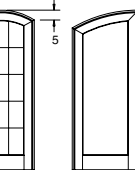

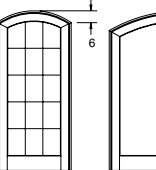
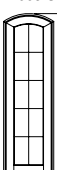
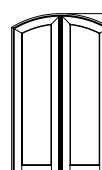

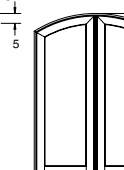

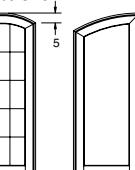

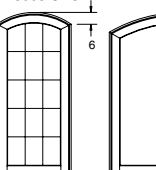
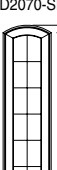
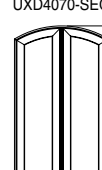

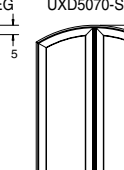

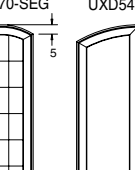

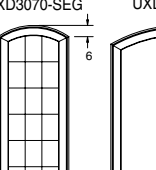


# ULTRA SERIES | INSWING ENTRANCE DOORS

## INSWING ENTRANCE DOORS

F.S.	2'-1 5/8"	4'-2 3/16"	2'-7 5/8"	5'-2 3/16"	2'-9 5/8"	5'-6 3/16"	3'-1 5/8"	6'-2 3/16"
R.O.	2'-2 1/8"	4'-2 11/16"	2'-8 1/8"	5'-2 11/16"	2'-10 1/8"	5'-6 11/16"	3'-2 1/8"	6'-2 11/16"
G.S.	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-10 23/32"								
6'-11 7/32"								
68 7/8"								
7'-2 23/32"								
7'-3 7/32"								
72 7/8"								
8'-2 23/32"								
8'-3 7/32"								
84 7/8"								

## SEGMENT HEAD INSWING ENTRANCE DOORS

F.S.	2'-1 5/8"	4'-2 3/16"	2'-7 5/8"	5'-2 3/16"	2'-9 5/8"	5'-6 3/16"	3'-1 5/8"	6'-2 3/16"
R.O.	2'-2 1/8"	4'-2 11/16"	2'-8 1/8"	5'-2 11/16"	2'-10 1/8"	5'-6 11/16"	3'-2 1/8"	6'-2 11/16"
G.S.	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-10 23/32"								
6'-11 7/32"								
68 7/8"								
7'-2 23/32"								
7'-3 7/32"								
72 7/8"								
8'-2 23/32"								
8'-3 7/32"								
84 7/8"								

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Operation is viewed from the interior. When ordering specify inswing. If you are ordering a single unit, specify stationary, hinged left or hinged right.

Double-wide doors are also available as French units, with no fixed astragal between the door panels. Specify French when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes per panel are given; true glass sizes vary depending on the radius involved.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | INSWING ENTRANCE DOORS

## INSWING ENTRANCE DOORS | SIDELITES

F.S.	1'-1 3/4"	1'-3 3/4"	1'-5 3/4"	1'-7 3/4"
R.O.	1'-2 1/4"	1'-4 1/4"	1'-6 1/4"	1'-8 1/4"
G.S.	7 3/4"	9 3/4"	11 3/4"	13 3/4"
6'-10 23/32"				
6'-11 7/32"				
7'-2 23/32"				
7'-3 7/32"				
8'-2 23/32"				
8'-3 7/32"				

## INSWING ENTRANCE DOORS | SIDELITE SASH DESIGNS

Sash Design#:	UP7110	UP7114	UP7115
UXD1068S	✓	✓	N/A
UXD1268S	✓	✓	N/A
UXD1468S	✓	✓	N/A
UXD1668S	✓	✓	N/A
UXD1070S	✓	✓	N/A
UXD1270S	✓	✓	N/A
UXD1470S	✓	✓	N/A
UXD1670S	✓	✓	N/A
UXD1080S	✓	N/A	✓
UXD1280S	✓	N/A	✓
UXD1480S	✓	N/A	✓
UXD1680S	✓	N/A	✓

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Sidelite sash designs showing divided lites have PDL. If a different divided lite pattern is needed, specify sash design UP7110 and the type of PDL configuration.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

## INSWING ENTRANCE DOORS | RECTANGULAR TRANSOMS

F.S.	2'-1 5/8"	2'-7 5/8"	2'-9 5/8"	3'-1 5/8"	4'-2 3/16"	5'-2 3/16"	5'-6 3/16"	6'-2 3/16"
R.O.	2'-2 1/8"	2'-8 1/8"	2'-10 1/8"	3'-2 1/8"	4'-2 11/16"	5'-2 11/16"	5'-6 11/16"	6'-2 11/16"
G.S.	20 1/8"	26 1/8"	28 1/8"	32 1/8"	44 11/16"	56 11/16"	60 11/16"	68 11/16"
11 1/2"								
1'-0"								
1'-3 1/2"								
1'-4"								
1'-5 1/2"								
1'-6"								
1'-7 1/2"								
1'-8"								
1'-11 1/2"								
2'-0"								
2'-5 1/2"								
2'-6"								

### NOTES:

All measurements are nominal.

Elevation charts are not to scale.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units.

Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lite configurations must be specified when ordering. Specify inswing when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size

R.O. = Rough Opening

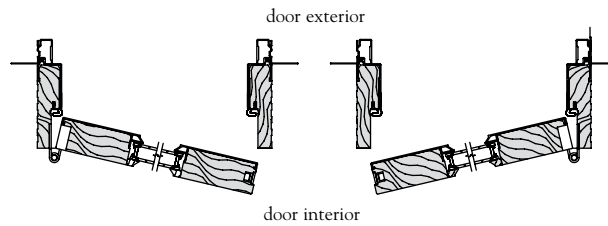
G.S. = Glass Size

# ULTRA SERIES | INSWING ENTRANCE DOORS

## HINGING FOR INSWING ENTRANCE DOORS

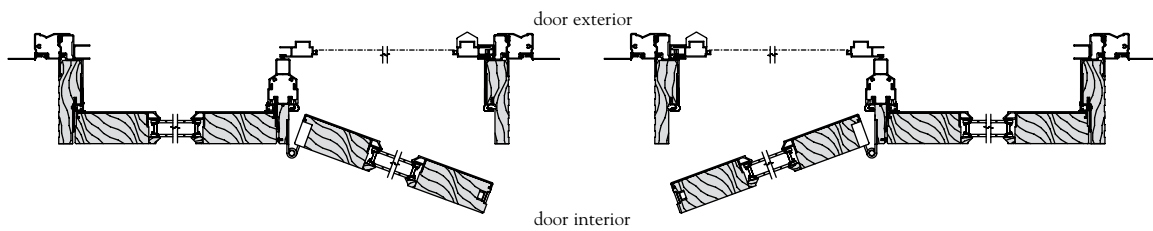
HL (Hinged Left)

HR (Hinged Right)



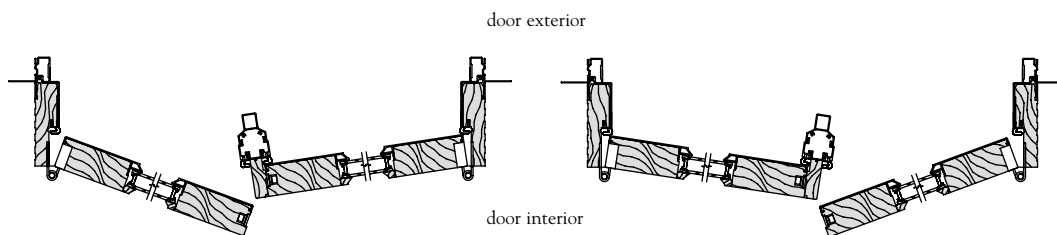
SAL (Stationary, Active Hinged Left)

ASR (Active Hinged Right, Stationary)



AL (French, Hinged Left, Active)

AR (French, Hinged Right, Active)

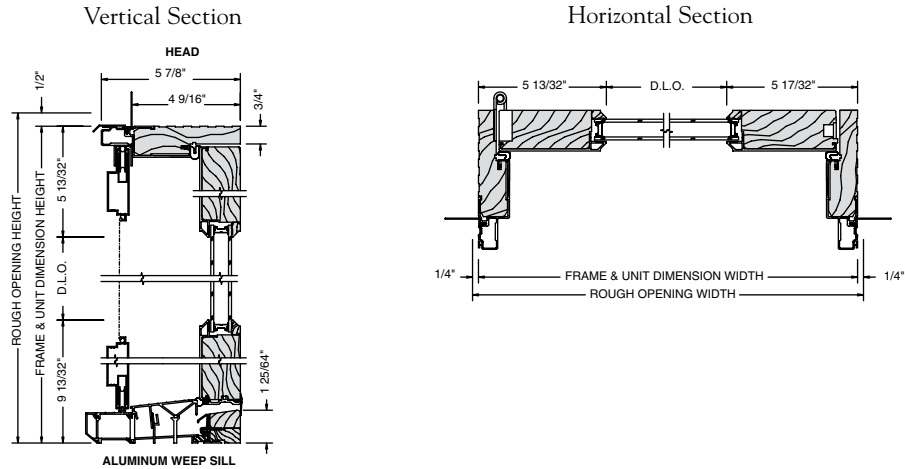


NOTE: Drawings are not to scale.

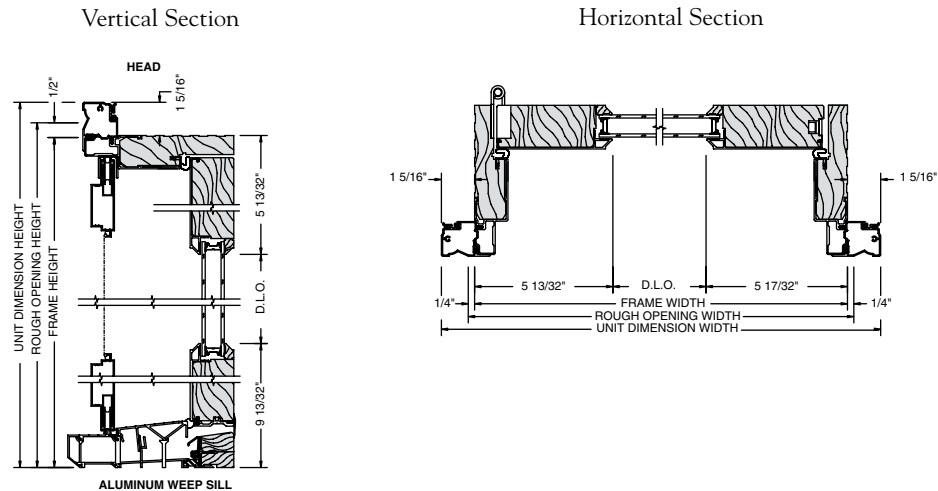
# ULTRA SERIES | INSWING ENTRANCE DOORS

## INSWING ENTRANCE DOOR CROSS SECTION DRAWINGS

### Standard

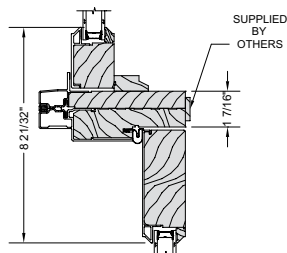


### Inswing with 1-15/16" Brickmould

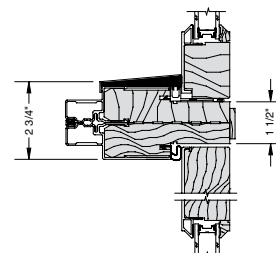


## RECTANGULAR TRANSOM STACKED OVER INSWING ENTRANCE DOOR

### Standard



### Optional



#### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

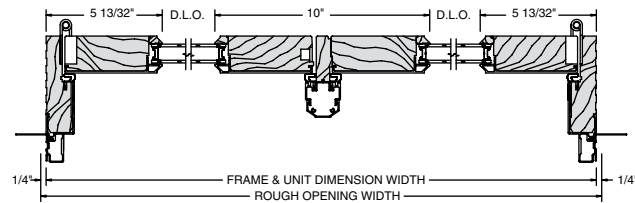
Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

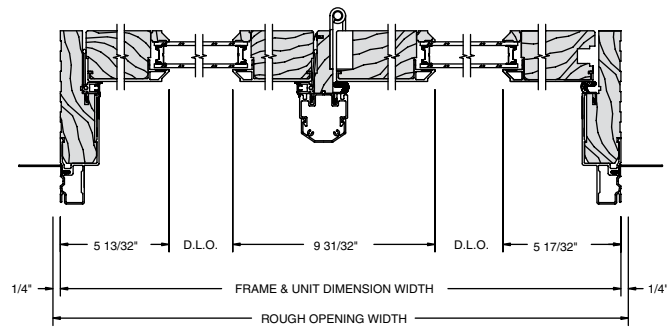
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

# ULTRA SERIES | INSWING ENTRANCE DOORS

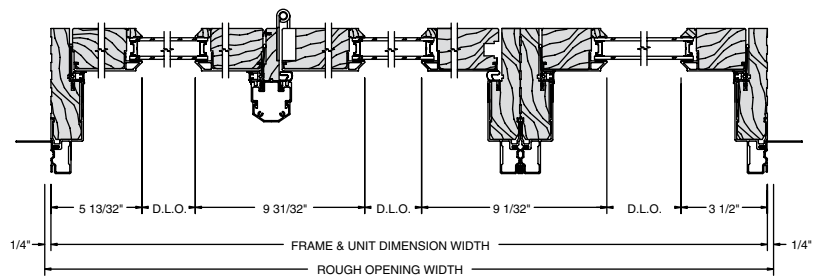
## TWO-WIDE INSWING FRENCH DOOR



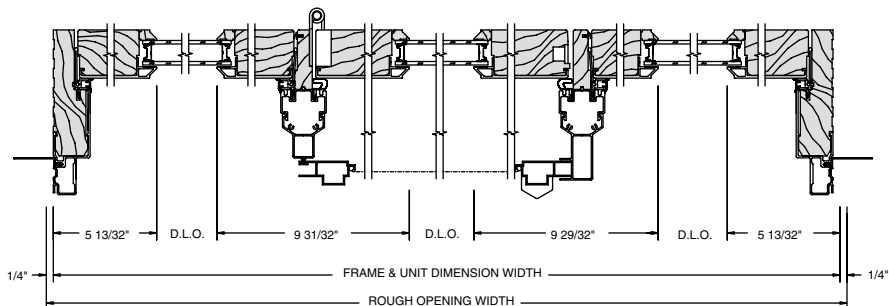
## TWO-WIDE INSWING ENTRANCE DOOR - ACTIVE/STATIONARY



## TWO-WIDE INSWING ENTRANCE DOOR WITH SIDELITE



## THREE-WIDE INSWING ENTRANCE DOOR

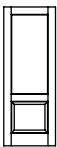
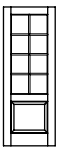
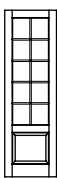
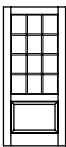
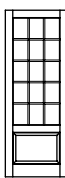
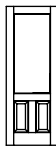
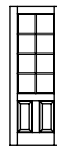
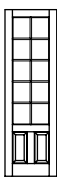
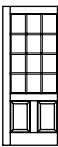
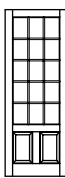


NOTE: Drawings are not to scale.



# ULTRA SERIES | OUTSWING ENTRANCE DOORS

## OUTSWING ENTRANCE DOOR SASH WITH PANEL (FLAT OR RAISED) DESIGNS

											
	Sash Design#:	UP8110	UP8124	UP8125	UP8134	UP8135	UP8210	UP8224	UP8225	UP8234	UP8235
Product I.D. Code	UXD- 2068 / 4068	✓	✓	N/A	N/A	N/A	✓	✓	N/A	N/A	N/A
	UXD- 2668 / 5068	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 2868 / 5468	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 3068 / 6068	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 2070 / 4070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 2670 / 5070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 2870 / 5470	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 3070 / 6070	✓	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A
	UXD- 2080 / 4080	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A	✓
	UXD- 2680 / 5080	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A	✓
	UXD- 2880 / 5480	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A	✓
	UXD- 3080 / 6080	✓	N/A	✓	N/A	✓	✓	N/A	✓	N/A	✓

### NOTES:

Sash designs shown with divided lites have PDL. If a different divided lite pattern is needed, specify sash design UP8110 or UP8210 and the type of PDL configuration.

Drawings are not to scale.

### DIMENSION CALCULATIONS

	WIDTH	HEIGHT
F.S. to Panel O.S.M. (1-wide)	-2 13/32"	-2 19/32"
Panel O.S.M. to G.S. (1-wide)	-8 1/8"	-11 3/32"
Panel Opening Width to G.S. (2-wide)	-17 3/8" ÷ 2	
(3-wide)	-26 5/16" ÷ 3	
F.S. to Panel Opening Width	-2 1/8"	
G.S. to D.L.O.	-1"	-1"

NOTE: Dimension calculations for transoms may be obtained from your supplier. Clear opening dimensions can be found on pg. 188.

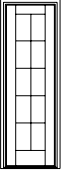
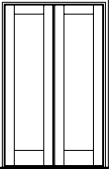
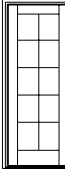
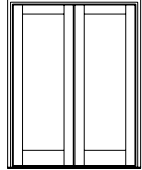
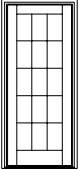
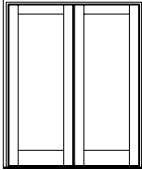
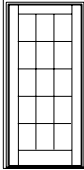
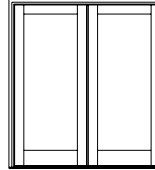
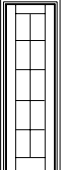
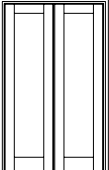
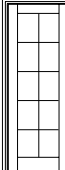
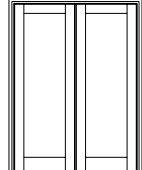
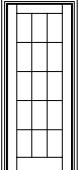
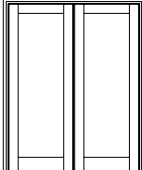
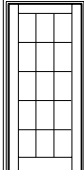
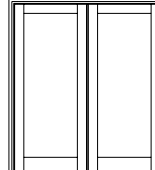
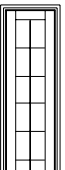
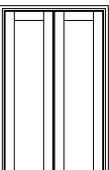
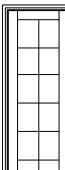
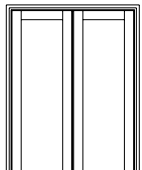
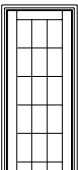
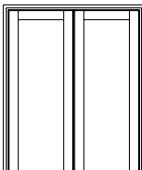
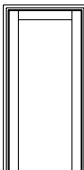
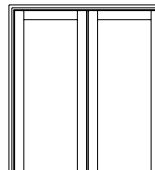
Elevation charts provide frame sizes for units without brickmould.  
Below are the calculations to determine overall unit dimensions for units with brickmould.

1 15/16" brickmould; F.S. to U.D.	+2 5/8"	+1 5/16"
3 1/2" flat or profiled casing; F.S. to U.D.	+5 1/2"	+2 3/4"
3 1/2" flat casing & backband; F.S. to U.D.	+7"	+3 1/2"

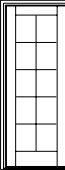
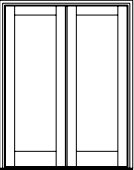
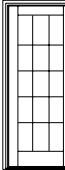
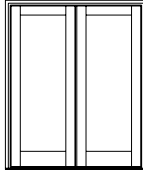
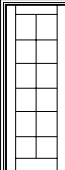
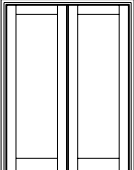
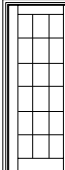
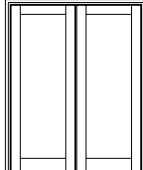
F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement  
D.L.O. = Daylight Opening • U.D. = Unit Dimension

# ULTRA SERIES | OUTSWING ENTRANCE DOORS

## OUTSWING ENTRANCE DOORS

F.S.	2'-2 7/32"	4'-2 7/8"	2'-8 7/32"	5'-2 7/8"	2'-10 7/32"	5'-6 7/8"	3'-2 7/32"	6'-2 7/8"
R.O.	2'-2 23/32"	4'-3 3/8"	2'-8 23/32"	5'-3 3/8"	2'-10 23/32"	5'-7 3/8"	3'-2 23/32"	6'-3 3/8"
G.S.	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-10 19/32"								
6'-11 3/32"								
68 7/8"								
7'-2 19/32"								
7'-3 3/32"								
72 7/8"								
8'-2 19/32"								
8'-3 3/32"								
84 7/8"								

## OUTSWING PATIO DOOR SIZES

F.S.	2'-6 27/32"	5'-0 1/8"	3'-0 27/32"	6'-0 1/8"
R.O.	2'-7 11/32"	5'-0 5/8"	3'-1 11/32"	6'-0 5/8"
G.S.	20 5/16"	20 5/16"	26 5/16"	26 5/16"
6'-7 3/8"				
6'-7 7/8"				
65 11/16"				
7'-11 15/32"				
7'-11 31/32"				
81 3/4"				

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Dimensions are given for active units; dimensions for stationary units may vary.

Operation is viewed from the exterior. Specify outswing when ordering. When ordering single units, specify stationary, hinged left or hinged right.

Double-wide doors are available as French units, with no fixed astragal between the door panels. Specify French when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

F.S. = Frame Size

R.O. = Rough Opening

G.S. = Glass Size (Glass sizes are shown per panel.)

# ULTRA SERIES | OUTSWING ENTRANCE DOORS

## SEGMENT HEAD OUTSWING ENTRANCE DOORS

F.S.	2'-2 7/32"		4'-2 7/8"		2'-8 7/32"		5'-2 7/8"		2'-10 7/32"		5'-6 7/32"		3'-2 7/32"		6'-2 7/8"	
R.O.	2'-2 23/32"		4'-3 3/8"		2'-8 23/32"		5'-3 3/8"		2'-10 23/32"		5'-7 23/32"		3'-2 23/32"		6'-3 3/8"	
G.S.	15 11/16"		15 11/16"		21 11/16"		21 11/16"		23 11/16"		23 11/16"		27 11/16"		27 11/16"	
6'-10 19/32" 6'-11 3/32" 68 7/8"																
	UXD2068-SEG	UXD4068-SEG	UXD2668-SEG	UXD5068-SEG	UXD2868-SEG	UXD5468-SEG	UXD3068-SEG	UXD6068-SEG								
7'-2 19/32" 7'-3 3/32" 72 7/8"																
	UXD2070-SEG	UXD4070-SEG	UXD2670-SEG	UXD5070-SEG	UXD2870-SEG	UXD5470-SEG	UXD3070-SEG	UXD6070-SEG								
8'-2 19/32" 8'-3 3/32" 84 7/8"																
	UXD2080-SEG	UXD4080-SEG	UXD2680-SEG	UXD5080-SEG	UXD2880-SEG	UXD5480-SEG	UXD3080-SEG	UXD6080-SEG								

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Dimensions are given for active units; dimensions for stationary units may vary.

Operation is viewed from the exterior. When ordering specify outswing. If you are ordering a single unit, specify stationary, hinged left or hinged right.

Double-wide doors are available as French units, with no fixed astragal between the door panels. Specify French when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

\* Approximate glass sizes per panel are given; true glass sizes vary depending on radius involved.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | OUTSWING ENTRANCE DOORS

## OUTSWING ENTRANCE DOORS | SIDELITES

F.S.	1'-2 1/4"	1'-4 1/4"	1'-6 1/4"	1'-8 1/4"
R.O.	1'-2 3/4"	1'-4 3/4"	1'-6 3/4"	1'-8 3/4"
G.S.	7 5/8"	9 5/8"	11 5/8"	13 5/8"
6'-10 19/32"				
6'-11 3/32"	UXD1068S	UXD1268S	UXD1468S	UXD1668S
7'-2 19/32"				
7'-3 3/32"	UXD1070S	UXD1270S	UXD1470S	UXD1670S
8'-2 19/32"				
8'-3 3/32"	UXD1080S	UXD1280S	UXD1480S	UXD1680S

## OUTSWING ENTRANCE DOORS | SIDELITE SASH DESIGNS

Sash Design#:	UP7110	UP7114	UP7115
Product I.D. Code			
UXD1068S	✓	✓	N/A
UXD1268S	✓	✓	N/A
UXD1468S	✓	✓	N/A
UXD1668S	✓	✓	N/A
UXD1070S	✓	✓	N/A
UXD1270S	✓	✓	N/A
UXD1470S	✓	✓	N/A
UXD1670S	✓	✓	N/A
UXD1080S	✓	N/A	✓
UXD1280S	✓	N/A	✓
UXD1480S	✓	N/A	✓
UXD1680S	✓	N/A	✓

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Sidelite sash designs showing divided lites have PDL. If a different divided lite pattern is needed, specify sash design UP7110 and the type of PDL configuration. Specify outswing when ordering.

























































Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.





























