

ULTRA SERIES PRODUCT CATALOG



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.



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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 LoE²-270 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.

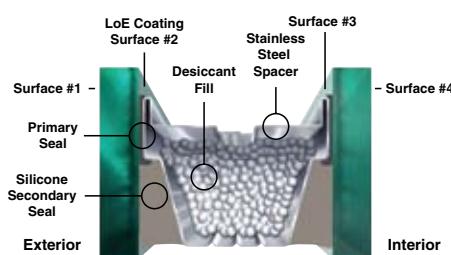
LoE COATING

Kolbe's standard LoE² coating reduces energy transfer through the insulating glass unit. The performance of LoE² 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, LoE² glass allows visible sunlight in while blocking 96% of the sun's infrared heat energy, while in winter, LoE² glass reflects roomside heat back into the room. The result is significant savings in heating and cooling costs throughout the year. Kolbe's standard LoE² 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 LoE² 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 LoE². 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

LoE²-240

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

LoE³-366

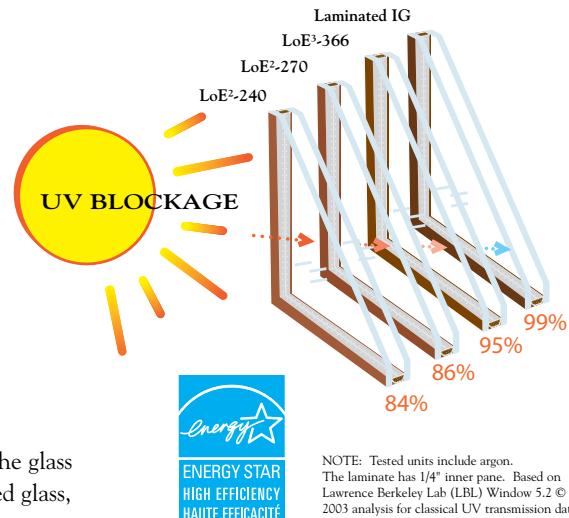
Recommended for all climates, with maximum protection against heat loss and UV damage.

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.



NOTE: Tested units include argon. The laminate has 1/4" inner pane. Based on Lawrence Berkeley Lab (LBL) Window 5.2 © 2003 analysis for classical UV transmission data.

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.

PATTERNE OR COLORED

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

FINEY 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 LoE², 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.

LoE², LoE²-240, LoE²-270, LoE³-366, 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

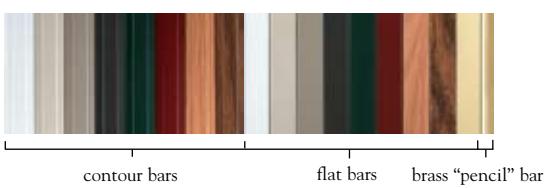
Grilles-in-the-airspace are constructed with aluminum bars sealed between two panes of insulating glass, offering the look of divided panes while reducing cleaning time. For units with 7/8" insulating glass, contoured, 3/4" wide bars are standard in White, Beige, Sand, Rustic, Hartford Green and Chutney. 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

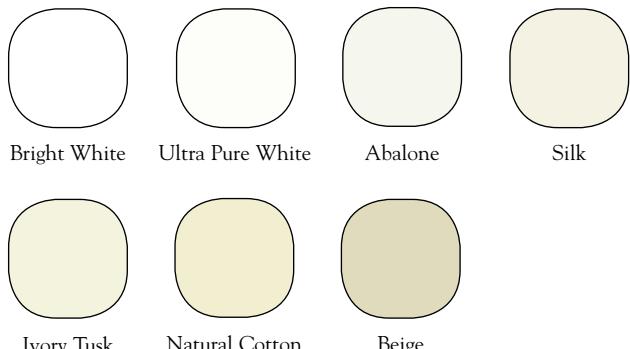
Kolbe windows and doors may be prefinished on the interior with one of the available water-based paints or stains. Stained units are given two coats of water-based satin finish clear sealer with light sanding between coats. Custom paint and stain colors may be requested.

STAIN OPTIONS



Stain colors are shown on pine. A double coat clear finish is also offered. Since no two trees are identical, wood can be expected to differ both in color and graining. These factors will influence the stain's final color. Custom stain matching is also available; please supply your Kolbe dealer with a sample (minimum 3" x 3") with the stain color on the wood species you would like matched.

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.



* Pine is the standard wood species for most Kolbe wood window and door products. Wood species, including mahogany, are sourced from managed forests.

** Sourced from companies such as Lamboo, Inc.

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

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

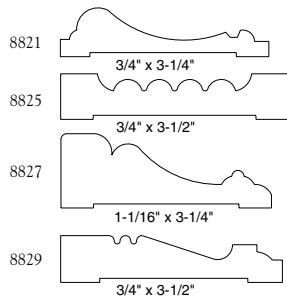
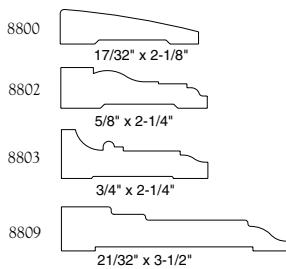
INTERIOR CASING

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



DOUBLE HUNGS



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.

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 ² -270	LoE ² -240 or LoE ³ -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, LoE²-270 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

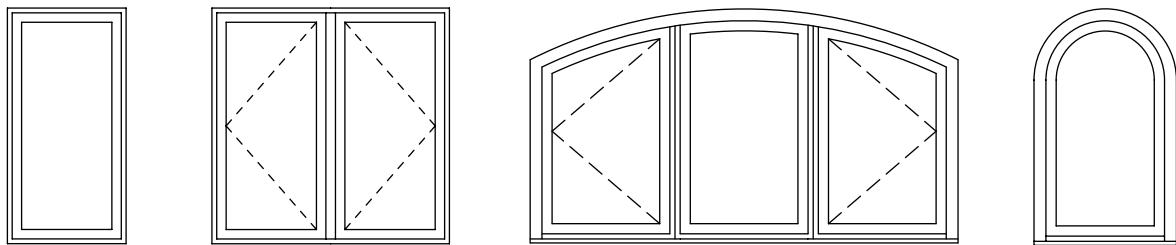
PUSH-OUT CASEMENTS