F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | OUTSWING ENTRANCE DOORS

## OUTSWING ENTRANCE DOORS | RECTANGULAR TRANSOMS

F.S.	2'-2 7/32"	2'-8 7/32"	2'-10 7/32"	3'-2 7/32"	4'-2 7/8"	5'-2 7/8"	5'-6 7/8"	6'-2 7/8"
R.O.	2'-2 23/32"	2'-8 23/32"	2'-10 23/32"	3'-2 23/32"	4'-3 3/8"	5'-3 3/8"	5'-7 3/8"	6'-3 3/8"
G.S.	19 19/32"	25 19/32"	27 19/32"	31 19/32"	44 1/4"	56 1/4"	60 1/4"	68 1/4"
11 1/2"								
1'-0"	UXDT2010	UXDT2610	UXDT2810	UXDT3010	UXDT4010	UXDT5010	UXDT5410	UXDT6010
1'-4"								
1'-3 1/2"	UXDT2014	UXDT2614	UXDT2814	UXDT3014	UXDT4014	UXDT5014	UXDT5414	UXDT6014
1'-6"								
1'-5 1/2"	UXDT2016	UXDT2616	UXDT2816	UXDT3016	UXDT4016	UXDT5016	UXDT5416	UXDT6016
1'-8"								
1'-7 1/2"	UXDT2018	UXDT2618	UXDT2818	UXDT3018	UXDT4018	UXDT5018	UXDT5418	UXDT6018
2'-0"								
1'-11 1/2"	UXDT2020	UXDT2620	UXDT2820	UXDT3020	UXDT4020	UXDT5020	UXDT5420	UXDT6020
2'-5 1/2"								
2'-6"	UXDT2026	UXDT2626	UXDT2826	UXDT3026	UXDT4026	UXDT5026	UXDT5426	UXDT6026
22 7/8"								
2'-5 1/2"	UXDT2026	UXDT2626	UXDT2826	UXDT3026	UXDT4026	UXDT5026	UXDT5426	UXDT6026

## OUTSWING PATIO DOORS | RECTANGULAR TRANSOMS

F.S.	2'-6 27/32"	3'-0 27/32"	5'-0 1/8"	6'-0 1/8"
R.O.	2'-7 11/32"	3'-1 11/32"	5'-0 5/8"	6'-0 5/8"
G.S.	24 7/32"	30 7/32"	53 1/2"	65 1/2"
11 1/2"				
1'-0"	SPUT2610	SPUT3010	SPUT41110	SPUT51110
1'-4"				
1'-3 1/2"	SPUT2614	SPUT3014	SPUT41114	SPUT51114
1'-6"				
1'-5 1/2"	SPUT2616	SPUT3016	SPUT41116	SPUT51116
1'-8"				
1'-7 1/2"	SPUT2618	SPUT3018	SPUT41118	SPUT51118
2'-0"				
1'-11 1/2"	SPUT2620	SPUT3020	SPUT41120	SPUT51120
2'-5 1/2"				
2'-6"	SPUT2626	SPUT3026	SPUT41126	SPUT51126
22 7/8"				

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Transom dimensions shown are for units stacked above active doors; dimensions for transoms stacked above stationary doors may vary.

Divided lite configurations must be specified when ordering. Specify outswing when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

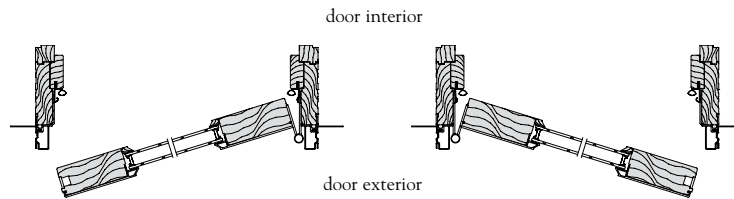


# ULTRA SERIES | OUTSWING ENTRANCE DOORS

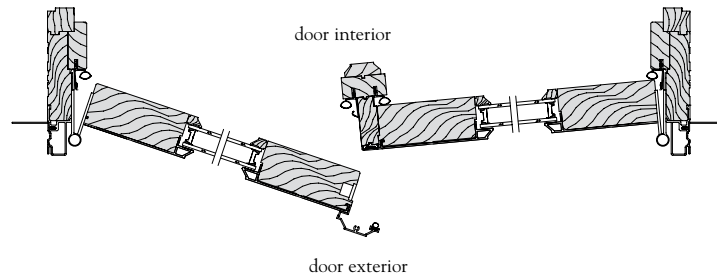
## HINGING FOR OUTSWING ENTRANCE DOORS

HR (Hinged Right)

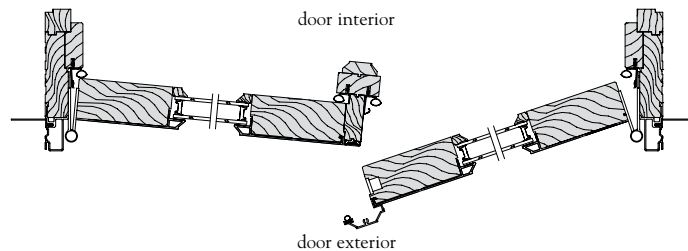
HL (Hinged Left)



AL (French, Hinged Left, Active)



AR (French, Hinged Right, Active)



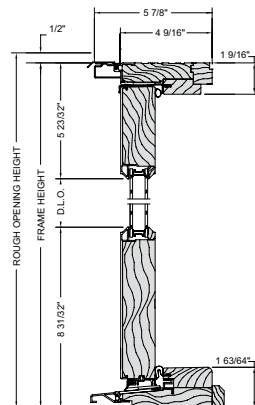
NOTE: Drawings are not to scale.

# ULTRA SERIES | OUTSWING ENTRANCE DOORS

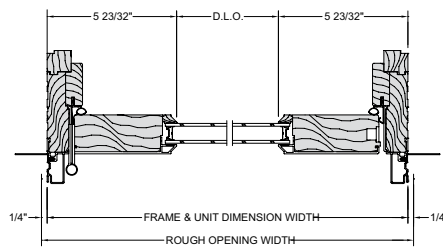
## OUTSWING ENTRANCE DOOR CROSS SECTION DRAWINGS

### Standard

Vertical Section

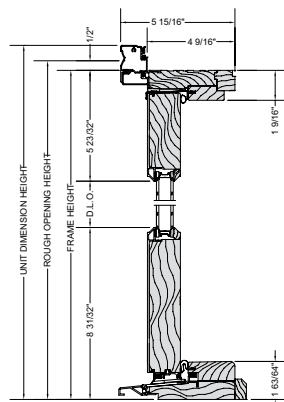


Horizontal Section

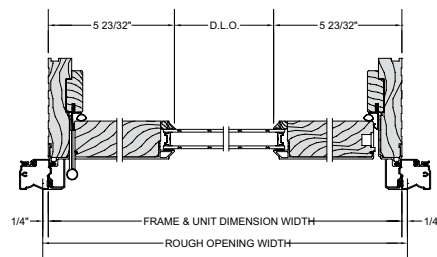


### Outswing with 1-15/16\" Brickmould

Vertical Section



Horizontal Section



## RECTANGULAR TRANSOM STACKED OVER OUTSWING ENTRANCE DOOR

### NOTES:

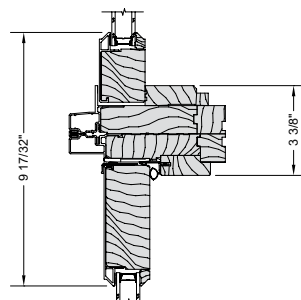
Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

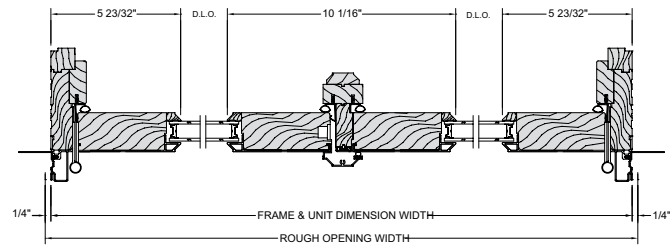
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

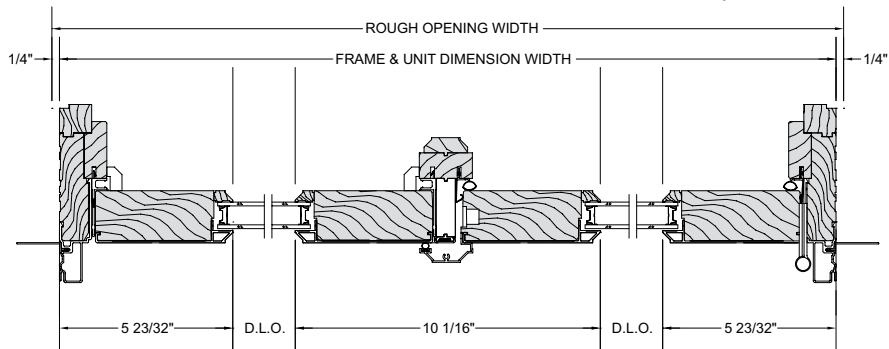


# ULTRA SERIES | OUTSWING ENTRANCE DOORS

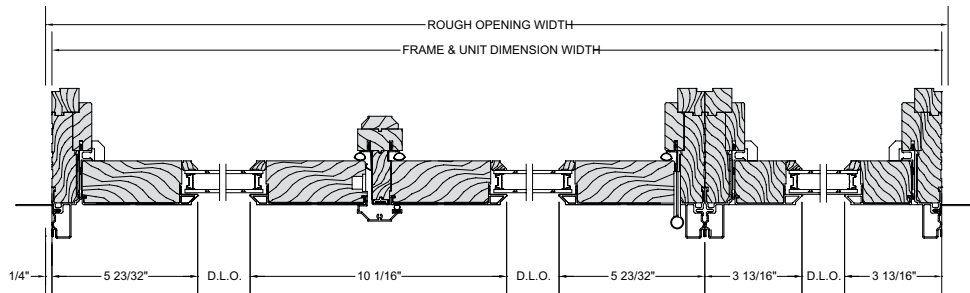
## TWO-WIDE OUTSWING FRENCH DOOR



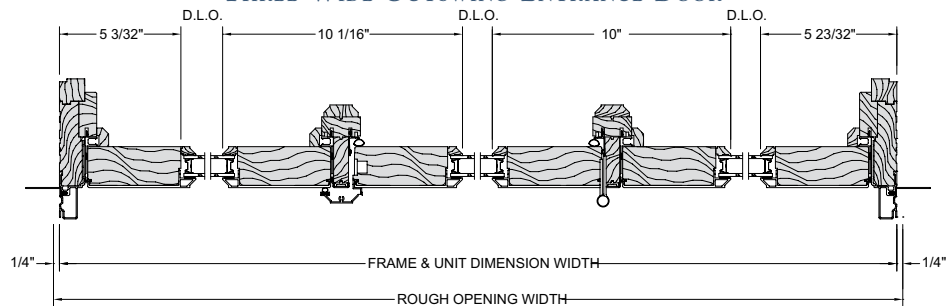
## TWO-WIDE OUTSWING ENTRANCE DOOR - STATIONARY/ACTIVE



## TWO-WIDE OUTSWING ENTRANCE DOOR WITH SIDELITE



## THREE-WIDE OUTSWING ENTRANCE DOOR



NOTE: Drawings are not to scale.



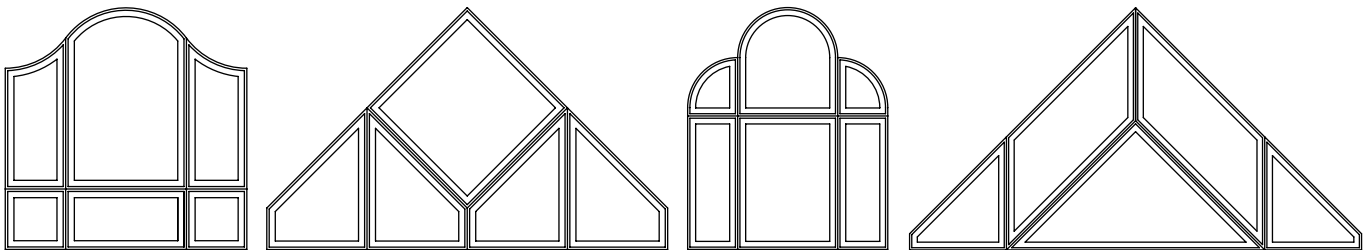
# ULTRA SERIES | COMPLEMENTARY

RADIUS UNITS

GEOMETRIC UNITS

OGEE DIRECT SET

BEVELED DIRECT SET



Ultra Series complementary units do just that – complement. Eye catching designs of radius and geometric units add uniqueness and interest to the style of your project. Group a variety of shapes and styles into an inventive window wall or use in combination with other Ultra Series windows and doors.



# ULTRA SERIES | RADIUS UNITS



## RADIUS STANDARD FEATURES

- 1-3/4" thick sash
- Overall jamb width is 4-9/16"; 5-9/16" for Magnum radius units (basic box width matches the unit being complemented)
- 3" straight legs on half-circles
- Constructed of pine, with pine interior stops and wood mull casings on mull units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazing is sash set to the interior with wood glazing beads
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frames are press fit on to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered or profile cut, with internal corner and end keys screwed into the joints and injected with silicone sealant
- Sash exterior is covered with .062" thick, 6063 extruded aluminum alloy
- 70% PVDF fluoropolymer finish on frame and sash exteriors (meets performance requirements of AAMA 2605-05)
- Standard radius shapes include quarter-circles, half-circles, full-circles, ovals and ellipticals
- Heavy vinyl nailing fins\*\*

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Vinyl nailing fin applied as standard to units without brickmould





## RADIUS OPTIONAL FEATURES

### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Ovolo or square profile glazing beads (pg. 9)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Glazing may be direct set
- Extended legs or no legs on half-circles
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Extruded aluminum nailing fin with drip cap on the radius portion of the frame (shipped for field application)
- High performance or K-Force® impact performance modifications

### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.









## ULTRA SERIES | GEOMETRIC UNITS

### GEOMETRIC UNITS

Angled for interest, geometric windows are attention-grabbers. Kolbe can produce a nearly infinite variety of window shapes and sizes, with a vast array of glazing options. Geometric units are sash set as standard and built with specifications to complement our standard windows and doors. As with our other products, exterior wood parts are preservative-treated and superior construction techniques are used to ensure stability. The units are completely assembled, with weatherstrip applied. Heavy vinyl nailing fins are applied to units without brickmould for easy installation. A variety of decorative exterior brickmoulds and sill nosing trims can be applied to further enhance the look of your project. Many glazing, grille and exterior finish options are available on Kolbe geometric windows, however, certain options may depend on the shape of the unit ordered. Contact your supplier about adding Kolbe custom geometric windows to your plans.

# ULTRA SERIES | DIRECT SETS

## OGEE DIRECT SET

The Ultra Series Ogee Direct Set combines historic charm with modern day innovation, making it perfect for today's new commercial or restoration projects.



### STANDARD FEATURES

- 2-7/16" overall jamb width
- Constructed of unfinished pine, with pine interior stops and wood mull casings on muller units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazing is direct set to the interior
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frame is applied to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered 45°, with internal corner keys screwed into the joints and injected with silicone sealant
- 70% PVDF fluoropolymer finish on frame exteriors (meets performance requirements of AAMA 2605-05)
- Heavy vinyl nailing fins\*\*

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Ogee Direct Set profile



### OGEE DIRECT SET OPTIONAL FEATURES

#### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

#### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

- PDL with 7/8", 1-1/8", or 1-3/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

#### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Extruded aluminum drip cap (radius units; shipped for field application)

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.



## BEVELED DIRECT SET

The Ultra Series Beveled Direct Set incorporates a clean, contemporary look to provide design flexibility while maximizing the view and daylight.

### STANDARD FEATURES

- 2-3/4" overall jamb width
- Constructed of unfinished pine, with pine interior stops and wood mull casings on muller units
- 7/8" LoE<sup>2</sup>-270 insulating glass\*
- Glazing is direct set to the interior
- All exterior wood parts are preservative-treated
- .050" thick, 6063 extruded aluminum alloy frame is applied to the wood frame exterior of all units
- Accessory grooves are integral to the extruded frames for the easy addition of accessories
- Frame corners are mitered 45°, with internal corner keys screwed into the joints and injected with silicone sealant
- 70% PVDF fluoropolymer finish on frame exteriors (meets performance requirements of AAMA 2605-05)
- Heavy vinyl nailing fins\*\*

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

\*\* Standard only on units without brickmould.

Beveled Direct Set profile



### BEVELED DIRECT SET OPTIONAL FEATURES

#### GLASS (pgs. 6-7):

- LoE<sup>2</sup>-240\*
- LoE<sup>3</sup>-366\*
- ThermaPlus LoE
- Neat®
- Patterned-, bronze- or gray-lite
- Tempered or laminated
- Other options standard to the industry

#### DIVIDED LITES (pgs. 8-9):

- Grilles-in-the-airspace
- Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds
- PDL with 5/8", 7/8", 1-1/8", 1-3/4" or 2-1/4" bars
- Ovolo or square profile interior grille bars (pg. 9)

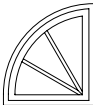
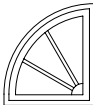

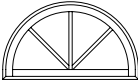
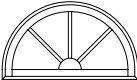
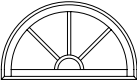

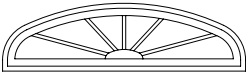
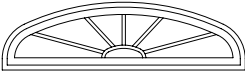
#### OTHER OPTIONS: (custom options are also available)

- Other wood species and FSC-certified wood (pg. 11)
- Interior prefinishing (pg. 11)
- Interior casing (pg. 13)
- Extruded aluminum accessories applied to accessory grooves on the exterior frame (pg. 12)
- Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- Galvanized steel installation clips
- Extruded aluminum drip cap (radius units; shipped for field application)

#### NOTES:

All measurements are nominal.

\* Argon gas may not be included with units to be installed in or shipped through high altitude areas.
















	RADIUS DIVIDED LITE PATTERNS		
QUARTER-CIRCLES	 Starburst	 Sunburst	 Open Hub Sunburst*
HALF-CIRCLES	 Starburst	 Sunburst	 Open Hub Sunburst*
ELLIPTICALS	 Starburst	 Sunburst	 Open Hub Sunburst*

\* Open Hub Sunburst is available with grilles-in-the-airspace with limitations; however, 2-1/4" PDL bars are not available. Consult your supplier for details.  
Patterns and hub sizes remain the same between wood removable grilles, grilles-in-the-airspace or PDL.  
Consult your supplier about divided lite patterns for full-circle and oval windows.















DIMENSION CALCULATIONS

Dimension calculation formulas for radius units vary depending on the unit and application. Please contact your Kolbe supplier if formulas are needed.







## HALF-CIRCLE UNITS | CASEMENT

<b>F.S.</b> 1'-8" <b>R.O.</b> 1'-8 1/2" <b>G.S.</b> 14 5/8" <b>1'-1"</b> <b>1'-1 1/2"</b> <b>7 5/8"</b>  <b>URTKN1</b>	<b>F.S.</b> 2'-0" <b>R.O.</b> 2'-0 1/2" <b>G.S.</b> 18 5/8" <b>1'-3"</b> <b>1'-3 1/2"</b> <b>9 5/8"</b>  <b>URTKW1</b>	<b>F.S.</b> 2'-4" <b>R.O.</b> 2'-4 1/2" <b>G.S.</b> 22 5/8" <b>1'-5"</b> <b>1'-5 1/2"</b> <b>11 5/8"</b>  <b>URTKL1</b>	<b>F.S.</b> 2'-6" <b>R.O.</b> 2'-6 1/2" <b>G.S.</b> 24 5/8" <b>1'-6"</b> <b>1'-6 1/2"</b> <b>12 5/8"</b>  <b>URTKX1</b>	<b>F.S.</b> 2'-8" <b>R.O.</b> 2'-8 1/2" <b>G.S.</b> 26 5/8" <b>1'-7"</b> <b>1'-7 1/2"</b> <b>13 5/8"</b>  <b>URTKS2</b>	<b>F.S.</b> 3'-0" <b>R.O.</b> 3'-0 1/2" <b>G.S.</b> 30 5/8" <b>1'-9"</b> <b>1'-9 1/2"</b> <b>15 5/8"</b>  <b>URTK30/E1</b>
<b>F.S.</b> 3'-4" <b>R.O.</b> 3'-4 1/2" <b>G.S.</b> 34 5/8" <b>1'-11"</b> <b>1'-11 1/2"</b> <b>17 5/8"</b>  <b>URTKN2</b>	<b>F.S.</b> 3'-6" <b>R.O.</b> 3'-6 1/2" <b>G.S.</b> 36 5/8" <b>2'-0"</b> <b>2'-0 1/2"</b> <b>15 5/8"</b>  <b>URTKW3</b>	<b>F.S.</b> 4'-0" <b>R.O.</b> 4'-0 1/2" <b>G.S.</b> 42 5/8" <b>2'-3"</b> <b>2'-3 1/2"</b> <b>21 5/8"</b>  <b>URTKW2</b>	<b>F.S.</b> 4'-8" <b>R.O.</b> 4'-8 1/2" <b>G.S.</b> 50 5/8" <b>2'-7"</b> <b>2'-7 1/2"</b> <b>25 5/8"</b>  <b>URTKL2</b>	<b>F.S.</b> 5'-0" <b>R.O.</b> 5'-0 1/2" <b>G.S.</b> 54 5/8" <b>2'-9"</b> <b>2'-9 1/2"</b> <b>27 5/8"</b>  <b>URTKX2</b>	<b>F.S.</b> 6'-0" <b>R.O.</b> 6'-0 1/2" <b>G.S.</b> 66 5/8" <b>3'-3"</b> <b>3'-3 1/2"</b> <b>33 5/8"</b>  <b>URTKW3</b>
<b>F.S.</b> 7'-0" <b>R.O.</b> 7'-0 1/2" <b>G.S.</b> 78 5/8" <b>3'-9"</b> <b>3'-9 1/2"</b> <b>39 5/8"</b>  <b>URTKL3</b>	<b>F.S.</b> 7'-6" <b>R.O.</b> 7'-6 1/2" <b>G.S.</b> 84 5/8" <b>4'-0"</b> <b>4'-0 1/2"</b> <b>42 5/8"</b>  <b>URTKX3</b>	<b>F.S.</b> 8'-0" <b>R.O.</b> 8'-0 1/2" <b>G.S.</b> 90 5/8" <b>4'-3"</b> <b>4'-3 1/2"</b> <b>45 5/8"</b>  <b>URTKW4</b>			

## HALF-CIRCLE UNITS | DOUBLE HUNG

<b>F.S.</b> 1'-9 1/2" <b>R.O.</b> 1'-10" <b>G.S.</b> 16" <b>1'-1 3/4"</b> <b>1'-2 1/4"</b> <b>8 1/4"</b>  <b>URT16DH</b>	<b>F.S.</b> 2'-1 1/2" <b>R.O.</b> 2'-2" <b>G.S.</b> 20" <b>1'-3 3/4"</b> <b>1'-4 1/4"</b> <b>10 1/4"</b>  <b>URT20DH</b>	<b>F.S.</b> 2'-5 1/2" <b>R.O.</b> 2'-6" <b>G.S.</b> 24" <b>1'-5 3/4"</b> <b>1'-6 1/4"</b> <b>12 1/4"</b>  <b>URT24DH</b>	<b>F.S.</b> 2'-9 1/2" <b>R.O.</b> 2'-10" <b>G.S.</b> 28" <b>1'-7 3/4"</b> <b>1'-8 1/4"</b> <b>14 1/4"</b>  <b>URT28DH</b>	<b>F.S.</b> 3'-1 1/2" <b>R.O.</b> 3'-2" <b>G.S.</b> 32" <b>1'-9 3/4"</b> <b>1'-10 1/4"</b> <b>16 1/4"</b>  <b>URT32DH</b>	<b>F.S.</b> 3'-5 1/2" <b>R.O.</b> 3'-6" <b>G.S.</b> 36" <b>1'-11 3/4"</b> <b>2'-0 1/4"</b> <b>18 1/4"</b>  <b>URT36DH</b>	<b>F.S.</b> 3'-7" <b>R.O.</b> 3'-7 1/2" <b>G.S.</b> 37 1/2" <b>2'-0 1/2"</b> <b>2'-1"</b> <b>19"</b>  <b>URT16-2DH</b>	<b>F.S.</b> 3'-9 1/2" <b>R.O.</b> 3'-10" <b>G.S.</b> 40" <b>2'-1 3/4"</b> <b>2'-2 1/4"</b> <b>20 1/4"</b>  <b>URT40DH</b>
<b>F.S.</b> 4'-3" <b>R.O.</b> 4'-3 1/2" <b>G.S.</b> 45 1/2" <b>2'-4 1/2"</b> <b>2'-5"</b> <b>23"</b>  <b>URT20-2DH</b>	<b>F.S.</b> 4'-11" <b>R.O.</b> 4'-11 1/2" <b>G.S.</b> 53 1/2" <b>2'-8 1/2"</b> <b>2'-9"</b> <b>27"</b>  <b>URT24-2DH</b>	<b>F.S.</b> 5'-7" <b>R.O.</b> 5'-7 1/2" <b>G.S.</b> 61 1/2" <b>3'-0 1/2"</b> <b>3'-1"</b> <b>31"</b>  <b>URT28-2DH</b>	<b>F.S.</b> 6'-3" <b>R.O.</b> 6'-3 1/2" <b>G.S.</b> 69 1/2" <b>3'-4 1/2"</b> <b>3'-5"</b> <b>35"</b>  <b>URT32-2DH</b>	<b>F.S.</b> 6'-11" <b>R.O.</b> 6'-11 1/2" <b>G.S.</b> 77 1/2" <b>3'-8 1/2"</b> <b>3'-9"</b> <b>39"</b>  <b>URT36-2DH</b>	<b>F.S.</b> 7'-7" <b>R.O.</b> 7'-7 1/2" <b>G.S.</b> 85 1/2" <b>4'-0 1/2"</b> <b>4'-1"</b> <b>43"</b>  <b>URT40-2DH</b>		

## HALF-CIRCLE UNITS | MAGNUM DOUBLE HUNG

<b>CLAD U.D.</b> 3'-2 1/8" <b>R.O.</b> 3'-2 5/8" <b>1'-10 1/16"</b> <b>1'-10 9/16"</b>  <b>MRT30DH</b>	<b>CLAD U.D.</b> 3'-6 1/8" <b>R.O.</b> 3'-6 5/8" <b>2'-0 1/16"</b> <b>2'-0 9/16"</b>  <b>MRT34DH</b>	<b>CLAD U.D.</b> 3'-10 1/8" <b>R.O.</b> 3'-10 5/8" <b>2'-2 1/16"</b> <b>2'-2 9/16"</b>  <b>MRT38DH</b>	<b>CLAD U.D.</b> 4'-2 1/8" <b>R.O.</b> 4'-2 5/8" <b>2'-4 1/16"</b> <b>2'-4 9/16"</b>  <b>MRT40DH</b>	<b>CLAD U.D.</b> 4'-6 1/8" <b>R.O.</b> 4'-6 5/8" <b>2'-6 1/16"</b> <b>2'-6 9/16"</b>  <b>MRT44DH</b>	<b>CLAD U.D.</b> 4'-10 1/8" <b>R.O.</b> 4'-10 5/8" <b>2'-8 1/16"</b> <b>2'-8 9/16"</b>  <b>MRT48DH</b>
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### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

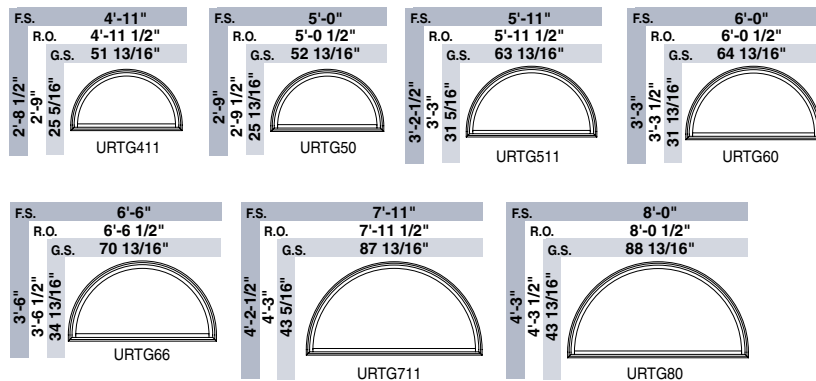
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

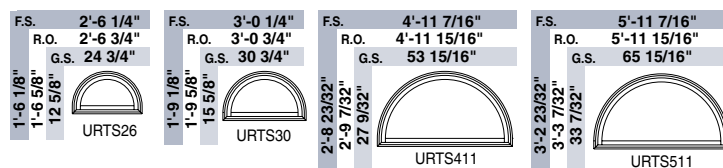
F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | RADIUS

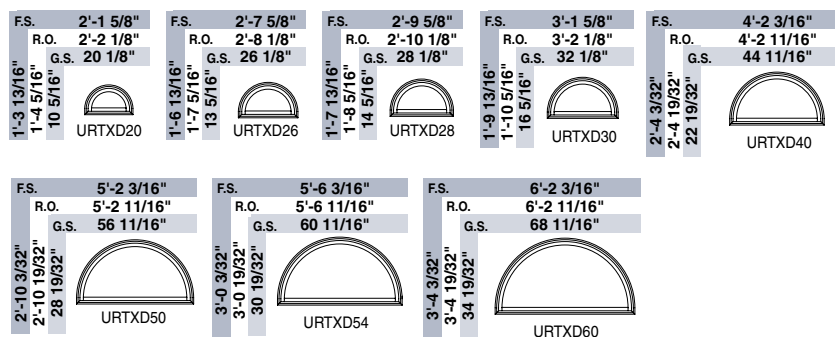
## HALF-CIRCLE UNITS | GARDEN-AIRE SLIDING PATIO DOOR



## HALF-CIRCLE UNITS | INSWING PATIO DOOR



## HALF-CIRCLE UNITS | INSWING ENTRANCE DOOR



### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

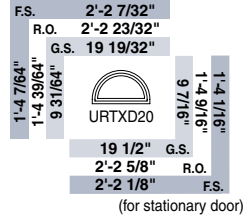
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

For rough opening recommendations, see pg. 188.

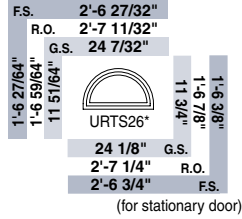
F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

## HALF-CIRCLE UNITS | ONE-WIDE OUTSWING ENTRANCE DOOR

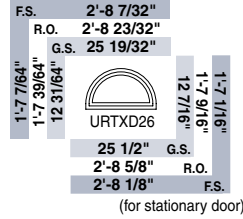
(for active door)



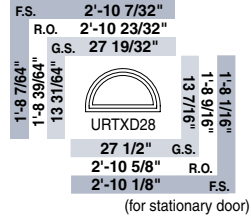
(for active door)



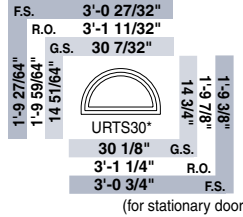
(for active door)



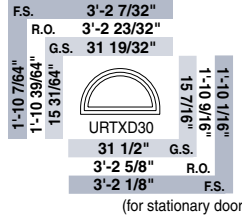
(for active door)



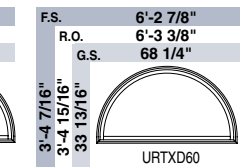
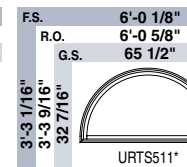
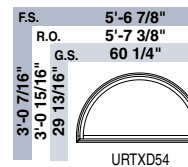
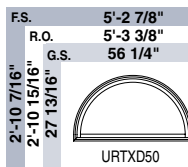
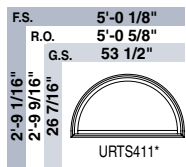
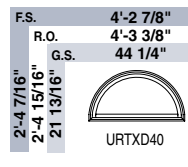
(for active door)



(for active door)



## HALF-CIRCLE UNITS | TWO-WIDE OUTSWING ENTRANCE DOOR



### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.






\*Patio door sizes

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size
















# ULTRA SERIES | RADIUS








## ELLIPTICAL UNITS | CASEMENT

F.S.	4'-0"	5'-0"	6'-0"	7'-6"	8'-0"
R.O.	4'-0 1/2"	5'-0 1/2"	6'-0 1/2"	7'-6 1/2"	8'-0 1/2"
G.S.	42 5/8"	54 5/8"	66 5/8"	84 5/8"	90 5/8"
1'-6" 1'-6 1/2" 12 5/8"					
	UEHKW2	UEHKX2	UEHKW3	UEHKX3	UEHKW4

## ELLIPTICAL UNITS | DOUBLE HUNG

F.S.	3'-7"	4'-3"	4'-11"	5'-4 1/2"	5'-7"	6'-3"	6'-4 1/2"	6'-11"
	3-7 1/2"	4-3 1/2"	4-11 1/2"	5-5"	5-7 1/2"	6-3 1/2"	6-5"	6-11 1/2"
	G.S. 37 1/2"	45 1/2"	53 1/2"	59"	61 1/2"	69 1/2"	71"	77 1/2"
1'-6" 1'-6 1/2" 12 1/2"								
	UEH16-2DH	UEH20-2DH	UEH24-2DH	UEH16-3DH	UEH28-2DH	UEH32-2DH	UEH20-3DH	UEH36-2DH
F.S.	7'-4 1/2"	7'-7"	8'-4 1/2"	9'-4 1/2"	10'-4 1/2"			
	7'-5"	7'-7 1/2"	8'-5"	9'-5"	10'-5"			
	G.S. 83"	85 1/2"	95"	107"	119"			
1'-6" 1'-6 1/2" 12 1/2"								
	UEH24-3DH	UEH40-2DH	UEH28-3DH	UEH32-3DH	UEH36-3DH			

## ELLIPTICAL UNITS | GARDEN-AIRE SLIDING PATIO DOOR

F.S.		4'-11"	5'-0"	5'-11"	6'-0"
R.O.		4'-11 1/2"	5'-0 1/2"	5'-11 1/2"	6'-0 1/2"
G.S.		51 13/16"	52 13/16"	63 13/16"	64 13/16"
1'-6" 1'-6 1/2" 10 13/16"					
		UEHG411	UEHG50	UEHG511	UEHG60
F.S.		6'-6"	7'-11"	8'-0"	
R.O.		6'-6 1/2"	7'-11 1/2"	8'-0 1/2"	
G.S.		70 13/16"	87 13/16"	88 13/16"	
1'-6" 1'-6 1/2" 10 13/16"					
		UEHG66	UEHG711	UEHG80	

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size



## ELLIPTICAL UNITS | INSWING PATIO DOOR

F.S.	4'-11 7/16"	5'-11 7/16"
R.O.	4'-11 15/16"	5'-11 15/16"
G.S.	53 15/16"	65 15/16"

1'-6"

1'-6 1/2"

12 1/2"

UEHS411
UEHS511





## ELLIPTICAL UNITS | INSWING ENTRANCE DOOR

F.S.	4'-2 3/16"	5'-2 3/16"	5'-6 3/16"	6'-2 3/16"
R.O.	4'-2 11/16"	5'-2 11/16"	5'-6 11/16"	6'-2 11/16"
G.S.	44 11/16"	56 11/16"	60 11/16"	68 11/16"

1'-6"

1'-6 1/2"

12 1/2"

UEHXD40
UEHXD50
UEHXD54
UEHXD60





## ELLIPTICAL UNITS | OUTSWING ENTRANCE DOOR

F.S.	4'-2 7/8"	5'-2 7/8"	5'-6 7/8"	6'-2 7/8"
R.O.	4'-3 3/8"	5'-3 3/8"	5'-7 3/8"	6'-3 3/8"
G.S.	44 1/4"	56 1/4"	60 1/4"	68 1/4"

1'-6"

1'-6 1/2"

11 3/8"

UEHXD40-MAN
UEHXD50-MAN
UEHXD54-MAN
UEHXD60-MAN



## ELLIPTICAL UNITS | OUTSWING - PATIO SIZES

F.S.	5'-0 1/8"	6'-0 1/8"
R.O.	5'-0 5/8"	6'-0 5/8"
G.S.	53 1/2"	65 1/2"

1'-6"

1'-6 1/2"

11 3/8"

UEHS411
UEHS511

### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.






Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.





FS. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

# ULTRA SERIES | RADIUS







## QUARTER-CIRCLE UNITS | CASEMENT

<b>F.S.</b> 1'-8" <b>R.O.</b> 1'-8 1/2" <b>G.S.</b> 14 5/8" <b>1'-11"</b> <b>1'-11 1/2"</b> <b>17 5/8"</b>  <b>URTQRN1</b>	<b>F.S.</b> 2'-0" <b>R.O.</b> 2'-0 1/2" <b>G.S.</b> 18 5/8" <b>2'-3"</b> <b>2'-3 1/2"</b> <b>21 5/8"</b>  <b>URTQRW1</b>	<b>F.S.</b> 2'-6" <b>R.O.</b> 2'-6 1/2" <b>G.S.</b> 24 5/8" <b>2'-9"</b> <b>2'-9 1/2"</b> <b>27 5/8"</b>  <b>URTQRX1</b>	<b>F.S.</b> 3'-0" <b>R.O.</b> 3'-0 1/2" <b>G.S.</b> 30 5/8" <b>3'-3"</b> <b>3'-3 1/2"</b> <b>33 5/8"</b>  <b>URTQRK30</b>	<b>F.S.</b> 4'-0" <b>R.O.</b> 4'-0 1/2" <b>G.S.</b> 42 5/8" <b>4'-3"</b> <b>4'-3 1/2"</b> <b>45 5/8"</b>  <b>URTQRW2</b>
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## QUARTER-CIRCLE UNITS | DOUBLE HUNG

<b>F.S.</b> 2'-1 1/2" <b>R.O.</b> 2'-2" <b>G.S.</b> 20" <b>2'-4 1/2"</b> <b>2'-5"</b> <b>23"</b>  <b>URTQR20DH</b>	<b>F.S.</b> 2'-5 1/2" <b>R.O.</b> 2'-6" <b>G.S.</b> 24" <b>2'-8 1/2"</b> <b>2'-9"</b> <b>27"</b>  <b>URTQR24DH</b>	<b>F.S.</b> 2'-9 1/2" <b>R.O.</b> 2'-10" <b>G.S.</b> 28" <b>3'-0 1/2"</b> <b>3'-1"</b> <b>31"</b>  <b>URTQR28DH</b>	<b>F.S.</b> 3'-1 1/2" <b>R.O.</b> 3'-2" <b>G.S.</b> 32" <b>3'-4 1/2"</b> <b>3'-5"</b> <b>35"</b>  <b>URTQR32DH</b>
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## FULL CIRCLE UNITS | CASEMENT

<b>F.S.</b> 2'-0" <b>R.O.</b> 2'-0 1/2" <b>G.S.</b> 18 5/8" <b>2'-0"</b> <b>2'-0 1/2"</b> <b>18 5/8"</b>  <b>UFC2-0</b>	<b>F.S.</b> 2'-6" <b>R.O.</b> 2'-6 1/2" <b>G.S.</b> 24 5/8" <b>2'-6"</b> <b>2'-6 1/2"</b> <b>24 5/8"</b>  <b>UFC2-6</b>	<b>F.S.</b> 3'-0" <b>R.O.</b> 3'-0 1/2" <b>G.S.</b> 30 5/8" <b>3'-0"</b> <b>3'-0 1/2"</b> <b>30 5/8"</b>  <b>UFC3-0</b>	<b>F.S.</b> 3'-6" <b>R.O.</b> 3'-6 1/2" <b>G.S.</b> 36 5/8" <b>3'-6"</b> <b>3'-6 1/2"</b> <b>36 5/8"</b>  <b>UFC3-6</b>	<b>F.S.</b> 4'-0" <b>R.O.</b> 4'-0 1/2" <b>G.S.</b> 42 5/8" <b>4'-0"</b> <b>4'-0 1/2"</b> <b>42 5/8"</b>  <b>UFC4-0</b>	<b>F.S.</b> 6'-0" <b>R.O.</b> 6'-0 1/2" <b>G.S.</b> 66 5/8" <b>6'-0"</b> <b>6'-0 1/2"</b> <b>66 5/8"</b>  <b>UFC6-0</b>
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## OVAl UNITS | CASEMENT

<b>F.S.</b> 1'-8" <b>R.O.</b> 1'-8 1/2" <b>G.S.</b> 14 5/8" <b>2'-6"</b> <b>2'-6 1/2"</b> <b>24 5/8"</b>  <b>UOV1-8</b>	<b>F.S.</b> 2'-0" <b>R.O.</b> 2'-0 1/2" <b>G.S.</b> 18 5/8" <b>3'-0"</b> <b>3'-0 1/2"</b> <b>30 5/8"</b>  <b>UOV2-0</b>	<b>F.S.</b> 3'-0" <b>R.O.</b> 3'-0 1/2" <b>G.S.</b> 30 5/8" <b>4'-6"</b> <b>4'-6 1/2"</b> <b>48 5/8"</b>  <b>UOV3-0</b>
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### NOTES:

All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 188.

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

## STANDARD SASH SET RADIUS UNIT CROSS SECTION DRAWINGS

To Match  
Casements

To Match  
Double Hungs

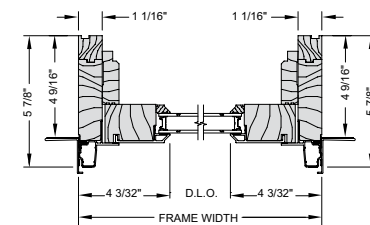
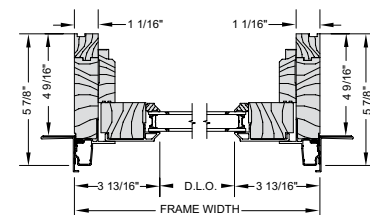
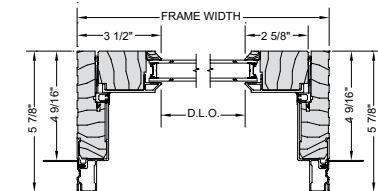
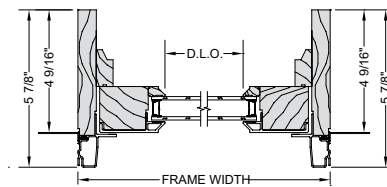
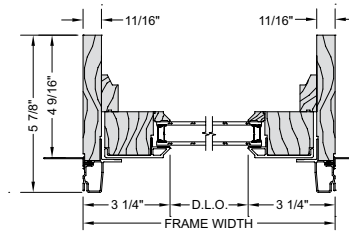
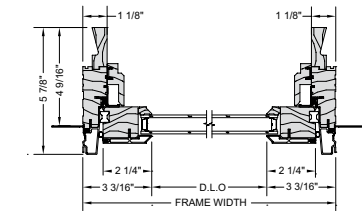
To Match  
Inswing Doors:  
Standard Radius Unit

To Match  
Inswing Doors:  
Optional Radius Unit

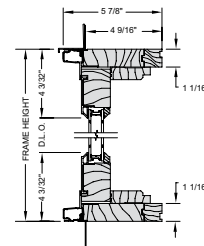
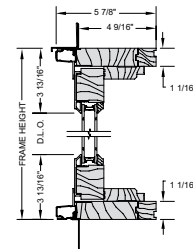
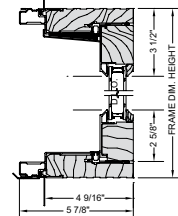
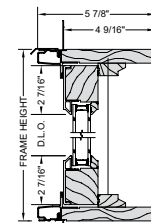
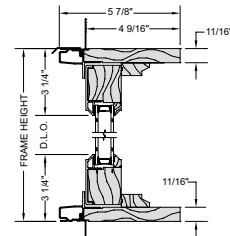
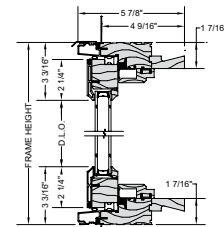
To Match  
Outswing Doors

To Match  
Garden-Aire  
Patio Doors

Horizontal



Vertical



### NOTES:

Drawings are not to scale.

Some units are shown with optional drip cap or nailing fin.

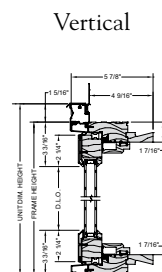
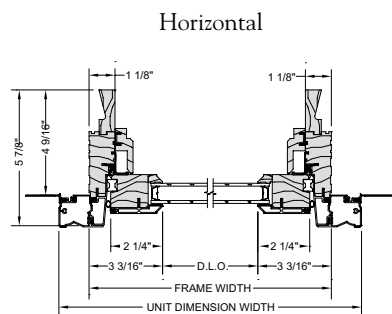
Sash set radius units also available to match Magnum Double Hungs.

Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

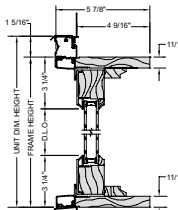
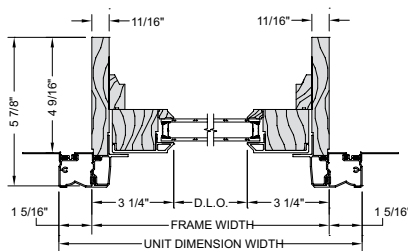
# ULTRA SERIES | RADIUS

## SASH SET RADIUS UNIT WITH 1-15/16" BRICKMOULD CROSS SECTION DRAWINGS

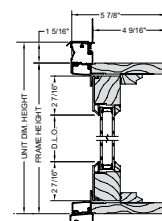
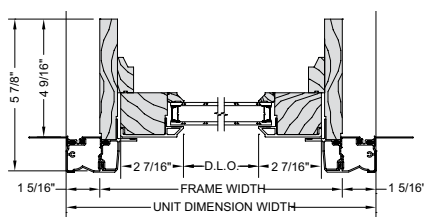
To Match  
Casements



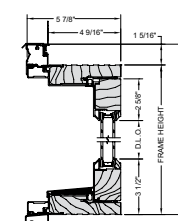
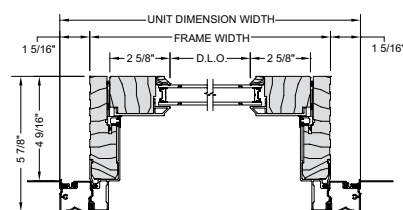
To Match  
Double Hungs



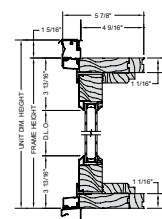
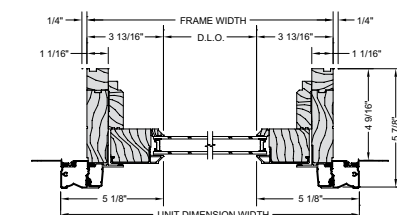
To Match  
Inswing Doors:  
Standard Radius Unit



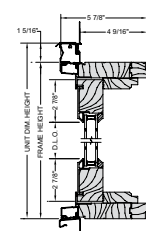
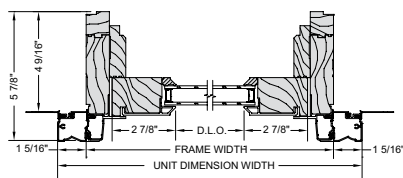
To Match  
Inswing Doors:  
Optional Radius Unit



To Match  
Outswing Doors



To Match  
Garden-Aire  
Patio Doors



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

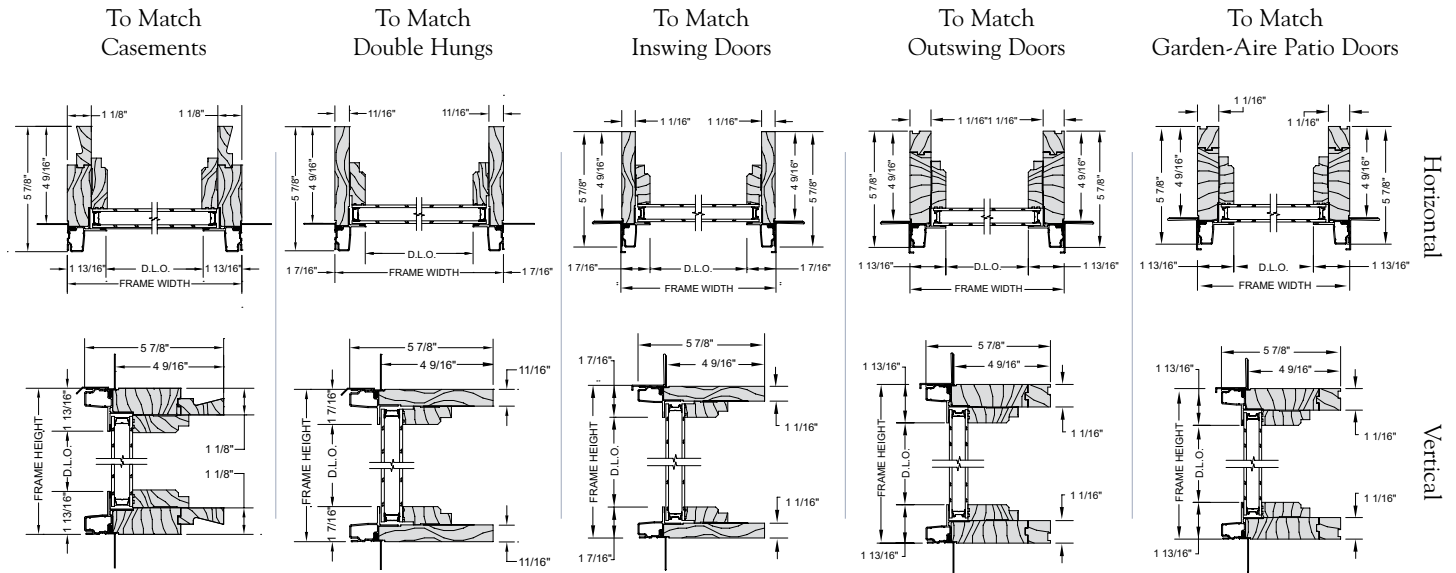
Some units are shown with optional drip cap or nailing fin.

For Ultra accessory or application drawings, see pgs. 176-182.

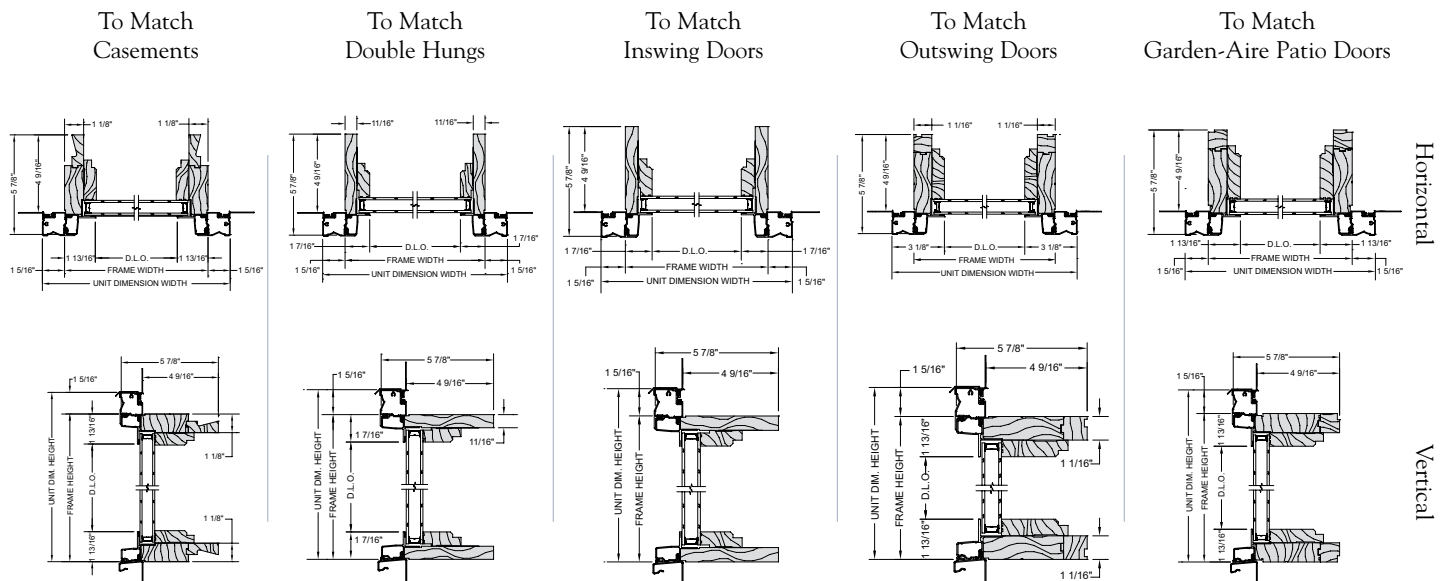
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).



## STANDARD DIRECT SET RADIUS UNIT CROSS SECTION DRAWINGS



## DIRECT SET RADIUS UNIT WITH 1-15/16" BRICKMOULD CROSS SECTION DRAWINGS



### NOTES:

Drawings are not to scale.

Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

Some units are shown with optional drip cap or nailing fin.

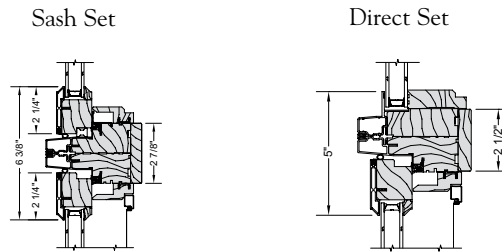
Window profile also available for other non-radius shapes.

For Ultra accessory or application drawings, see pgs. 176-182.

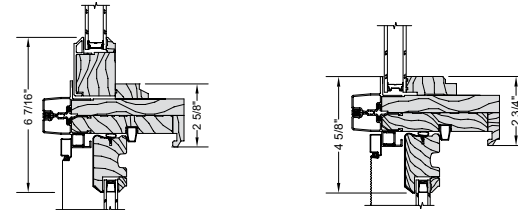
Additional and the most current drawings are available at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

## RADIUS UNIT STACKING DETAIL DRAWINGS

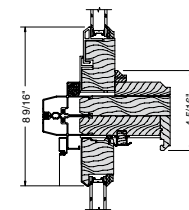
Stacked over Crank-Out Casements



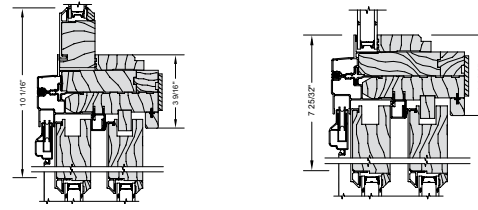
Stacked over Traditional Double Hungs



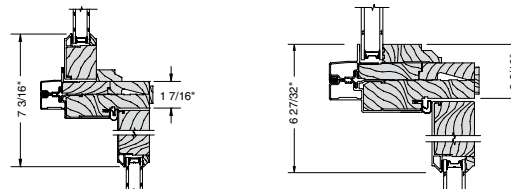
Stacked over Magnum Double Hungs



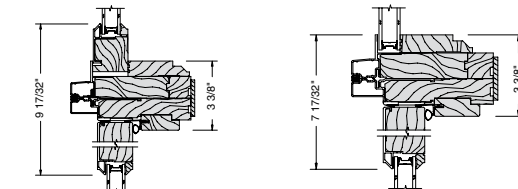
Stacked over Garden-Aire Sliding Patio Doors



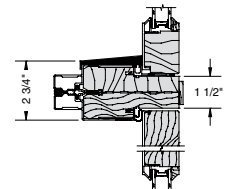
Stacked over Inswing Patio or Inswing Entrance Doors



Stacked over Outswing Entrance Doors



Optional Sash Set

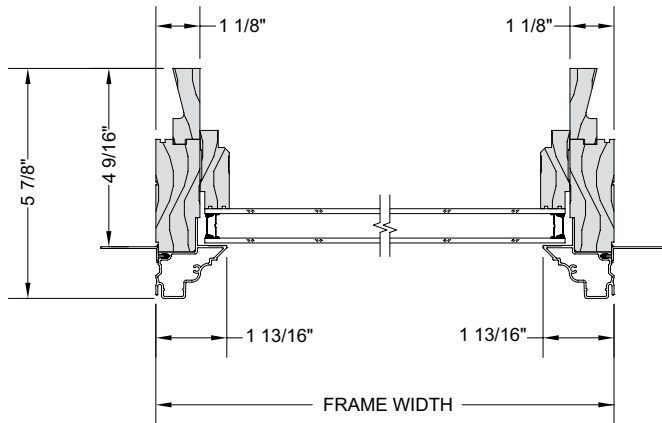


NOTES:  
Drawings are not to scale.  
More stacking details are available on the Kolbe website at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

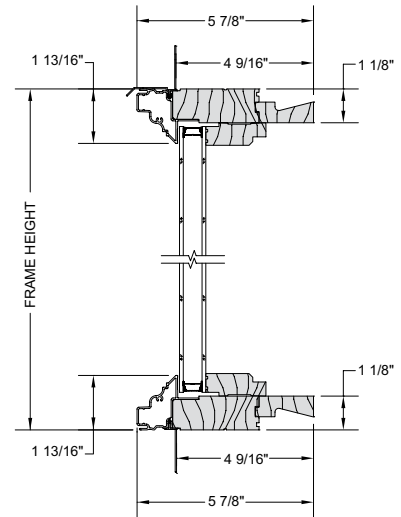
# ULTRA SERIES | DIRECT SETS

## Ogee Direct Set

Horizontal Section

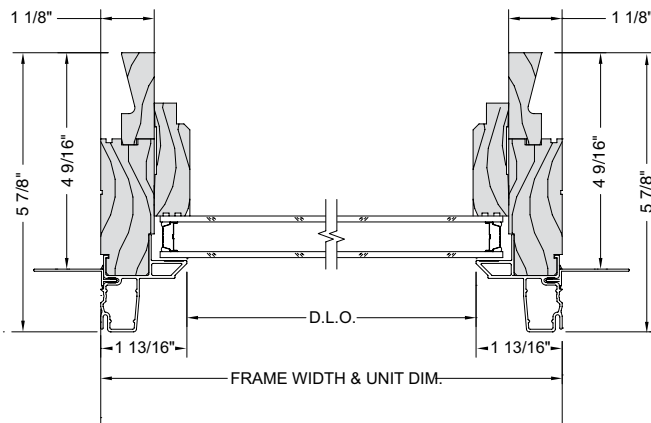


Vertical Section

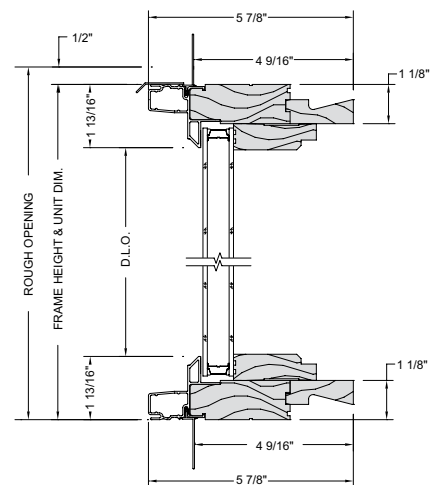


## Beveled Direct Set

Horizontal Section

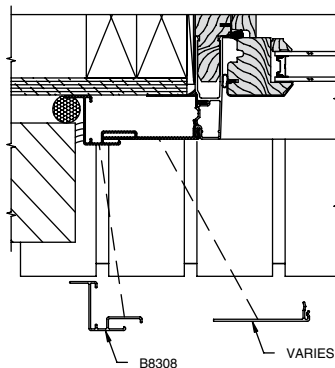


Vertical Section



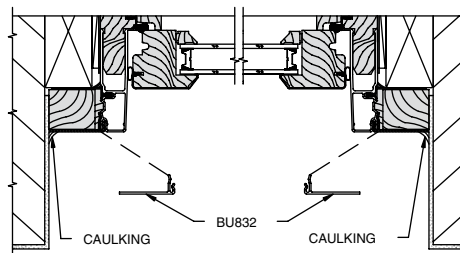
NOTE: Drawings are not to scale.

## ULTRA ACCESSORY APPLICATION DETAILS



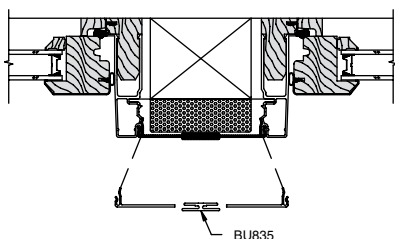
### EXPANDER TRIM RECEIVER

Profile B8308 used in combination with any of the frame expanders achieves various casing widths. Field-applied only. Colored to match the unit.



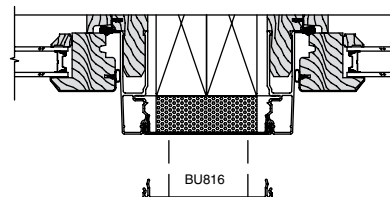
### FRAME EXPANDERS

Profile BU836 is used to expand frame width to 1", Profile BU837 is used to expand frame width to 2", Profile BU832 is used to expand frame width from 3/4" to 4", Profile BU831 is used to expand frame width up to 6" and Profile BU833 is used to expand frame width up to 7". Field-applied only. Colored to match the unit.



### ADJUSTABLE MULL COVERS

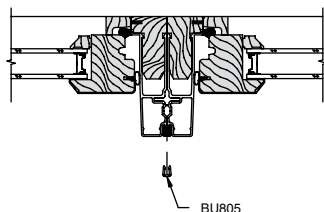
Profiles BU831, BU832, or BU833 in conjunction with Profile BU835 is used for custom units over 4" wide to 14" wide. Field-applied only. Colored to match the unit.



### 1 PIECE MULL COVER

Profile BU817 - 1/4" Mull Cover  
 BU813 - 1/2" Mull Cover  
 BU818 - 1" Mull Cover  
 BU814 - 1-1/2" Mull Cover  
 BU815 - 2" Mull Cover  
 BU875 - 2-1/2" Mull Cover  
 BU819 - 3" Mull Cover  
 BU829 - 3-1/2" Mull Cover  
 BU816 - 4" Mull Cover (Shown)  
 BU861 - 5-1/2" Mull Cover  
 BU852 - 6" Mull Cover

Used for standard spread mull widths from 1/4" to 6" wide. Colored to match the unit.

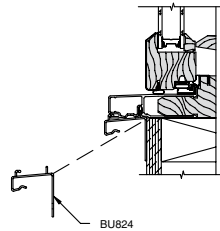


### MULL "U" SPLICE

Profile BU805 is used to seal when two units are mulled directly to one another. Colored to match the unit.

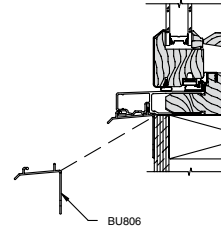
NOTE: Drawings are not to scale.

## ULTRA ACCESSORY APPLICATION DETAILS



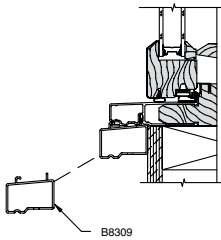
### TRADITIONAL SILL NOSING (STANDARD)

Profile BU824 may be applied to units with 1-15/16" brickmould, 3-1/2" brickmould or 3-1/2" flat casing. Colored to match the unit.



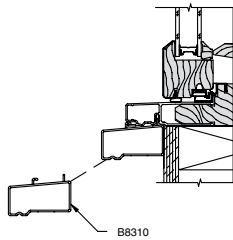
### SILL DRIP

Optional Profile BU806 may be applied to units with 1-15/16" brickmould, 3-1/2" brickmould or 3-1/2" flat casing. Colored to match the unit.



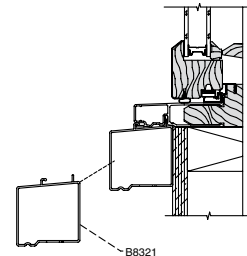
### 1-5/8" SILL NOSING

Optional Profile BU809 may be applied to units with 1-15/16" brickmould, 3-1/2" brickmould and 3-1/2" flat casing. Colored to match the unit.



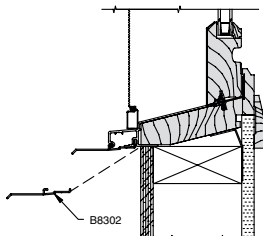
### 2-1/8" SILL NOSING

Profile B8310 is a standard application to units with backband, ogee casing and bullnose brickmould. Colored to match the unit.



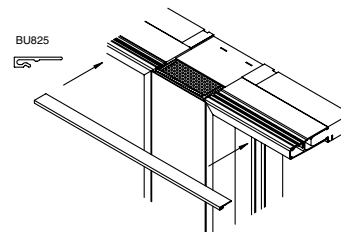
### 2-1/8" HISTORIC NOSING

Profile B8321 is a standard application to units with historic brickmould. Colored to match the unit.



### SILL EXTENDER

Optional Profile B8302 may be used with double hung and slider units only. Colored to match the unit. Field-applied only.



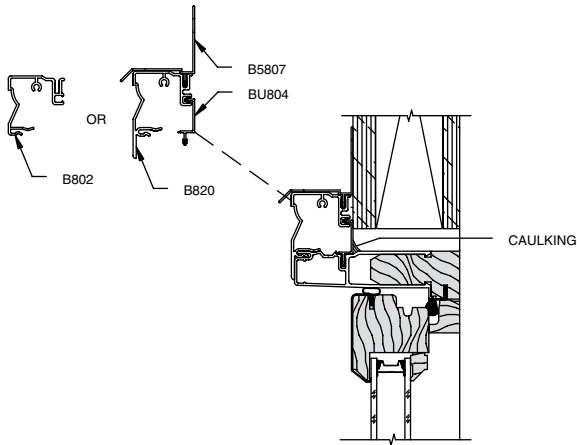
### HEAD & SILL TRIM

Profile BU825 may be used on spread mulls and stacked units without brickmould. Colored to match the unit.

NOTE: Drawings are not to scale.

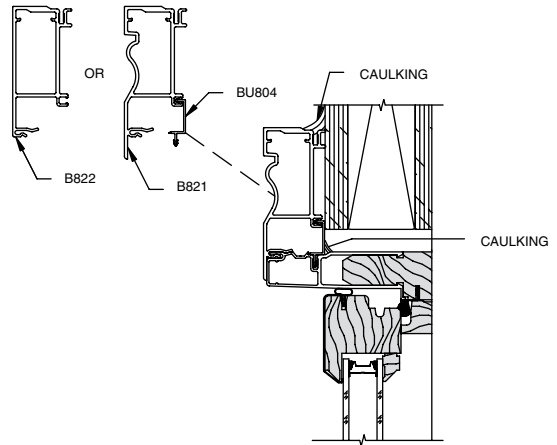


## ULTRA ACCESSORY APPLICATION DETAILS



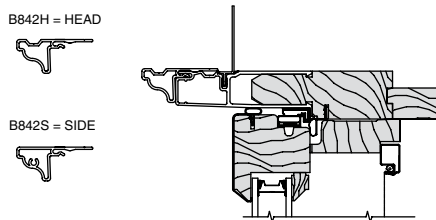
### 1-15/16" BRICKMOULD

Optional Profile B802 or standard Profile B820, coupled with Profiles BU804 and B5807, make up the factory-applied 1-15/16" brickmould. Colored to match the unit. Nailing fin applied.



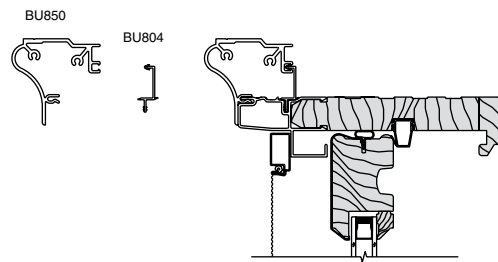
### 3-1/2" BRICKMOULD OR FLAT CASING

Profiles B821 or B822, coupled with Profile BU804, make up the factory-applied 3-1/2" brickmould or flat casing. Colored to match the unit. No nailing fin is applied.



### OGEE CASING

Profile B842H (head)  
Profile B842S (side)  
Ogee casing can be used on any Ultra unit as trim.  
Colored to match the unit. Nailing fin applied.

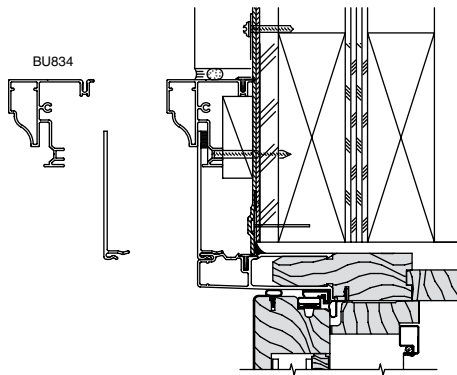


### BULL NOSE BRICKMOULD

Profile BU865, used in conjunction with Profile BU804, make up the factory-applied bull nose brickmould. Colored to match the unit.

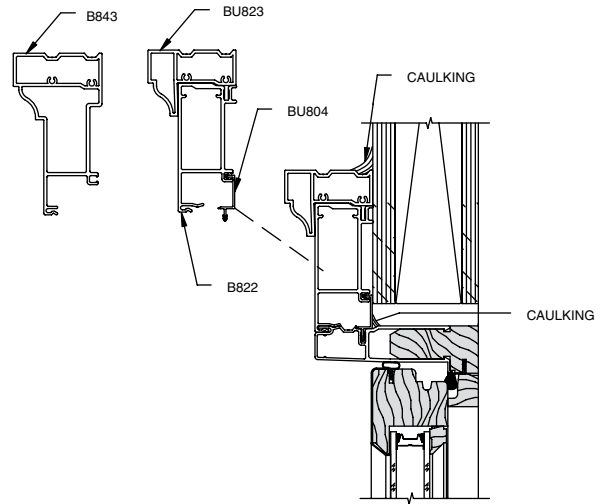
NOTE: Drawings are not to scale.

## ULTRA ACCESSORY APPLICATION DETAILS



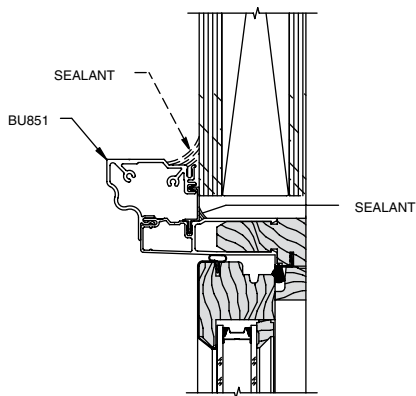
### BACKBAND RECEIVER

Profile BU834 used in conjunction with any of the frame expanders achieves various casing widths. Field-applied only. Colored to match the unit.



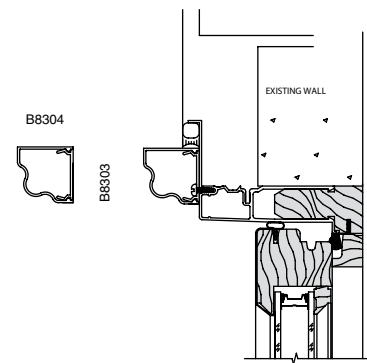
### BACKBAND TRIM

Profile B843 (1 piece, for rectangular units only) or Profile BU823 with Profile B822 (2 piece, for radius units only), coupled with Profile BU804, make up the factory-applied backband trim. Colored to match the unit. No nailing fin is applied to the backband trim.



### HISTORIC BRICKMOULD

Profile BU866 is used in conjunction with trim receivers. Field-applied only. Colored to match the unit.



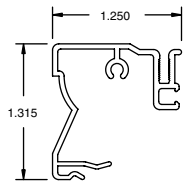
### FIELD-APPLIED CASING

Profile B8304, coupled with Profile B8303, make up the field-applied casing. Colored to match the units. No nailing fin is applied.

NOTE: Drawings are not to scale.

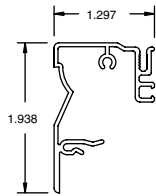
# ULTRA SERIES | ACCESSORIES

## ULTRA ACCESSORY PROFILES



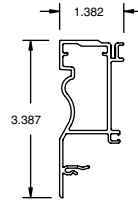
**B802**

2" Brickmould without Leg  
head & side jamb  
(all Ultra products)



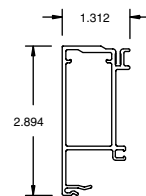
**B820**

1-15/16" Brickmould with Leg  
head & side jamb  
(all Ultra products)



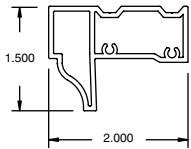
**B821**

3-1/2" Brickmould with Leg  
head & side jamb  
(all Ultra products)



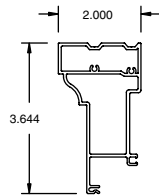
**B822**

3-1/2" Flat Casing without Leg  
head & side jamb  
(all Ultra products)



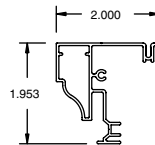
**BU823**

Backband  
(all Ultra products)



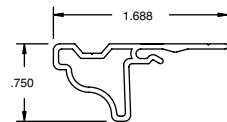
**B843**

3-1/2" Flat Casing with Backband  
(all Ultra products)



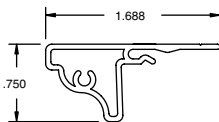
**BU834**

Receiver Trim Backband Profile  
(all Ultra products)



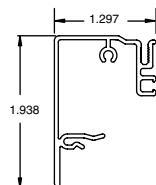
**B842H**

Ogee Trim - head  
(all Ultra products)



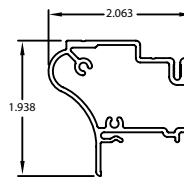
**B842S**

Ogee Trim - side  
(all Ultra products)



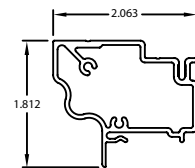
**B860**

2" Flat Casing  
(all Ultra products)



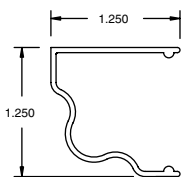
**BU865**

Bull Nose Casing  
(all Ultra products)



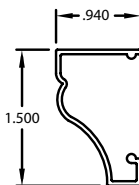
**BU866**

Historic Trim  
(all Ultra products)



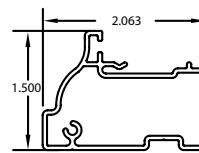
**B8304**

Chicago Brickmould head & side  
(all Ultra products)



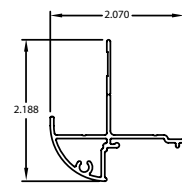
**BU847**

Snap-on Brickmould  
(all Ultra products)



**BU864**

Pavilion Brickmould  
(all Ultra products)

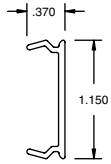


**B8329**

Stucco Casing  
(all Ultra products)

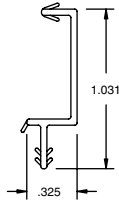
NOTE: Drawings are not to scale.

## ULTRA ACCESSORY PROFILES



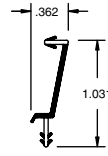
**B8303**

Chicago Brickmould head & side clip  
(all Ultra products)



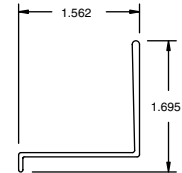
**BU804**

PVC Trim Holder  
(all Ultra products)



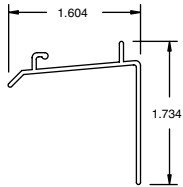
**BU844**

PVC Trim Holder  
(Ultra half-circle radius units)



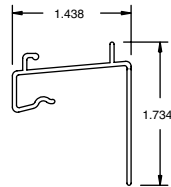
**BU827**

Radius Nailing Fin with Drip  
(Ultra half-circle radius units)



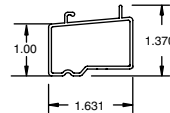
**BU806**

Sill Drip  
(all Ultra products)



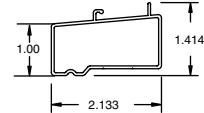
**BU824**

Traditional Sill Nosing  
(all Ultra products)



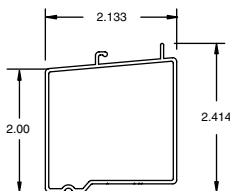
**B8309**

1-5/8" Projected Sill Nosing  
(all Ultra products)



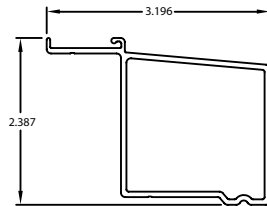
**B8310**

2-1/8" Projected Sill Nosing  
(all Ultra products)



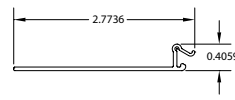
**B8321**

2-1/8" Historic Nosing  
(all Ultra Products)



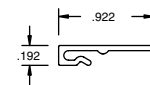
**B8330**

Stucco Trim Sill Nosing  
(all Ultra products)



**BU839**

2-1/2" Sill Extender  
(all Ultra products)



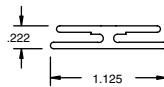
**BU825**

Head & Sill Trim  
(Ultra bow & bay units)



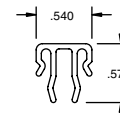
**BU805**

Mullion & Transom Splice  
(all Ultra products)



**BU835**

1-1/8" Stepped Mull "H" Splice  
(all Ultra products)



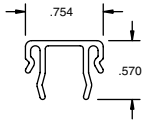
**BU817**

1/4" Mull Cover  
(all Ultra products)

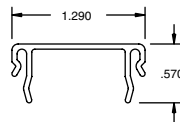
NOTE: Drawings are not to scale.

# ULTRA SERIES | ACCESSORIES

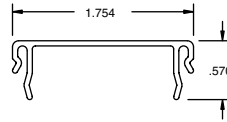
## ULTRA ACCESSORY PROFILES



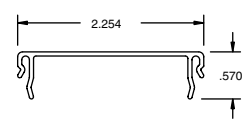
**BU813**  
1/2" Mull Cover  
(all Ultra products)



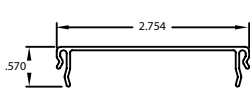
**BU818**  
1" Mull Cover  
(all Ultra products)



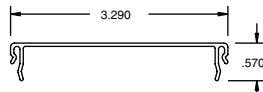
**BU814**  
1-1/2" Mull Cover  
(all Ultra products)



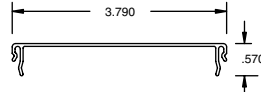
**BU815**  
2" Mull Cover  
(all Ultra products)



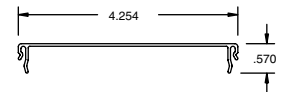
**BU875**  
2.5" Mull Cover  
(all Ultra products)



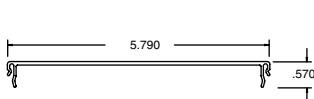
**BU819**  
3" Mull Cover  
(all Ultra products)



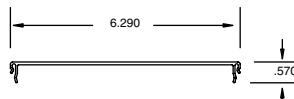
**BU829**  
3-1/2" Mull Cover  
(all Ultra products)



**BU816**  
4" Mull Cover  
(all Ultra products)



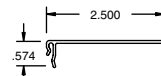
**BU861**  
5-1/2" Mull Cover  
(all Ultra products)



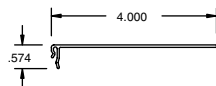
**BU852**  
6" Mull Cover  
(all Ultra products)



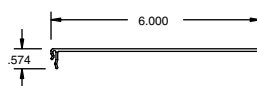
**B836**  
1" Frame Expander  
(all Ultra products)



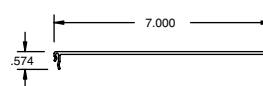
**BU837**  
2-1/2" Frame Expander  
(all Ultra products)



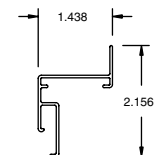
**BU832**  
4" Frame Expander  
(all Ultra products)



**B831**  
6" Frame Expander  
(all Ultra products)



**BU833**  
7" Frame Expander  
(all Ultra products)



**B8308**  
Wide Flat Receiver  
perimeter expander trim  
(all Ultra products)

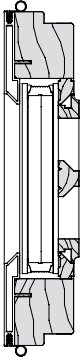
NOTE: Drawings are not to scale.



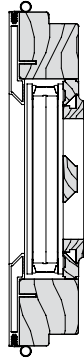


# ULTRA SERIES | DIVIDED LITES

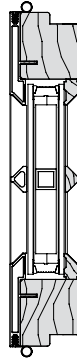
## DIVIDED LITE CROSS SECTION DRAWINGS



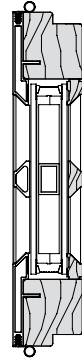
7/8" beveled removable grilles



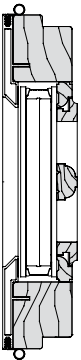
1-1/8" beveled removable grilles



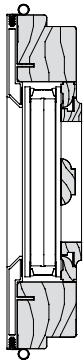
5/8" beveled PDL



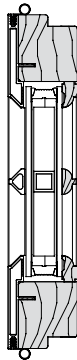
7/8" beveled PDL



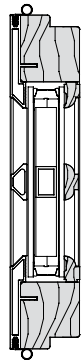
7/8" ovolo removable grilles



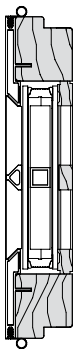
1-1/8" ovolo removable grilles



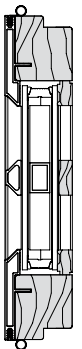
5/8" ovolo PDL



7/8" ovolo PDL



5/8" square PDL



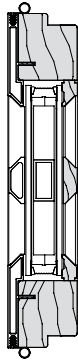
7/8" square PDL

### NOTES:

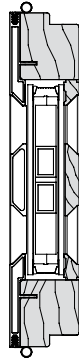
Drawings are not to scale.

Removable grilles are not available with a square profile.

DIVIDED LITE CROSS SECTION DRAWINGS



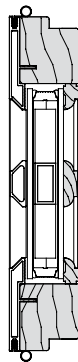
1-1/8" beveled PDL



1-3/4" beveled PDL



2-1/4" beveled PDL



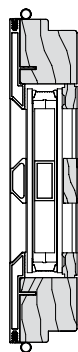
1-1/8" ovolo PDL



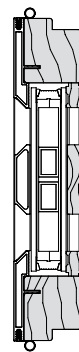
1-3/4" ovolo PDL



2-1/4" ovolo PDL



1-1/8" square PDL



1-3/4" square PDL



2-1/4" square PDL

NOTE: Drawings are not to scale.







## TECHNICAL DATA

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CLEAR OPENINGS  
188

3D MODELS  
200

ENERGY PERFORMANCE  
202

TECHNICAL

Kolbe windows and doors offer not only superior craftsmanship, but also superior performance. Our windows and doors undergo rigorous testing to ensure the highest quality products available. With Kolbe's participation in programs such as the ENERGY STAR and WDMA Hallmark Certification programs, you can rest assured that our products are designed to meet and exceed today's stricter building codes and standards for energy efficiency.



# CLEAR OPENING DIMENSIONS

## ROUGH OPENING RECOMMENDATIONS:

The Kolbe standard rough opening dimensions published in our product literature are provided as a guideline to maintain a minimum 1/4" space between the window or patio door and the building structure. There are certain situations where Kolbe recommends a gap larger than our published 1/4" standard:

- When installation clips are used, the gap should be increased to 1/2" on the sides, top and bottom of the unit
- When mulls are installed in the opening, the gap all around should be increased to 1/2". For installation consistency, the same gap should be used on all units in the project
- If a sill pan drainage system is used, the gap should be increased to 1/2" on the top and bottom of the unit

Because every installation is different, Kolbe strongly recommends consultation with the local supplier or an experienced contractor, architect or structural engineer prior to the installation of any Kolbe product. Installation of Kolbe products, including sizing of rough opening, method of attachment, fastener selection, and code compliance is the sole responsibility of the architect, building owner, contractor and/or consumer. Unless otherwise specified, if units are ordered by rough opening, Kolbe will size the units using our standard minimum 1/4" gap - regardless of the options or construction of the product ordered.

## DEFINITIONS OF ACCEPTABLE EMERGENCY ESCAPE & RESCUE OPENINGS:

"Egress" has long been the term used to describe the clear opening dimensions of a window or door necessary to enter or exit a building in case of an emergency. With the release of the International Building Code (IBC) and International Residential Code (IRC), "egress" is no longer the appropriate term.

The International Codes (IBC 2000 & 2003, IRC 2000 & 2003) now use the phrase "Emergency Escape & Rescue Opening." IBC and IRC have set the following as basic requirements for Emergency Escape & Rescue Openings.

- Minimum Opening Width: 20 inches (508 mm)
- Minimum Opening Height: 24 inches (610 mm)
- Minimum Opening Area: 5.7 sq. ft. (0.53 m<sup>2</sup>)

### Note:

Please check your local codes to confirm that these Emergency Escape & Rescue Opening requirements are applicable. Other requirements may also apply.

## NOTES FOR CASEMENT WINDOWS:

- Clear opening widths shown are for standard casements with multi-point locks and concealed hinges. If the following hinge options are used, the clear opening widths will need to be adjusted as noted:

**Concealed Euro Hinges** - The Euro hinge is the default hinge used when standard concealed adjustable casement hinges cannot be utilized (radius head units, high performance units and impact performance units), or if this type of hinge is requested.

In most cases single-arm operators are used with Euro hinges, which changes the clear opening widths. For units with this type of hinge, add 3-3/4" to widths shown for one sash open, and 5-3/4" for "E" Series. For French casements add 7-1/2" to widths shown for two sash open. Two sash open may or may not be considered as an acceptable emergency escape and rescue opening per the local building inspector.

- Shaded units meet most national building codes for emergency escape and rescue requirements

Crank-Out Casements						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
S12	1.03	7-3/4"	19-1/8"	1.18	1.62	2.67
S126	1.35	7-3/4"	25-1/8"	1.58	2.13	3.33
S13	1.68	7-3/4"	31-1/8"	1.98	2.63	4.00
S136	2.00	7-3/4"	37-1/8"	2.38	3.14	4.67
S14	2.32	7-3/4"	43-1/8"	2.78	3.65	5.33
S146	2.64	7-3/4"	49-1/8"	3.18	4.16	6.00
S15	2.97	7-3/4"	55-1/8"	3.58	4.67	6.67
S156	3.29	7-3/4"	61-1/8"	3.99	5.17	7.33
S16	3.61	7-3/4"	67-1/8"	4.39	5.68	8.00
N12	1.56	11-3/4"	19-1/8"	1.67	2.15	3.33
N126	2.05	11-3/4"	25-1/8"	2.24	2.82	4.17
N13	2.54	11-3/4"	31-1/8"	2.80	3.50	5.00
N136	3.03	11-3/4"	37-1/8"	3.37	4.17	5.83
N14	3.52	11-3/4"	43-1/8"	3.94	4.85	6.67
N146	4.01	11-3/4"	49-1/8"	4.51	5.52	7.50
N15	4.50	11-3/4"	55-1/8"	5.07	6.20	8.33
N156	4.99	11-3/4"	61-1/8"	5.64	6.87	9.17
N16	5.48	11-3/4"	67-1/8"	6.21	7.55	10.00
W12	2.09	15-3/4"	19-1/8"	2.16	2.68	4.00
W126	2.75	15-3/4"	25-1/8"	2.89	3.52	5.00
W13	3.40	15-3/4"	31-1/8"	3.63	4.36	6.00
W136	4.06	15-3/4"	37-1/8"	4.36	5.20	7.00
W14	4.72	15-3/4"	43-1/8"	5.09	6.05	8.00
W146	5.37	15-3/4"	49-1/8"	5.83	6.89	9.00
W15	6.03	15-3/4"	55-1/8"	6.56	7.73	10.00
W156	6.69	15-3/4"	61-1/8"	7.30	8.57	11.00
W16	7.34	15-3/4"	67-1/8"	8.03	9.41	12.00
L12	2.62	19-3/4"	19-1/8"	2.65	3.21	4.67
L126	3.45	19-3/4"	25-1/8"	3.55	4.22	5.83
L13	4.27	19-3/4"	31-1/8"	4.45	5.23	7.00
L136	5.09	19-3/4"	37-1/8"	5.35	6.24	8.17
L14	5.91	19-3/4"	43-1/8"	6.25	7.24	9.33
L146	6.74	19-3/4"	49-1/8"	7.15	8.25	10.50
L15	7.56	19-3/4"	55-1/8"	8.05	9.26	11.67
L156	8.38	19-3/4"	61-1/8"	8.95	10.27	12.83
L16	9.21	19-3/4"	67-1/8"	9.86	11.27	14.00
X12	2.89	21-3/4"	19-1/8"	2.89	3.48	5.00
X126	3.79	21-3/4"	25-1/8"	3.88	4.57	6.25
X13	4.70	21-3/4"	31-1/8"	4.86	5.66	7.50
X136	5.61	21-3/4"	37-1/8"	5.84	6.75	8.75
X14	6.51	21-3/4"	43-1/8"	6.83	7.84	10.00
X146	7.42	21-3/4"	49-1/8"	7.81	8.93	11.25
X15	8.33	21-3/4"	55-1/8"	8.80	10.02	12.50
X156	9.23	21-3/4"	61-1/8"	9.78	11.12	13.75
X16	10.14	21-3/4"	67-1/8"	10.77	12.21	15.00
E13	5.57	25-3/4"	31-1/8"	6.09	6.96	9.00
E136	6.64	25-3/4"	37-1/8"	7.33	8.30	10.50
E14	7.71	25-3/4"	43-1/8"	8.56	9.64	12.00
E146	8.78	25-3/4"	49-1/8"	9.80	10.98	13.50
E15	9.86	25-3/4"	55-1/8"	11.03	12.32	15.00
E156	10.93	25-3/4"	61-1/8"	12.27	13.66	16.50
E16	12.00	25-3/4"	67-1/8"	13.50	15.00	18.00



# CLEAR OPENING DIMENSIONS

Crank-Out EP Casements						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
S12	0.92	6-15/16"	19-1/8"	1.18	1.54	2.67
S126	1.21	6-15/16"	25-1/8"	1.58	2.02	3.33
S13	1.50	6-15/16"	31-1/8"	1.98	2.50	4.00
S136	1.79	6-15/16"	37-1/8"	2.38	2.98	4.67
S14	2.08	6-15/16"	43-1/8"	2.78	3.46	5.33
S146	2.37	6-15/16"	49-1/8"	3.18	3.94	6.00
S15	2.66	6-15/16"	55-1/8"	3.58	4.43	6.67
S156	2.94	6-15/16"	61-1/8"	3.99	4.91	7.33
S16	3.23	6-15/16"	67-1/8"	4.39	5.39	8.00
N12	1.45	10-15/16"	19-1/8"	1.67	2.07	3.33
N126	1.91	10-15/16"	25-1/8"	2.24	2.72	4.17
N13	2.36	10-15/16"	31-1/8"	2.80	3.36	5.00
N136	2.82	10-15/16"	37-1/8"	3.37	4.01	5.83
N14	3.28	10-15/16"	43-1/8"	3.94	4.66	6.67
N146	3.73	10-15/16"	49-1/8"	4.51	5.31	7.50
N15	4.19	10-15/16"	55-1/8"	5.07	5.96	8.33
N156	4.64	10-15/16"	61-1/8"	5.64	6.61	9.17
N16	5.10	10-15/16"	67-1/8"	6.21	7.25	10.00
W12	1.98	14-15/16"	19-1/8"	2.16	2.60	4.00
W126	2.61	14-15/16"	25-1/8"	2.89	3.41	5.00
W13	3.23	14-15/16"	31-1/8"	3.63	4.23	6.00
W136	3.85	14-15/16"	37-1/8"	4.36	5.04	7.00
W14	4.47	14-15/16"	43-1/8"	5.09	5.86	8.00
W146	5.10	14-15/16"	49-1/8"	5.83	6.67	9.00
W15	5.72	14-15/16"	55-1/8"	6.56	7.49	10.00
W156	6.34	14-15/16"	61-1/8"	7.30	8.30	11.00
W16	6.96	14-15/16"	67-1/8"	8.03	9.12	12.00
L12	2.52	18-15/16"	19-1/8"	2.65	3.13	4.67
L126	3.30	18-15/16"	25-1/8"	3.55	4.11	5.83
L13	4.09	18-15/16"	31-1/8"	4.45	5.09	7.00
L136	4.88	18-15/16"	37-1/8"	5.35	6.07	8.17
L14	5.67	18-15/16"	43-1/8"	6.25	7.06	9.33
L146	6.46	18-15/16"	49-1/8"	7.15	8.04	10.50
L15	7.25	18-15/16"	55-1/8"	8.05	9.02	11.67
L156	8.04	18-15/16"	61-1/8"	8.95	10.00	12.83
L16	8.83	18-15/16"	67-1/8"	9.86	10.98	14.00
X12	2.78	20-15/16"	19-1/8"	2.89	3.40	5.00
X126	3.65	20-15/16"	25-1/8"	3.88	4.46	6.25
X13	4.53	20-15/16"	31-1/8"	4.86	5.53	7.50
X136	5.40	20-15/16"	37-1/8"	5.84	6.59	8.75
X14	6.27	20-15/16"	43-1/8"	6.83	7.66	10.00
X146	7.14	20-15/16"	49-1/8"	7.81	8.72	11.25
X15	8.02	20-15/16"	55-1/8"	8.80	9.79	12.50
X156	8.89	20-15/16"	61-1/8"	9.78	10.85	13.75
X16	9.76	20-15/16"	67-1/8"	10.77	11.92	15.00
E13	5.39	24-15/16"	31-1/8"	6.09	6.82	9.00
E136	6.43	24-15/16"	37-1/8"	7.33	8.14	10.50
E14	7.47	24-15/16"	43-1/8"	8.56	9.45	12.00
E146	8.51	24-15/16"	49-1/8"	9.80	10.77	13.50
E15	9.55	24-15/16"	55-1/8"	11.03	12.08	15.00
E156	10.59	24-15/16"	61-1/8"	12.27	13.40	16.50
E16	11.62	24-15/16"	67-1/8"	13.50	14.71	18.00

Push-out Casements						
Product #	Sq. Ft. Clear Opg.	Clear Opg.		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
S12	1.01	7-1/4"	20"	1.04	1.75	2.67
S126	1.31	7-1/4"	26"	1.41	2.28	3.33
S13	1.61	7-1/4"	32"	1.78	2.81	4.00
S136	1.91	7-1/4"	38"	2.15	3.33	4.67
S14	2.22	7-1/4"	44"	2.52	3.86	5.33
S146	2.52	7-1/4"	50"	2.89	4.38	6.00
S15	2.82	7-1/4"	56"	3.26	4.91	6.67
S156	3.12	7-1/4"	62"	3.63	5.44	7.33
S16	3.42	7-1/4"	68"	4.00	5.96	8.00
N12	1.56	11-1/4"	20"	1.51	2.31	3.33
N126	2.03	11-1/4"	26"	2.05	3.00	4.17
N13	2.50	11-1/4"	32"	2.58	3.69	5.00
N136	2.97	11-1/4"	38"	3.12	4.39	5.83
N14	3.44	11-1/4"	44"	3.65	5.08	6.67
N146	3.91	11-1/4"	50"	4.19	5.77	7.50
N15	4.38	11-1/4"	56"	4.73	6.47	8.33
N156	4.84	11-1/4"	62"	5.26	7.16	9.17
N16	5.31	11-1/4"	68"	5.80	7.85	10.00
W12	2.12	15-1/4"	20"	1.98	2.86	4.00
W126	2.75	15-1/4"	26"	2.68	3.72	5.00
W13	3.39	15-1/4"	32"	3.38	4.58	6.00
W136	4.02	15-1/4"	38"	4.09	5.44	7.00
W14	4.66	15-1/4"	44"	4.79	6.30	8.00
W146	5.30	15-1/4"	50"	5.49	7.16	9.00
W15	5.93	15-1/4"	56"	6.20	8.02	10.00
W156	6.57	15-1/4"	62"	6.90	8.88	11.00
W16	7.20	15-1/4"	68"	7.60	9.74	12.00
L12	2.67	19-1/4"	20"	2.45	3.42	4.67
L126	3.48	19-1/4"	26"	3.32	4.45	5.83
L13	4.28	19-1/4"	32"	4.19	5.47	7.00
L136	5.08	19-1/4"	38"	5.06	6.50	8.17
L14	5.88	19-1/4"	44"	5.93	7.52	9.33
L146	6.68	19-1/4"	50"	6.80	8.55	10.50
L15	7.49	19-1/4"	56"	7.67	9.58	11.67
L156	8.29	19-1/4"	62"	8.53	10.60	12.83
L16	9.09	19-1/4"	68"	9.40	11.63	14.00

## NOTES FOR PUSH-OUT CASEMENT WINDOWS:

- > Clear opening widths shown are for units with friction hinges and no screen. If the following screen options are used, the clear opening widths will need to be adjusted as noted:

### Swinging screen:

- Vent area decreases by 7%

### Retractable screen:

- Vent area decreases by 23%
- Subtract 21/32" for clear opening width
- Subtract 2-13/16" for clear opening height

### Friction Adjuster with no screen or with swinging screen:

- Add 4-15/32" (or 5-31/32" for "E" Series) for clear opening width

### Friction Adjuster with retractable screen:

- Add 3-13/16" (or 5-5/16" for "E" Series) for clear opening width

- > Two sash open may or may not be considered as an acceptable emergency escape and rescue opening per the local building inspector

- > Shaded units meet most national building codes for emergency escape and rescue requirements

# CLEAR OPENING DIMENSIONS

Push-out Casements (continued)						
Product #	Sq. Ft. Clear Opg.	Clear Opg.		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
X12	2.95	21-1/4"	20"	2.68	3.70	5.00
X126	3.84	21-1/4"	26"	3.63	4.81	6.25
X13	4.72	21-1/4"	32"	4.59	5.92	7.50
X136	5.61	21-1/4"	38"	5.54	7.03	8.75
X14	6.49	21-1/4"	44"	6.49	8.14	10.00
X146	7.38	21-1/4"	50"	7.45	9.24	11.25
X15	8.26	21-1/4"	56"	8.40	10.35	12.50
X156	9.15	21-1/4"	62"	9.35	11.46	13.75
X16	10.03	21-1/4"	68"	10.31	12.57	15.00
E13	5.72	25-3/4"	32"	5.79	7.25	9.00
E136	6.80	25-3/4"	38"	6.99	8.61	10.50
E14	7.87	25-3/4"	44"	8.20	9.97	12.00
E146	8.94	25-3/4"	50"	9.40	11.33	13.50
E15	10.01	25-3/4"	56"	10.60	12.69	15.00
E156	11.09	25-3/4"	62"	11.81	14.05	16.50
E16	12.16	25-3/4"	68"	13.01	15.41	18.00

Crank-Out Awnings						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2618	1.94	26-3/16"	10-11/16"	2.24	2.75	4.17
2620	2.67	26-3/16"	14-11/16"	2.89	3.48	5.00
2626	3.76	26-3/16"	20-11/16"	3.88	4.57	6.25
2630	4.85	26-3/16"	26-11/16"	4.86	5.66	7.50
3018	2.39	32-3/16"	10-11/16"	2.80	3.38	5.00
3020	3.28	32-3/16"	14-11/16"	3.63	4.27	6.00
3026	4.62	32-3/16"	20-11/16"	4.86	5.62	7.50
3030	5.97	32-3/16"	26-11/16"	6.09	6.96	9.00
3618	2.83	38-3/16"	10-11/16"	3.37	4.01	5.83
3620	3.89	38-3/16"	14-11/16"	4.36	5.07	7.00
3626	5.49	38-3/16"	20-11/16"	5.84	6.66	8.75
3630	7.08	38-3/16"	26-11/16"	7.33	8.25	10.50
4018	3.28	44-3/16"	10-11/16"	3.94	4.64	6.67
4020	4.51	44-3/16"	14-11/16"	5.09	5.87	8.00
4026	6.35	44-3/16"	20-11/16"	6.83	7.71	10.00
4030	8.19	44-3/16"	26-11/16"	8.56	9.55	12.00

French Casements - Dual Arm Operator								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim
	1 Open	2 Open	1 Open	2 Open				
N23	2.68	5.90	12-13/32"	27-5/16"	31-1/8"	5.95	7.82	10.00
N236	3.20	7.04	12-13/32"	27-5/16"	37-1/8"	7.16	9.33	11.67
N24	3.72	8.18	12-13/32"	27-5/16"	43-1/8"	8.36	10.84	13.33
N246	4.23	9.32	12-13/32"	27-5/16"	49-1/8"	9.57	12.35	15.00
N25	4.75	10.46	12-13/32"	27-5/16"	55-1/8"	10.78	13.85	16.67
N256	5.27	11.59	12-13/32"	27-5/16"	61-1/8"	11.98	15.36	18.33
N26	5.78	12.73	12-13/32"	27-5/16"	67-1/8"	13.19	16.87	20.00
W23	3.55	7.63	16-13/32"	35-5/16"	31-1/8"	7.60	9.55	12.00
W236	4.23	9.10	16-13/32"	35-5/16"	37-1/8"	9.14	11.39	14.00
W24	4.91	10.58	16-13/32"	35-5/16"	43-1/8"	10.68	13.23	16.00
W246	5.60	12.05	16-13/32"	35-5/16"	49-1/8"	12.22	15.07	18.00
W25	6.28	13.52	16-13/32"	35-5/16"	55-1/8"	13.76	16.92	20.00
X23	4.84	10.23	22-13/32"	47-5/16"	31-1/8"	10.07	12.14	15.00
X236	5.78	12.20	22-13/32"	47-5/16"	37-1/8"	12.11	14.49	17.50
X24	6.71	14.17	22-13/32"	47-5/16"	43-1/8"	14.15	16.83	20.00
X246	7.64	16.14	22-13/32"	47-5/16"	49-1/8"	16.19	19.17	22.50
X25	8.58	18.11	22-13/32"	47-5/16"	55-1/8"	18.22	21.51	25.00

## NOTES FOR PUSH-OUT CASEMENT WINDOWS:

- Clear opening widths shown are for units with friction hinges and no screen. If the following screen options are used, the clear opening widths will need to be adjusted as noted:

### Swinging screen:

- Vent area decreases by 7%

### Retractable screen:

- Vent area decreases by 23%
- Subtract 21/32" for clear opening width
- Subtract 2-13/16" for clear opening height

### Friction Adjuster with no screen or with swinging screen:

- Add 4-15/32" (or 5-31/32 for 'E' Series) for clear opening width

### Friction Adjuster with retractable screen:

- Add 3-13/16" (or 5-5/16" for 'E' Series) for clear opening width

- Two sash open may or may not be considered as an acceptable emergency escape and rescue opening per the local building inspector

- Shaded units meet most national building codes for emergency escape and rescue requirements

## NOTES FOR AWNING WINDOWS:

- Awnings may not be considered emergency escape and rescue windows
- Clear opening dimensions determined after unhooking and retracting operator arms and pushing sash open to 90°
- If concealed Euro hinges are used in lieu of concealed hinges, add 3-3/4" to the clear opening heights shown here

# CLEAR OPENING DIMENSIONS

Sterling Double Hungs						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
1614	1.54	17-31/32"	12-3/8"	2.71	1.54	5.44
1616	1.79	17-31/32"	14-3/8"	3.13	1.79	6.04
1620	2.29	17-31/32"	18-3/8"	3.96	2.29	7.23
1622	2.54	17-31/32"	20-3/8"	4.38	2.54	7.83
1624	2.79	17-31/32"	22-3/8"	4.79	2.79	8.43
1626	3.04	17-31/32"	24-3/8"	5.21	3.04	9.02
1628	3.29	17-31/32"	26-3/8"	5.63	3.29	9.62
1630	3.54	17-31/32"	28-3/8"	6.04	3.54	10.22
1632	3.79	17-31/32"	30-3/8"	6.46	3.79	10.82
1634	4.04	17-31/32"	32-3/8"	6.88	4.04	11.41
1636	4.29	17-31/32"	34-3/8"	7.29	4.29	12.01
2014	1.89	21-31/32"	12-3/8"	3.43	1.89	6.45
2016	2.19	21-31/32"	14-3/8"	3.96	2.19	7.16
2020	2.80	21-31/32"	18-3/8"	5.01	2.80	8.58
2022	3.11	21-31/32"	20-3/8"	5.54	3.11	9.29
2024	3.41	21-31/32"	22-3/8"	6.07	3.41	9.99
2026	3.72	21-31/32"	24-3/8"	6.60	3.72	10.70
2028	4.02	21-31/32"	26-3/8"	7.13	4.02	11.41
2030	4.33	21-31/32"	28-3/8"	7.65	4.33	12.12
2032	4.63	21-31/32"	30-3/8"	8.18	4.63	12.83
2034	4.94	21-31/32"	32-3/8"	8.71	4.94	13.54
2036	5.24	21-31/32"	34-3/8"	9.24	5.24	14.24
2414	2.23	25-31/32"	12-3/8"	4.15	2.23	7.46
2416	2.59	25-31/32"	14-3/8"	4.79	2.59	8.28
2420	3.31	25-31/32"	18-3/8"	6.07	3.31	9.92
2422	3.67	25-31/32"	20-3/8"	6.71	3.67	10.74
2424	4.04	25-31/32"	22-3/8"	7.35	4.04	11.56
2426	4.40	25-31/32"	24-3/8"	7.99	4.40	12.38
2428	4.76	25-31/32"	26-3/8"	8.63	4.76	13.20
2430	5.12	25-31/32"	28-3/8"	9.26	5.12	14.02
2432	5.48	25-31/32"	30-3/8"	9.90	5.48	14.84
2434	5.84	25-31/32"	32-3/8"	10.54	5.84	15.66
2436	6.20	25-31/32"	34-3/8"	11.18	6.20	16.48
2614	2.40	27-31/32"	12-3/8"	4.51	2.40	7.97
2616	2.79	27-31/32"	14-3/8"	5.21	2.79	8.85
2620	3.57	27-31/32"	18-3/8"	6.60	3.57	10.60
2622	3.96	27-31/32"	20-3/8"	7.29	3.96	11.47
2624	4.35	27-31/32"	22-3/8"	7.99	4.35	12.35
2626	4.73	27-31/32"	24-3/8"	8.68	4.73	13.22
2628	5.12	27-31/32"	26-3/8"	9.38	5.12	14.10
2630	5.51	27-31/32"	28-3/8"	10.07	5.51	14.97
2632	5.90	27-31/32"	30-3/8"	10.76	5.90	15.85
2634	6.29	27-31/32"	32-3/8"	11.46	6.29	16.72
2636	6.68	27-31/32"	34-3/8"	12.15	6.68	17.60

Sterling Double Hungs (continued)						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2814	2.58	29-31/32"	12-3/8"	4.88	2.58	8.48
2816	2.99	29-31/32"	14-3/8"	5.63	2.99	9.41
2820	3.82	29-31/32"	18-3/8"	7.13	3.82	11.27
2822	4.24	29-31/32"	20-3/8"	7.88	4.24	12.20
2824	4.66	29-31/32"	22-3/8"	8.63	4.66	13.13
2826	5.07	29-31/32"	24-3/8"	9.38	5.07	14.06
2828	5.49	29-31/32"	26-3/8"	10.13	5.49	14.99
2830	5.91	29-31/32"	28-3/8"	10.88	5.91	15.92
2832	6.32	29-31/32"	30-3/8"	11.63	6.32	16.85
2834	6.74	29-31/32"	32-3/8"	12.38	6.74	17.78
2836	7.15	29-31/32"	34-3/8"	13.13	7.15	18.71
3014	2.75	31-31/32"	12-3/8"	5.24	2.75	8.98
3016	3.19	31-31/32"	14-3/8"	6.04	3.19	9.97
3020	4.08	31-31/32"	18-3/8"	7.65	4.08	11.94
3022	4.52	31-31/32"	20-3/8"	8.46	4.52	12.93
3024	4.97	31-31/32"	22-3/8"	9.26	4.97	13.91
3026	5.41	31-31/32"	24-3/8"	10.07	5.41	14.90
3028	5.86	31-31/32"	26-3/8"	10.88	5.86	15.89
3030	6.30	31-31/32"	28-3/8"	11.68	6.30	16.87
3032	6.74	31-31/32"	30-3/8"	12.49	6.74	17.86
3034	7.19	31-31/32"	32-3/8"	13.29	7.19	18.84
3036	7.63	31-31/32"	34-3/8"	14.10	7.63	19.83
3214	2.92	33-31/32"	12-3/8"	5.60	2.92	9.49
3216	3.39	33-31/32"	14-3/8"	6.46	3.39	10.53
3220	4.33	33-31/32"	18-3/8"	8.18	4.33	12.61
3222	4.81	33-31/32"	20-3/8"	9.04	4.81	13.66
3224	5.28	33-31/32"	22-3/8"	9.90	5.28	14.70
3226	5.75	33-31/32"	24-3/8"	10.76	5.75	15.74
3228	6.22	33-31/32"	26-3/8"	11.63	6.22	16.78
3230	6.69	33-31/32"	28-3/8"	12.49	6.69	17.82
3232	7.17	33-31/32"	30-3/8"	13.35	7.17	18.86
3234	7.64	33-31/32"	32-3/8"	14.21	7.64	19.91
3236	8.11	33-31/32"	34-3/8"	15.07	8.11	20.95
3614	3.26	37-31/32"	12-3/8"	6.32	3.26	10.50
3616	3.79	37-31/32"	14-3/8"	7.29	3.79	11.65
3620	4.84	37-31/32"	18-3/8"	9.24	4.84	13.96
3622	5.37	37-31/32"	20-3/8"	10.21	5.37	15.11
3624	5.90	37-31/32"	22-3/8"	11.18	5.90	16.26
3626	6.43	37-31/32"	24-3/8"	12.15	6.43	17.42
3628	6.95	37-31/32"	26-3/8"	13.13	6.95	18.57
3630	7.48	37-31/32"	28-3/8"	14.10	7.48	19.72
3632	8.01	37-31/32"	30-3/8"	15.07	8.01	20.88
3634	8.54	37-31/32"	32-3/8"	16.04	8.54	22.03
3636	9.06	37-31/32"	34-3/8"	17.01	9.06	23.18

## NOTES FOR DOUBLE HUNG WINDOWS:

- For Sterling high performance units, deduct 1/2" from the clear opening heights
- For Magnum high performance units, deduct 11/16" from the clear opening heights
- Shaded units meet most national building codes for emergency escape and rescue requirements

# CLEAR OPENING DIMENSIONS

Sterling Double Hungs (continued)						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
4014	3.61	41-31/32"	12-3/8"	7.04	3.61	11.51
4016	4.19	41-31/32"	14-3/8"	8.13	4.19	12.78
4020	5.36	41-31/32"	18-3/8"	10.29	5.36	15.30
4022	5.94	41-31/32"	20-3/8"	11.38	5.94	16.57
4024	6.52	41-31/32"	22-3/8"	12.46	6.52	17.83
4026	7.10	41-31/32"	24-3/8"	13.54	7.10	19.10
4028	7.69	41-31/32"	26-3/8"	14.63	7.69	20.36
4030	8.27	41-31/32"	28-3/8"	15.71	8.27	21.62
4032	8.85	41-31/32"	30-3/8"	16.79	8.85	22.89
4034	9.44	41-31/32"	32-3/8"	17.88	9.44	24.15
4036	10.02	41-31/32"	34-3/8"	18.96	10.02	25.42
1624/36	2.79	17-31/32"	22-3/8"	6.04	2.79	10.22
2024/36	3.41	21-31/32"	22-3/8"	7.65	3.41	12.12
2424/36	4.04	25-31/32"	22-3/8"	9.26	4.04	14.02
2624/36	4.35	27-31/32"	22-3/8"	10.01	4.35	14.97
2824/36	4.66	29-31/32"	22-3/8"	10.88	4.66	15.92
3024/36	4.97	31-31/32"	22-3/8"	11.68	4.97	16.87
3224/36	5.28	33-31/32"	22-3/8"	12.49	5.28	17.82
3624/36	5.90	37-31/32"	22-3/8"	14.10	5.90	19.72
4024/36	6.52	41-31/32"	22-3/8"	15.71	6.52	21.62

Magnum Double Hungs						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
3062	7.56	33-3/8"	32-5/8"	12.92	7.56	20.44
3066	7.46	33-3/8"	34-5/8"	13.71	7.46	21.49
3072	8.95	33-3/8"	38-5/8"	15.30	8.95	23.61
30710	9.88	33-3/8"	42-5/8"	16.88	9.88	25.73
3086	10.81	33-3/8"	46-5/8"	18.47	10.81	27.85
30810	11.27	33-3/8"	48-5/8"	19.26	11.27	28.91
3462	8.47	37-3/8"	32-5/8"	14.73	8.47	22.58
3466	8.99	37-3/8"	34-5/8"	15.63	8.99	23.75
3472	10.03	37-3/8"	38-5/8"	17.44	10.03	26.09
34710	11.06	37-3/8"	42-5/8"	19.25	11.06	28.43
3486	12.10	37-3/8"	46-5/8"	21.06	12.10	30.77
34810	12.62	37-3/8"	48-5/8"	21.96	12.62	31.94

## NOTES FOR DOUBLE HUNG WINDOWS:

- For Sterling high performance units, deduct 1/2" from the clear opening heights
- For Magnum high performance units, deduct 11/16" from the clear opening heights
- For Traditional single hungs, deduct 1/4" from the clear opening widths
- Shaded units meet most national building codes for emergency escape and rescue requirements

## MAJESTA DOUBLE HUNG WINDOWS:

There are no standard sizes for Majesta windows.

Minimum Frame Size = 42" wide x 67-1/2" high

Minimum Glass Size = 34-5/8" wide x 28-7/16" (per sash)

Emergency Escape and Rescue Clearance = 37" wide x 24" high

Magnum Double Hungs (continued)						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
3862	9.37	41-3/8"	32-5/8"	16.54	9.37	24.72
3866	9.95	41-3/8"	34-5/8"	17.55	9.95	26.01
3872	11.10	41-3/8"	38-5/8"	19.58	11.10	28.57
38710	12.25	41-3/8"	42-5/8"	21.61	12.25	31.13
3886	13.40	41-3/8"	46-5/8"	23.65	13.40	33.69
38810	13.97	41-3/8"	48-5/8"	24.66	13.97	34.97
4062	10.28	45-3/8"	32-5/8"	18.34	10.28	26.87
4066	10.91	45-3/8"	34-5/8"	19.47	10.91	28.26
4072	12.17	45-3/8"	38-5/8"	21.72	12.17	31.05
40710	13.43	45-3/8"	42-5/8"	23.98	13.43	33.83
4086	14.69	45-3/8"	46-5/8"	26.23	14.69	36.61
40810	15.32	45-3/8"	48-5/8"	27.36	15.32	38.01
4462	11.19	49-3/8"	32-5/8"	20.15	11.19	29.01
4466	11.87	49-3/8"	34-5/8"	21.39	11.87	30.52
4472	13.24	49-3/8"	38-5/8"	23.87	13.24	33.52
44710	14.62	49-3/8"	42-5/8"	26.34	14.62	36.53
4486	15.99	49-3/8"	46-5/8"	28.82	15.99	39.54
44810	16.67	49-3/8"	48-5/8"	30.06	16.67	41.04
4862	12.09	53-3/8"	32-5/8"	21.96	12.09	31.16
4866	12.83	53-3/8"	34-5/8"	23.31	12.83	32.77
4872	14.32	53-3/8"	38-5/8"	26.01	14.32	36.00
48710	15.80	53-3/8"	42-5/8"	28.71	15.80	39.23
4886	17.28	53-3/8"	46-5/8"	31.41	17.28	42.46
48810	18.02	53-3/8"	48-5/8"	32.75	18.02	44.07

Traditional Double Hungs						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
1614	1.70	18-1/4"	13-7/16"	2.71	1.70	5.44
1616	1.96	18-1/4"	15-7/16"	3.13	1.96	6.04
1620	2.46	18-1/4"	19-7/16"	3.96	2.46	7.23
1622	2.72	18-1/4"	21-7/16"	4.38	2.72	7.83
1624	2.97	18-1/4"	23-7/16"	4.79	2.97	8.43
1626	3.22	18-1/4"	25-7/16"	5.21	3.22	9.02
1628	3.48	18-1/4"	27-7/16"	5.63	3.48	9.62
1630	3.73	18-1/4"	29-7/16"	6.04	3.73	10.22
1632	3.98	18-1/4"	31-7/16"	6.46	3.98	10.82
1634	4.24	18-1/4"	33-7/16"	6.88	4.24	11.41
1636	4.49	18-1/4"	35-7/16"	7.29	4.49	12.01
2014	2.08	22-1/4"	13-7/16"	3.43	2.08	6.45
2016	2.39	22-1/4"	15-7/16"	3.96	2.39	7.16
2020	3.00	22-1/4"	19-7/16"	5.01	3.00	8.58
2022	3.31	22-1/4"	21-7/16"	5.54	3.31	9.29
2024	3.62	22-1/4"	23-7/16"	6.07	3.62	9.99

# CLEAR OPENING DIMENSIONS

Traditional Double Hungs						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2026	3.93	22-1/4"	25-7/16"	6.60	3.93	10.70
2028	4.24	22-1/4"	27-7/16"	7.13	4.24	11.41
2030	4.55	22-1/4"	29-7/16"	7.65	4.55	12.12
2032	4.86	22-1/4"	31-7/16"	8.18	4.86	12.83
2034	5.17	22-1/4"	33-7/16"	8.71	5.17	13.54
2036	5.48	22-1/4"	35-7/16"	9.24	5.48	14.24
2414	2.45	26-1/4"	13-7/16"	4.15	2.45	7.46
2416	2.81	26-1/4"	15-7/16"	4.79	2.81	8.28
2420	3.54	26-1/4"	19-7/16"	6.07	3.54	9.92
2422	3.91	26-1/4"	21-7/16"	6.71	3.91	10.74
2424	4.27	26-1/4"	23-7/16"	7.35	4.27	11.56
2426	4.64	26-1/4"	25-7/16"	7.99	4.64	12.38
2428	5.00	26-1/4"	27-7/16"	8.63	5.00	13.20
2430	5.37	26-1/4"	29-7/16"	9.26	5.37	14.02
2432	5.73	26-1/4"	31-7/16"	9.90	5.73	14.84
2434	6.10	26-1/4"	33-7/16"	10.54	6.10	15.66
2436	6.46	26-1/4"	35-7/16"	11.18	6.46	16.48
2614	2.64	28-1/4"	13-7/16"	4.51	2.64	7.97
2616	3.03	28-1/4"	15-7/16"	5.21	3.03	8.85
2620	3.81	28-1/4"	19-7/16"	6.60	3.81	10.60
2622	4.21	28-1/4"	21-7/16"	7.29	4.21	11.47
2624	4.60	28-1/4"	23-7/16"	7.99	4.60	12.35
2626	4.99	28-1/4"	25-7/16"	8.68	4.99	13.22
2628	5.38	28-1/4"	27-7/16"	9.38	5.38	14.10
2630	5.78	28-1/4"	29-7/16"	10.07	5.78	14.97
2632	6.17	28-1/4"	31-7/16"	10.76	6.17	15.85
2634	6.56	28-1/4"	33-7/16"	11.46	6.56	16.72
2636	6.95	28-1/4"	35-7/16"	12.15	6.95	17.60
2814	2.82	30-1/4"	13-7/16"	4.88	2.82	8.48
2816	3.24	30-1/4"	15-7/16"	5.63	3.24	9.41
2820	4.08	30-1/4"	19-7/16"	7.13	4.08	11.27
2822	4.50	30-1/4"	21-7/16"	7.88	4.50	12.20
2824	4.92	30-1/4"	23-7/16"	8.63	4.92	13.13
2826	5.34	30-1/4"	25-7/16"	9.38	5.34	14.06
2828	5.76	30-1/4"	27-7/16"	10.13	5.76	14.99
2830	6.18	30-1/4"	29-7/16"	10.88	6.18	15.92
2832	6.60	30-1/4"	31-7/16"	11.63	6.60	16.85
2834	7.02	30-1/4"	33-7/16"	12.38	7.02	17.78
2836	7.44	30-1/4"	35-7/16"	13.13	7.44	18.71
3014	3.01	32-1/4"	13-7/16"	5.24	3.01	8.98
3016	3.46	32-1/4"	15-7/16"	6.04	3.46	9.97
3020	4.35	32-1/4"	19-7/16"	7.65	4.35	11.94
3022	4.80	32-1/4"	21-7/16"	8.46	4.80	12.93
3024	5.25	32-1/4"	23-7/16"	9.26	5.25	13.91
3026	5.70	32-1/4"	25-7/16"	10.07	5.70	14.90
3028	6.14	32-1/4"	27-7/16"	10.88	6.14	15.89
3030	6.59	32-1/4"	29-7/16"	11.68	6.59	16.87

Traditional Double Hungs (continued)						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
3032	7.04	32-1/4"	31-7/16"	12.49	7.04	17.86
3034	7.49	32-1/4"	33-7/16"	13.29	7.49	18.84
3036	7.94	32-1/4"	35-7/16"	14.10	7.94	19.83
3214	3.20	34-1/4"	13-7/16"	5.60	3.20	9.49
3216	3.67	34-1/4"	15-7/16"	6.46	3.67	10.53
3220	4.62	34-1/4"	19-7/16"	8.18	4.62	12.61
3222	5.10	34-1/4"	21-7/16"	9.04	5.10	13.66
3224	5.57	34-1/4"	23-7/16"	9.90	5.57	14.70
3226	6.05	34-1/4"	25-7/16"	10.76	6.05	15.74
3228	6.53	34-1/4"	27-7/16"	11.63	6.53	16.78
3230	7.00	34-1/4"	29-7/16"	12.49	7.00	17.82
3232	7.48	34-1/4"	31-7/16"	13.35	7.48	18.86
3234	7.95	34-1/4"	33-7/16"	14.21	7.95	19.91
3236	8.43	34-1/4"	35-7/16"	15.07	8.43	20.95
3614	3.57	38-1/4"	13-7/16"	6.32	3.57	10.50
3616	4.10	38-1/4"	15-7/16"	7.29	4.10	11.65
3620	5.16	38-1/4"	19-7/16"	9.24	5.16	13.96
3622	5.69	38-1/4"	21-7/16"	10.21	5.69	15.11
3624	6.23	38-1/4"	23-7/16"	11.18	6.23	16.26
3626	6.76	38-1/4"	25-7/16"	12.15	6.76	17.42
3628	7.29	38-1/4"	27-7/16"	13.13	7.29	18.57
3630	7.82	38-1/4"	29-7/16"	14.10	7.82	19.72
3632	8.35	38-1/4"	31-7/16"	15.07	8.35	20.88
3634	8.88	38-1/4"	33-7/16"	16.04	8.88	22.03
3636	9.41	38-1/4"	35-7/16"	17.01	9.41	23.18
4014	3.94	42-1/4"	13-7/16"	7.04	3.94	11.51
4016	4.53	42-1/4"	15-7/16"	8.13	4.53	12.78
4020	5.70	42-1/4"	19-7/16"	10.29	5.70	15.30
4022	6.29	42-1/4"	21-7/16"	11.38	6.29	16.57
4024	6.88	42-1/4"	23-7/16"	12.46	6.88	17.83
4026	7.46	42-1/4"	25-7/16"	13.54	7.46	19.10
4028	8.05	42-1/4"	27-7/16"	14.63	8.05	20.36
4030	8.64	42-1/4"	29-7/16"	15.71	8.64	21.62
4032	9.22	42-1/4"	31-7/16"	16.79	9.22	22.89
4034	9.81	42-1/4"	33-7/16"	17.88	9.81	24.15
4036	10.40	42-1/4"	35-7/16"	18.96	10.40	25.42
1624/36	2.97	18-1/4"	23-7/16"	6.04	2.97	10.22
2024/36	3.62	22-1/4"	23-7/16"	7.65	3.62	12.12
2424/36	4.27	26-1/4"	23-7/16"	9.26	4.27	14.02
2624/36	4.60	28-1/4"	23-7/16"	10.07	4.60	14.97
2824/36	4.92	30-1/4"	23-7/16"	10.88	4.92	15.92
3024/36	5.25	32-1/4"	23-7/16"	11.68	5.25	16.87
3224/36	5.57	34-1/4"	23-7/16"	12.49	5.57	17.82
3624/36	6.23	38-1/4"	23-7/16"	14.10	6.23	19.72
4024/36	6.88	42-1/4"	23-7/16"	15.71	6.88	21.62

## NOTES FOR DOUBLE HUNG WINDOWS:

- > For Traditional single hungs, deduct 1/4" from the clear opening widths
- > Shaded units meet most national building codes for emergency escape and rescue requirements



# CLEAR OPENING DIMENSIONS

Double Sliders						
Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
1616	1.94	15-3/8"	18-1/8"	3.13	1.94	6.10
1620	2.36	15-3/8"	22-1/8"	3.96	2.36	7.17
1624	2.79	15-3/8"	26-1/8"	4.79	2.79	8.24
1628	3.22	15-3/8"	30-1/8"	5.63	3.22	9.31
1632	3.64	15-3/8"	34-1/8"	6.46	3.64	10.38
1636	4.07	15-3/8"	38-1/8"	7.29	4.07	11.45
1640	4.50	15-3/8"	42-1/8"	8.13	4.50	12.52
1644	4.92	15-3/8"	46-1/8"	8.96	4.92	13.59
1648	5.35	15-3/8"	50-1/8"	9.79	5.35	14.65
2016	2.44	19-3/8"	18-1/8"	3.96	2.44	7.37
2020	2.98	19-3/8"	22-1/8"	5.01	2.98	8.66
2024	3.52	19-3/8"	26-1/8"	6.07	3.52	9.95
2028	4.05	19-3/8"	30-1/8"	7.13	4.05	11.24
2032	4.59	19-3/8"	34-1/8"	8.18	4.59	12.53
2036	5.13	19-3/8"	38-1/8"	9.24	5.13	13.82
2040	5.67	19-3/8"	42-1/8"	10.29	5.67	15.12
2044	6.21	19-3/8"	46-1/8"	11.35	6.21	16.41
2048	6.74	19-3/8"	50-1/8"	12.40	6.74	17.70
2416	2.94	23-3/8"	18-1/8"	4.79	2.94	8.63
2420	3.59	23-3/8"	22-1/8"	6.07	3.59	10.15
2424	4.24	23-3/8"	26-1/8"	7.35	4.24	11.66
2428	4.89	23-3/8"	30-1/8"	8.63	4.89	13.18
2432	5.54	23-3/8"	34-1/8"	9.90	5.54	14.69
2436	6.19	23-3/8"	38-1/8"	11.18	6.19	16.20
2440	6.84	23-3/8"	42-1/8"	12.46	6.84	17.72
2444	7.49	23-3/8"	46-1/8"	13.74	7.49	19.23
2448	8.14	23-3/8"	50-1/8"	15.01	8.14	20.75
2816	3.45	27-3/8"	18-1/8"	5.63	3.45	9.90
2820	4.21	27-3/8"	22-1/8"	7.13	4.21	11.64
2824	4.97	27-3/8"	26-1/8"	8.63	4.97	13.37
2828	5.73	27-3/8"	30-1/8"	10.13	5.73	15.11
2832	6.49	27-3/8"	34-1/8"	11.63	6.49	16.85
2836	7.25	27-3/8"	38-1/8"	13.13	7.25	18.58
2840	8.01	27-3/8"	42-1/8"	14.63	8.01	20.32
2844	8.77	27-3/8"	46-1/8"	16.13	8.77	22.05
2848	9.53	27-3/8"	50-1/8"	17.63	9.53	23.79
3216	3.95	31-3/8"	18-1/8"	6.46	3.95	11.17
3220	4.82	31-3/8"	22-1/8"	8.18	4.82	13.13
3224	5.69	31-3/8"	26-1/8"	9.90	5.69	15.09
3228	6.56	31-3/8"	30-1/8"	11.63	6.56	17.04
3232	7.44	31-3/8"	34-1/8"	13.35	7.44	19.00
3236	8.31	31-3/8"	38-1/8"	15.07	8.31	20.96
3240	9.18	31-3/8"	42-1/8"	16.79	9.18	22.92
3244	10.05	31-3/8"	46-1/8"	18.51	10.05	24.88
3248	10.92	31-3/8"	50-1/8"	20.24	10.92	26.84

Double Sliders, remodeling sizes						
Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2020	1.03	7-7/8"	18-3/4"	1.63	1.03	3.82
3020	1.81	13-7/8"	18-3/4"	2.93	1.81	5.78
3030	2.96	13-7/8"	30-3/4"	5.18	2.96	8.74
3040	4.12	13-7/8"	42-3/4"	7.43	4.12	11.69
4040	5.90	19-7/8"	42-3/4"	10.73	5.90	15.65
4050	7.56	19-7/8"	54-3/4"	13.98	7.56	19.61
5030	5.53	25-7/8"	30-3/4"	9.78	5.53	14.64
5040	7.68	25-7/8"	42-3/4"	14.03	7.68	19.60
5050	9.84	25-7/8"	54-3/4"	18.28	9.84	24.56
6030	6.81	31-7/8"	30-3/4"	12.09	6.81	17.60
6040	9.46	31-7/8"	42-3/4"	17.34	9.46	23.55
6050	12.12	31-7/8"	54-3/4"	22.59	12.12	29.51

Triple Sliders						
Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
163232	4.12	17-3/8"	34-1/8"	13.13	4.12	19.00
163240	5.08	17-3/8"	42-1/8"	16.52	5.08	22.92
163244	5.57	17-3/8"	46-1/8"	18.22	5.57	24.88
163248	6.05	17-3/8"	50-1/8"	19.91	6.05	26.84
204032	5.07	21-3/8"	34-1/8"	16.58	5.07	23.31
204040	6.25	21-3/8"	42-1/8"	20.85	6.25	28.12
204044	6.85	21-3/8"	46-1/8"	22.99	6.85	30.52
204048	7.44	21-3/8"	50-1/8"	25.13	7.44	32.93
204832	5.07	21-3/8"	34-1/8"	18.30	5.07	25.47
204840	6.25	21-3/8"	42-1/8"	23.02	6.25	30.72
204844	6.85	21-3/8"	46-1/8"	25.38	6.85	33.35
204848	7.44	21-3/8"	50-1/8"	27.74	7.44	35.97
244832	6.01	25-3/8"	34-1/8"	20.02	6.01	27.63
244840	7.42	25-3/8"	42-1/8"	25.19	7.42	33.32
244844	8.13	25-3/8"	46-1/8"	27.77	8.13	36.17
244848	8.83	25-3/8"	50-1/8"	30.35	8.83	39.02

Triple Sliders, remodeling sizes						
Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
8040	6.35	21-3/8"	42-3/4"	23.25	6.35	30.97
8050	8.13	21-3/8"	54-3/4"	30.29	8.13	38.80

## NOTES FOR SLIDER WINDOWS:

> Shaded units meet most national building codes for emergency escape and rescue requirements

# CLEAR OPENING DIMENSIONS

Garden-Aire Sliding Patio Doors						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2968	–	–	–	12.46	–	18.61
3368	–	–	–	15.55	–	22.04
3668	–	–	–	17.09	–	23.76
4368	–	–	–	21.71	–	28.91
2980	–	–	–	15.16	–	22.22
3380	–	–	–	18.91	–	26.32
3680	–	–	–	20.78	–	28.37
4380	–	–	–	26.41	–	34.52
5068	12.01	22"	78-5/8"	24.92	12.01	34.35
6068	15.29	28"	78-5/8"	31.09	15.29	41.22
6668	16.93	31"	78-5/8"	34.17	16.93	44.65
8068	21.84	40"	78-5/8"	43.42	21.84	54.96
5080	14.46	22"	94-5/8"	30.31	14.46	41.02
6080	18.40	28"	94-5/8"	37.81	18.40	49.22
6680	20.37	31"	94-5/8"	41.56	20.37	53.32
8080	26.28	40"	94-5/8"	52.81	26.28	65.63
7968	12.01	22"	78-5/8"	37.39	12.01	52.95
9368	15.29	28"	78-5/8"	46.64	15.29	63.26
10068	16.93	31"	78-5/8"	51.26	16.93	68.41
12368	21.84	40"	78-5/8"	65.14	21.84	83.87
7980	14.46	22"	94-5/8"	45.47	14.46	63.23
9380	18.40	28"	94-5/8"	56.72	18.40	75.54
10080	20.37	31"	94-5/8"	62.34	20.37	81.69
12380	26.28	40"	94-5/8"	79.22	26.28	100.15

Garden-Aire Sliding Patio Doors - wide stile						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2968	–	–	–	9.83	–	18.61
3368	–	–	–	12.64	–	22.04
3668	–	–	–	14.05	–	23.76
4368	–	–	–	18.26	–	28.91
2980	–	–	–	12.17	–	22.22
3380	–	–	–	15.64	–	26.32
3680	–	–	–	17.38	–	28.37
4380	–	–	–	22.60	–	34.52
5068	12.01	22"	78-5/8"	19.67	12.01	34.35
6068	15.29	28"	78-5/8"	25.29	15.29	41.22
6668	16.93	31"	78-5/8"	28.10	16.93	44.65
8068	21.84	40"	78-5/8"	36.53	21.84	54.96
5080	14.46	22"	94-5/8"	24.34	14.46	41.02
6080	18.40	28"	94-5/8"	31.29	18.40	49.22
6680	20.37	31"	94-5/8"	34.77	20.37	53.32
8080	26.28	40"	94-5/8"	45.20	26.28	65.63
7968	12.01	22"	78-5/8"	29.50	12.01	52.95
9368	15.29	28"	78-5/8"	37.93	15.29	63.26
10068	16.93	31"	78-5/8"	42.15	16.93	68.41
12368	21.84	40"	78-5/8"	54.79	21.84	83.87
7980	14.46	22"	94-5/8"	36.50	14.46	63.23
9380	18.40	28"	94-5/8"	46.93	18.40	75.54
10080	20.37	31"	94-5/8"	52.15	20.37	81.69
12380	26.28	40"	94-5/8"	67.79	26.28	100.15

Garden-Aire Sliding Patio Doors, remodeling sizes						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2866	–	–	–	11.79	–	17.76
3266	–	–	–	14.77	–	21.09
4266	–	–	–	20.73	–	27.76
41166	11.37	21-1/2"	76-1/8"	23.59	11.37	32.75
51166	14.54	27-1/2"	76-1/8"	29.54	14.54	39.41
71166	20.88	39-1/2"	76-1/8"	41.46	20.88	52.74
7766	11.37	21-1/2"	76-1/8"	35.38	11.37	50.52
9166	14.54	27-1/2"	76-1/8"	44.32	14.54	60.51
12166	20.88	39-1/2"	76-1/8"	62.19	20.88	80.49

Garden-Aire Sliding Patio Doors - wide stile, remodeling sizes						
Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
2866	–	–	–	9.24	–	17.76
3266	–	–	–	11.95	–	21.09
4266	–	–	–	17.36	–	27.76
41166	11.37	21-1/2"	76-1/8"	18.49	11.37	32.75
51166	14.54	27-1/2"	76-1/8"	23.90	14.54	39.41
71166	20.88	39-1/2"	76-1/8"	34.72	20.88	52.74
7766	11.37	21-1/2"	76-1/8"	27.73	11.37	50.52
9166	14.54	27-1/2"	76-1/8"	35.85	14.54	60.51
12166	20.88	39-1/2"	76-1/8"	52.09	20.88	80.49

Garden-Aire Sliding Patio Doors - 4-wide (narrow stile)								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. of Unit Frame Dim.	
	1 Open	2 Open	1 Open	2 Open				
4-10068	13.45	24.38	24-5/8"	44-21/32"	78-5/8"	49.85	24.38	67.75
4-12068	16.45	30.39	30-1/8"	55-21/32"	78-5/8"	61.15	30.39	80.34
4-16068	23.00	43.49	42-1/8"	79-21/32"	78-5/8"	85.82	43.49	107.82
4-10080	16.18	29.34	24-5/8"	44-21/32"	94-5/8"	60.63	29.34	80.90
4-12080	19.80	36.57	30-1/8"	55-21/32"	94-5/8"	74.38	36.57	95.94
4-16080	27.68	52.34	42-1/8"	79-21/32"	94-5/8"	104.38	52.34	128.75

Garden-Aire Sliding Patio Doors - 4-wide (wide stile)							
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open			
4-10068	13.45	24.38	24-5/8"	44-21/32"	78-5/8"	39.34	24.38
4-12068	16.45	30.39	30-1/8"	55-21/32"	78-5/8"	49.64	30.39
4-16068	23.00	43.49	42-1/8"	79-21/32"	78-5/8"	72.12	43.49
4-10080	16.18	29.34	24-5/8"	44-21/32"	94-5/8"	48.67	29.34
4-12080	19.80	36.57	30-1/8"	55-21/32"	94-5/8"	61.42	36.57
4-16080	27.68	52.34	42-1/8"	79-21/32"	94-5/8"	89.23	52.34

## TERRASPAN PATIO DOORS AND FOLDING PATIO DOORS:

There are no standard sizes for TerraSpan Patio Doors or Folding Patio Doors. Contact Kolbe & Kolbe for clear opening information.

# CLEAR OPENING DIMENSIONS

Inswing Patio Doors, remodeling sizes								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
2666	13.65	—	25-3/4"	—	76-11/32"	8.68	14.65	16.70
3066	16.83	—	31-3/4"	—	76-11/32"	11.37	17.83	20.01
2680	16.53	—	25-3/4"	—	92-7/16"	10.83	17.73	20.08
3080	20.38	—	31-3/4"	—	92-7/16"	14.20	21.58	24.06

Inswing Patio Doors, remodeling sizes - 2-Wide (stationary/active)								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
41166	13.65	–	25-3/4"	–	76-11/32"	17.35	14.65	32.81
51166	16.83	–	31-3/4"	–	76-11/32"	22.74	17.83	39.44
41180	16.53	–	25-3/4"	–	92-7/16"	21.67	17.73	39.46
51180	20.38	–	31-3/4"	–	92-7/16"	28.40	21.58	47.42

Inswing Patio Doors, remodeling sizes - French								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
41166	13.65	27.07	25-3/4"	51-1/16"	76-11/32"	17.35	30.12	32.81
51166	16.83	33.43	31-3/4"	63-1/16"	76-11/32"	22.74	36.48	39.44
41180	16.53	32.78	25-3/4"	51-1/16"	92-7/16"	21.67	36.47	39.46
51180	20.38	40.48	31-3/4"	63-1/16"	92-7/16"	28.40	44.17	47.42

Inswing Patio Doors, remodeling sizes - 3-Wide (stationary/active/stationary)								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
7566	13.65	–	25-3/4"	–	76-11/32"	26.03	14.65	48.93
81166	16.83	–	31-3/4"	–	76-11/32"	34.11	17.83	58.87
7580	16.53	–	25-3/4"	–	92-7/16"	32.50	17.73	58.83
81180	20.38	–	31-3/4"	–	92-7/16"	42.60	21.58	70.78

## NOTES FOR INSWING PATIO DOORS:

- For units with handicap sills, add 5/8" to the clear opening heights
- One or both sash open to 90°

## NOTES FOR INSWING ENTRANCE DOORS:

- For units with handicap sills, add 5/8" to the clear opening heights
- One or both sash open to 90°

Inswing Entrance Doors, 1-wide								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
2068	11.67	–	21-1/8"	–	79-9/16"	6.93	12.71	14.72
2668	14.99	–	27-1/8"	–	79-9/16"	9.76	16.02	18.17
2868	16.09	–	29-1/8"	–	79-9/16"	10.70	17.13	19.32
3068	18.30	–	33-1/8"	–	79-9/16"	12.59	19.34	21.61
2070	12.26	–	21-1/8"	–	83-9/16"	7.33	13.35	15.43
2670	15.74	–	27-1/8"	–	83-9/16"	10.33	16.83	19.05
2870	16.90	–	29-1/8"	–	83-9/16"	11.33	17.99	20.25
3070	19.22	–	33-1/8"	–	83-9/16"	13.33	20.31	22.66
2080	14.02	–	21-1/8"	–	95-9/16"	8.56	15.26	17.57
2680	18.00	–	27-1/8"	–	95-9/16"	12.05	19.25	21.68
2880	19.33	–	29-1/8"	–	95-9/16"	13.22	20.57	23.05
3080	21.98	–	33-1/8"	–	95-9/16"	15.55	23.23	25.79

Inswing Entrance Doors, 2-wide (stationary/active)								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
4068	11.67	–	21-1/8"	–	79-9/16"	13.85	12.71	28.83
5068	14.99	–	27-1/8"	–	79-9/16"	19.51	16.02	35.72
5468	16.09	–	29-1/8"	–	79-9/16"	21.40	17.13	38.02
6068	18.30	–	33-1/8"	–	79-9/16"	25.17	19.34	42.62
4070	12.26	–	21-1/8"	–	83-9/16"	14.67	13.35	30.22
5070	15.74	–	27-1/8"	–	83-9/16"	20.66	16.83	37.45
5470	16.90	–	29-1/8"	–	83-9/16"	22.66	17.99	39.86
6070	19.22	–	33-1/8"	–	83-9/16"	26.65	20.31	44.68
4080	14.02	–	21-1/8"	–	95-9/16"	17.12	15.26	34.41
5080	18.00	–	27-1/8"	–	95-9/16"	24.11	19.25	42.63
5480	19.33	–	29-1/8"	–	95-9/16"	26.44	20.57	45.37
6080	21.98	–	33-1/8"	–	95-9/16"	31.10	23.23	50.86

Inswing Entrance Doors - French								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
4068	11.67	23.10	21-1/8"	41-13/16"	79-9/16"	13.85	26.28	28.83
5068	14.99	29.73	27-1/8"	53-13/16"	79-9/16"	19.51	32.91	35.72
5468	16.09	31.94	29-1/8"	57-13/16"	79-9/16"	21.40	35.12	38.02
6068	18.30	36.36	33-1/8"	65-13/16"	79-9/16"	25.17	39.54	42.62
4070	12.26	24.26	21-1/8"	41-13/16"	83-9/16"	14.67	27.60	30.22
5070	15.74	31.23	27-1/8"	53-13/16"	83-9/16"	20.66	34.56	37.45
5470	16.90	33.55	29-1/8"	57-13/16"	83-9/16"	22.66	36.89	39.86
6070	19.22	38.19	33-1/8"	65-13/16"	83-9/16"	26.65	41.53	44.68
4080	14.02	27.75	21-1/8"	41-13/16"	95-9/16"	17.12	31.56	34.41
5080	18.00	35.71	27-1/8"	53-13/16"	95-9/16"	24.11	39.53	42.63
5480	19.33	38.37	29-1/8"	57-13/16"	95-9/16"	26.44	42.18	45.37
6080	21.98	43.68	33-1/8"	65-13/16"	95-9/16"	31.10	47.49	50.86

# CLEAR OPENING DIMENSIONS

Inswing Entrance Doors - 1-3/4" Thick Panels, 1-Wide								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
3668	21.62	—	39-1/8"	—	79-9/16"	15.41	22.65	25.06
3670	22.70	—	39-1/8"	—	83-9/16"	16.32	23.79	26.27
3680	25.96	—	39-1/8"	—	95-9/16"	19.05	27.21	29.91
2090	15.78	—	21-1/8"	—	107-9/16"	9.78	17.18	19.70
2690	20.26	—	27-1/8"	—	107-9/16"	13.78	21.66	24.32
2890	21.76	—	29-1/8"	—	107-9/16"	15.11	23.16	25.85
3090	24.74	—	33-1/8"	—	107-9/16"	17.77	26.14	28.93
3690	29.22	—	39-1/8"	—	107-9/16"	21.77	30.63	33.54
20100	17.54	—	21-1/8"	—	119-9/16"	11.01	19.10	21.84
26100	22.52	—	27-1/8"	—	119-9/16"	15.50	24.08	26.95
28100	24.18	—	29-1/8"	—	119-9/16"	17.00	25.74	28.66
30100	27.50	—	33-1/8"	—	119-9/16"	20.00	29.06	32.06
36100	32.49	—	39-1/8"	—	119-9/16"	24.49	34.04	37.18

Inswing Entrance Doors - 1-3/4" Thick Panels, 2-Wide French								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
7068	21.62	42.99	39-1/8"	77-13/16"	79-9/16"	30.83	22.65	49.51
7070	22.70	45.15	39-1/8"	77-13/16"	83-9/16"	32.64	23.79	51.90
7080	25.96	51.64	39-1/8"	77-13/16"	95-9/16"	38.09	27.21	59.09
4090	15.78	31.23	21-1/8"	41-13/16"	107-9/16"	19.56	17.18	38.59
5090	20.26	40.20	27-1/8"	53-13/16"	107-9/16"	27.56	21.66	47.81
5490	21.76	43.18	29-1/8"	57-13/16"	107-9/16"	30.22	23.16	50.89
6090	24.74	49.16	33-1/8"	65-13/16"	107-9/16"	35.55	26.14	57.04
7090	29.22	58.12	39-1/8"	77-13/16"	107-9/16"	43.54	30.63	66.27
40100	17.54	34.72	21-1/8"	41-13/16"	119-9/16"	22.01	19.10	42.77
50100	22.52	44.68	27-1/8"	53-13/16"	119-9/16"	31.00	24.08	53.00
54100	24.18	48.00	29-1/8"	57-13/16"	119-9/16"	34.00	25.74	56.41
60100	27.50	54.64	33-1/8"	65-13/16"	119-9/16"	40.00	29.06	63.22
70100	32.49	64.61	39-1/8"	77-13/16"	119-9/16"	48.99	34.04	73.45

Inswing Entrance Doors - 1-3/4" Thick Panels, 2-Wide								
Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent.	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
7068	21.62	—	39-1/8"	—	79-9/16"	30.83	22.65	49.51
7070	22.70	—	39-1/8"	—	83-9/16"	32.64	23.79	51.90
7080	25.96	—	39-1/8"	—	95-9/16"	38.09	27.21	59.09
4090	15.78	—	21-1/8"	—	107-9/16"	19.56	17.18	38.59
5090	20.26	—	27-1/8"	—	107-9/16"	27.56	21.66	47.81
5490	21.76	—	29-1/8"	—	107-9/16"	30.22	23.16	50.89
6090	24.74	—	33-1/8"	—	107-9/16"	35.55	26.14	57.04
7090	29.22	—	39-1/8"	—	107-9/16"	43.54	30.63	66.27
40100	17.54	—	21-1/8"	—	119-9/16"	22.01	19.10	42.77
50100	22.52	—	27-1/8"	—	119-9/16"	31.00	24.08	53.00
54100	24.18	—	29-1/8"	—	119-9/16"	34.00	25.74	56.41
60100	27.50	—	33-1/8"	—	119-9/16"	40.00	29.06	63.22
70100	32.49	—	39-1/8"	—	119-9/16"	48.99	34.04	73.45

## NOTES FOR INSWING ENTRANCE DOORS:

- For units with handicap sills, add 5/8" to the clear opening heights
- One or both sash open to 90°

# CLEAR OPENING DIMENSIONS

Outswing Patio Doors, remodeling sizes								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
2666	13.53	—	25-23/32"	—	75-25/32"	8.68	14.59	17.00
3066	16.69	—	31-23/32"	—	75-25/32"	11.37	17.74	20.31
41166	13.53	—	25-23/32"	—	75-25/32"	17.35	14.59	33.14
51166	16.69	—	31-23/32"	—	75-25/32"	22.74	17.74	39.76
7566	13.53	—	25-23/32"	—	75-25/32"	26.03	14.59	49.26
81166	16.69	—	31-23/32"	—	75-25/32"	34.11	17.73	59.19
2680	16.41	—	25-23/32"	—	91-7/8"	10.83	17.69	20.45
3080	20.24	—	31-23/32"	—	91-7/8"	14.20	21.51	24.43
41180	16.41	—	25-23/32"	—	91-7/8"	21.67	17.69	39.86
51180	20.24	—	31-23/32"	—	91-7/8"	28.40	21.51	47.82
7580	16.41	—	25-23/32"	—	91-7/8"	32.50	17.69	59.25
81180	20.24	—	31-23/32"	—	91-7/8"	42.60	21.51	71.19

Outswing Entrance Doors - 2-wide (stationary/active)								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
4068	11.57	—	21-3/32"	—	79"	13.85	12.67	29.18
5068	14.86	—	27-3/32"	—	79"	19.51	15.96	36.06
5468	15.96	—	29-3/32"	—	79"	21.40	17.06	38.36
6068	18.16	—	33-3/32"	—	79"	25.17	19.25	42.95
4070	12.16	—	21-3/32"	—	83"	14.67	13.31	30.59
5070	15.62	—	27-3/32"	—	83"	20.66	16.77	37.81
5470	16.77	—	29-3/32"	—	83"	22.66	17.92	40.21
6070	19.07	—	33-3/32"	—	83"	26.65	20.23	45.03
4080	13.92	—	21-3/32"	—	95"	17.12	15.24	34.83
5080	17.87	—	27-3/32"	—	95"	24.11	19.19	43.05
5480	19.19	—	29-3/32"	—	95"	26.44	20.51	45.79
6080	21.83	—	33-3/32"	—	95"	31.10	23.15	51.27

Outswing Patio Doors, remodeling sizes - French								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
41166	13.53	26.97	25-23/32"	51-1/4"	75-25/32"	17.35	30.00	33.14
51166	16.69	33.29	31-23/32"	63-1/4"	75-25/32"	22.74	36.31	39.76
41180	16.41	32.70	25-23/32"	51-1/4"	91-7/8"	21.67	36.37	39.86
51180	20.24	40.35	31-23/32"	63-1/4"	91-7/8"	28.40	44.02	47.82

Outswing Entrance Doors - French								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
4068	11.57	23.04	21-3/32"	42"	79"	13.85	26.20	29.18
5068	14.86	29.63	27-3/32"	54"	79"	19.51	32.78	36.06
5468	15.96	31.82	29-3/32"	58"	79"	21.40	34.97	38.36
6068	18.16	36.21	33-3/32"	66"	79"	25.17	39.36	42.95
4070	12.16	24.21	21-3/32"	42"	83"	14.67	27.52	30.59
5070	15.62	31.13	27-3/32"	54"	83"	20.66	34.44	37.81
5470	16.77	33.43	29-3/32"	58"	83"	22.66	36.74	40.21
6070	19.07	38.04	33-3/32"	66"	83"	26.65	41.36	45.03
4080	13.92	27.71	21-3/32"	42"	95"	17.12	31.50	34.83
5080	17.87	35.63	27-3/32"	54"	95"	24.11	39.42	43.05
5480	19.19	38.26	29-3/32"	58"	95"	26.44	42.06	45.79
6080	21.83	43.54	33-3/32"	66"	95"	31.10	47.34	51.27

Outswing Entrance Doors - 1-wide								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
2068	11.57	—	21-3/32"	—	79"	6.93	12.67	15.04
2668	14.86	—	27-3/32"	—	79"	9.76	15.96	18.48
2868	15.96	—	29-3/32"	—	79"	10.70	17.06	19.63
3068	18.16	—	33-3/32"	—	79"	12.59	19.25	21.92
2070	12.16	—	21-3/32"	—	83"	7.33	13.31	15.77
2670	15.62	—	27-3/32"	—	83"	10.33	16.77	19.37
2870	16.77	—	29-3/32"	—	83"	11.33	17.92	20.58
3070	19.07	—	33-3/32"	—	83"	13.33	20.23	22.98
2080	13.92	—	21-3/32"	—	95"	8.56	15.24	17.95
2680	17.87	—	27-3/32"	—	95"	12.05	19.19	22.06
2880	19.19	—	29-3/32"	—	95"	13.22	20.51	23.43
3080	21.83	—	33-3/32"	—	95"	15.55	23.15	26.17

## NOTES FOR OUTSWING DOORS:

- > For units with handicap sills, add 5/8" to the clear opening heights
- > One or both panels open to 90°



# CLEAR OPENING DIMENSIONS

Outswing Entrance Doors - 1-3/4" Thick panels, 1-wide								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear O Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
3668	21.45	—	39-3/32"	—	79"	15.41	22.54	25.36
3670	22.53	—	39-3/32"	—	83"	16.32	23.69	26.59
3680	25.79	—	39-3/32"	—	95"	19.05	27.11	30.28
2090	15.67	—	21-3/32"	—	107"	9.78	17.16	20.14
2690	20.13	—	27-3/32"	—	107"	13.78	21.62	24.74
2890	21.62	—	29-3/32"	—	107"	15.11	23.10	26.28
3090	24.59	—	33-3/32"	—	107"	17.77	26.08	29.35
3690	29.05	—	39-3/32"	—	107"	21.77	30.53	33.96
20100	17.43	—	21-3/32"	—	119"	11.01	19.08	22.32
26100	22.39	—	27-3/32"	—	119"	15.50	24.04	27.43
28100	24.04	—	29-3/32"	—	119"	17.00	25.70	29.13
30100	27.35	—	33-3/32"	—	119"	20.00	29.00	32.54
36100	32.31	—	39-3/32"	—	119"	24.49	33.96	37.65

Outswing Entrance Doors - 1-3/4" Thick panels, 2-wide French								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
7068	21.45	42.79	39-3/32"	78	79"	30.83	22.54	49.83
7070	22.53	44.96	39-3/32"	78	83"	32.64	23.69	52.24
7080	25.79	51.46	39-3/32"	78	95"	38.09	27.11	59.48
4090	15.67	31.21	21-3/32"	42	107"	19.56	17.16	39.07
5090	20.13	40.13	27-3/32"	54	107"	27.56	21.62	48.29
5490	21.62	43.10	29-3/32"	58	107"	30.22	23.10	51.36
6090	24.59	49.04	33-3/32"	66	107"	35.55	26.08	57.50
7090	29.05	57.96	39-3/32"	78	107"	43.54	30.53	66.72
40100	17.43	34.71	21-3/32"	42	119"	22.01	19.08	43.31
50100	22.39	44.63	27-3/32"	54	119"	31.00	24.04	53.53
54100	24.04	47.93	29-3/32"	58	119"	34.00	25.70	56.93
60100	27.35	54.54	33-3/32"	66	119"	40.00	29.00	63.74
70100	32.31	64.46	39-3/32"	78	119"	48.99	33.96	73.96

Outswing Entrance Doors - 1-3/4" Thick panels, 2-wide								
Product #	Sq. Ft. Clear Opening		Clear Opg. Width		Clear Opg. Height	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
7068	21.45	—	39-3/32"	—	79"	30.83	22.54	49.83
7070	22.53	—	39-3/32"	—	83"	32.64	23.69	52.24
7080	25.79	—	39-3/32"	—	95"	38.09	27.11	59.48
4090	15.67	—	21-3/32"	—	107"	19.56	17.16	39.07
5090	20.13	—	27-3/32"	—	107"	27.56	21.62	48.29
5490	21.62	—	29-3/32"	—	107"	30.22	23.10	51.36
6090	24.59	—	33-3/32"	—	107"	35.55	26.08	57.50
7090	29.05	—	39-3/32"	—	107"	43.54	30.53	66.72
40100	17.43	—	21-3/32"	—	119"	22.01	19.08	43.31
50100	22.39	—	27-3/32"	—	119"	31.00	24.04	53.53
54100	24.04	—	29-3/32"	—	119"	34.00	25.70	56.93
60100	27.35	—	33-3/32"	—	119"	40.00	29.00	63.74
70100	32.31	—	39-3/32"	—	119"	48.99	33.96	73.96

## NOTES FOR OUTSWING DOORS:

- > For units with handicap sills, add 5/8" to the clear opening heights
- > One or both panels open to 90°

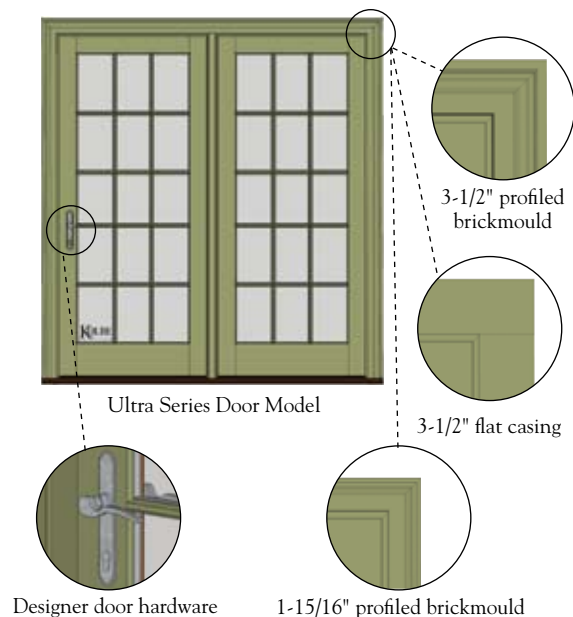
NOTE: For the most up to date data, please visit the Kolbe website at [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com).

## WHY USE GOOGLE SKETCHUP?

Google SketchUp is a 3D modeling program that allows you to create a 3D model of a project and incorporate other 3D models, such as windows and doors, that provide your client with a realistic, scaled visual of the project.

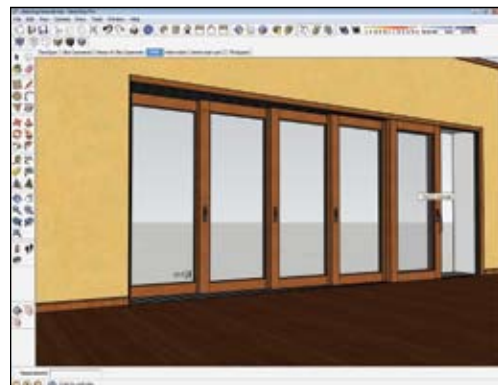
## ULTRA SERIES SKETCHUP MODEL FEATURES

- All standard sizes available for all unit types, including casements, awnings, double hungs, sliders, patio doors and entrance doors
- Exterior trim options including 1-15/16" profiled brickmould, 3-1/2" flat casing and 3-1/2" profiled brickmould – models have layers that allow you to turn this feature on or off
- Performance divided lite options in a colonial pattern allow you to create different configurations by specifying the number of lites high and wide
- Designer door hardware
- A wide variety of interior wood species and stains
- Over 30 exterior colors to choose from



## TERRASpan® LIFT & SLIDE DOOR SKETCHUP MODEL FEATURES

- Dynamic components – flexible components that have intelligent attributes, relationships, and behaviors. With a dynamic model you can create one component that will have dozens, hundreds, and even thousands of permutations of itself. For example, by changing the model properties in panel height, panel width, and number of panels, you can represent a series of models in one. You also have the ability to open and close the door with just a click of your mouse.
- Designer door hardware
- A wide variety of interior wood species and stains
- Over 30 exterior colors to choose from



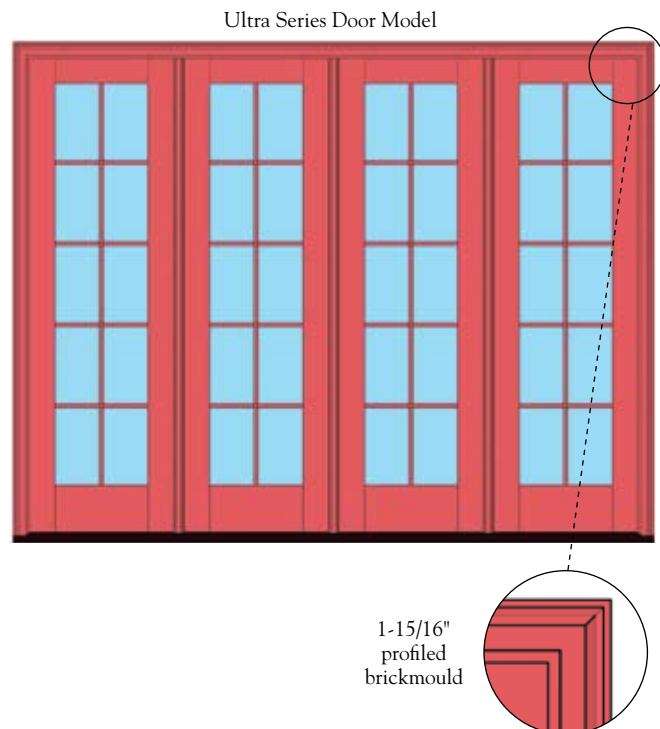
Step 1: click the first door panel to activate the door  
Step 2: click the panel again to open the first panel

## WHY USE REVIT?

Revit is Building Information Modeling (BIM) software that allows the user to design with parametric modeling and drafting elements. Revit also allows the user to incorporate intelligence into each model such as architectural details and product data, which helps an architect to create drawings and schedules that are fully coordinated.

## ULTRA SERIES REVIT MODEL FEATURES


- All models are parametric, meaning you can design objects by modeling their components with real-world behaviors and attributes
- Models are constructed with 1-15/16" profiled brickmould and sill nosing with additional casing and sill assemblies available for download
- Performance divided lite options in a colonial pattern allow you to create different configurations by specifying the number of lites high and wide
- Products include casements, awnings, double hungs, sliders, patio doors and entrance doors
- Over 30 exterior colors to choose from



## OTHER FEATURES OF KOLBE REVIT MODELS

- Type catalogs allow you to upload all standard sizes of a product type (example: all standard size casements)
- Models intelligence allows you to add additional information about the product into the program, including architectural details, product features and options, green building information, impact product data and more

## WHERE TO DOWNLOAD KOLBE'S 3D MODELS

- [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com)  
In the Architect Library or on product pages, look for the SketchUp  or Revit icons
- [seek.autodesk.com](http://seek.autodesk.com)
- [CADdetails.com](http://CADdetails.com)

**Another resource for Kolbe SketchUp Models:**

- [sketchup.google.com/3dwarehouse](http://sketchup.google.com/3dwarehouse)

# ENERGY PERFORMANCE DATA

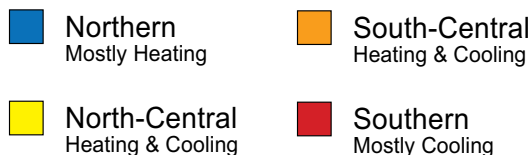
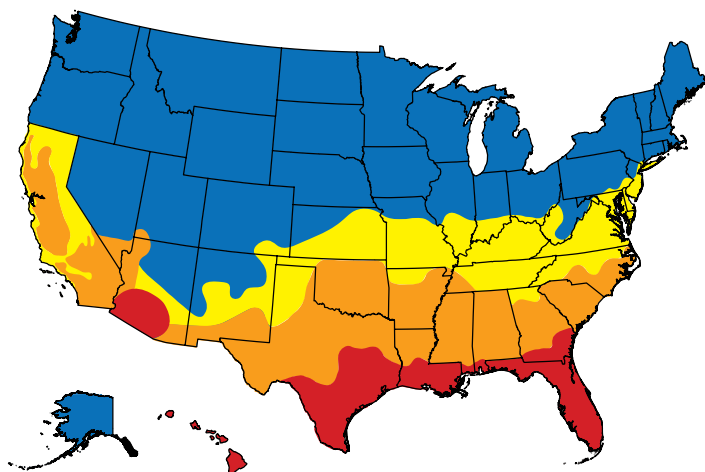
## ENERGY STAR® – UNITED STATES



ENERGY STAR is a government-regulated program that was created by the Environmental Protection Agency (EPA), and the U.S. Department of Energy (DOE), to help consumers quickly and easily identify energy saving products. The ENERGY STAR program uses energy values obtained by window and door manufacturers through the National Fenestration Rating Council (NFRC) program. NFRC ratings are based on the energy performance of the total window or door – both glass and frame.

The ENERGY STAR program for the United States divides the nation into four separate climate zones – Northern, North-Central, South-Central, and Southern.

The performance criteria that needs to be met in order to be ENERGY STAR compliant in a specific climate zone (effective January 4, 2010) is shown in the charts provided below.



### ENERGY PERFORMANCE TERMINOLOGY

- **U-Factor** refers to a measure of heat transfer through the window or door unit. A lower U-factor means less heat escapes during winter weather, thus reducing heating costs in cold climates.
- **R-Value** refers to resistance to heat flow. A high R-value indicates that a window or door has good heat insulating properties.
- **Solar Heat Gain Coefficient (SHGC)** is a measure of how much solar energy is passing through the unit's glass. The lower a window or door unit's SHGC, the less solar heat is transmitted into a room, thus allowing for lower cooling bills in hot climates.
- **Visible Transmittance (VT)** is a measure of the portion of visible light that passes through a window or door. The higher a window or door unit's VT Total, the more visible light is transmitted into a room. This value is influenced by both the glass selection and by the ratio of glazing and frame area.

### 2010 ENERGY STAR Qualification Criteria for Windows

Climate Zones - U.S.		U-Factor	SHGC
	Northern**	$\leq 0.30$	Any
	Northern	$= 0.31$	$\geq 0.35$
	Northern	$= 0.32$	$\geq 0.40$
	North-Central	$\leq 0.32$	$\leq 0.40$
	South-Central	$\leq 0.35$	$\leq 0.30$
	Southern	$\leq 0.60$	$\leq 0.27$

\*\* Northern zone windows can meet prescriptive (1st row) or alternative energy performance (2nd & 3rd row) criteria to qualify for ENERGY STAR.

### 2010 ENERGY STAR Qualification Criteria for Doors<sup>†</sup>

Glazing	U-Factor	SHGC
Opaque	$\leq 0.21$	No rating
$\leq 1/2$ -Lite	$\leq 0.27$	$\leq 0.30$
$> 1/2$ -Lite	$\leq 0.32$	$\leq 0.30$

<sup>†</sup> Criteria shown applies to both sliding and hinged doors and in all four climate zones.

Kolbe demonstrates a commitment to providing accurate energy data by having products independently simulated, tested, inspected and listed in the NFRC certification program, and making that data available on our website and window labels.

### NOTE:

Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, visit [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com) or contact your local Kolbe dealer.

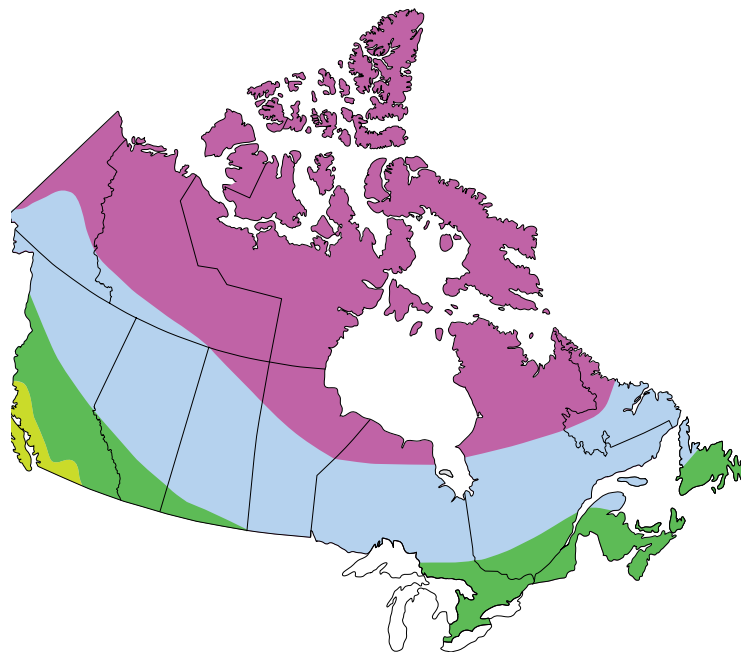
# ENERGY PERFORMANCE DATA

## ENERGY STAR® – CANADA

Products may comply for Canada's ENERGY STAR program based on two compliance paths: either their U-factor total, or their Energy Rating (ER). The Energy Rating is based on a product's overall performance based on three criteria: (1) solar heat gain, (2) heat loss through the frame, spacer and glass, and (3) air leakage loss. The higher the ER number, the better the product's thermal performance.



The U-factor and ER criteria for Canada's four climate zones is shown in the charts provided. For more detailed information about their Energy Rating system and Kolbe products that qualify for Canada's ENERGY STAR Program, visit their website at [www.oee.nrcan.gc.ca/energystar](http://www.oee.nrcan.gc.ca/energystar).



- Zone A**  
Southwestern Canada/  
British Columbia
- Zone B**  
Southern Canada
- Zone C**  
Central Canada
- Zone D**  
Northern Canada

### ENERGY STAR - Canada Qualification Criteria for Windows after October 1, 2010

Zone	COMPLIANCE PATHS		
	Minimum Energy Rating (ER)**	or	Maximum U-Factor
A	21 (Max. U-factor 0.35)	or	≤ 0.32 (Min. ER = 13)
B	25 (Max. U-factor 0.35)	or	≤ 0.28 (Min. ER = 17)
C	29 (Max. U-factor 0.35)	or	≤ 0.25 (Min. ER = 21)
D	34 (Max. U-factor 0.35)	or	≤ 0.21 (Min. ER = 25)

\*\* After June 1, 2010: Both fixed and operable windows will have to meet the same ER level for each climate zone.

### ENERGY STAR - Canada Qualification Criteria for Doors† after October 1, 2010

Zone	COMPLIANCE PATHS		
	Minimum Energy Rating (ER)	or	Maximum U-Factor
A	21 (Max. U-factor 0.35)	or	≤ 0.32
B	25 (Max. U-factor 0.35)	or	≤ 0.28
C	29 (Max. U-factor 0.35)	or	≤ 0.25
D	34 (Max. U-factor 0.35)	or	≤ 0.21

† Criteria shown applies to both sliding and hinged doors and in all four climate zones. Doors following the "Maximum U-factor" compliance path do not have a minimum ER requirement.

U-FACTOR CONVERSION	
Imperial	Metric
0.35	2.00
0.32	1.80
0.28	1.60
0.25	1.40
0.21	1.20

#### NOTE:

Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, visit [www.kolbe-kolbe.com](http://www.kolbe-kolbe.com) or contact your local Kolbe dealer.



# KOLBE®

■ WINDOWS & DOORS ■

1323 S. 11th Avenue ■ Wausau, WI 54401-5998  
715.842.5666  
[www.kolbe-kolbe.com](http://www.kolbe-kolbe.com)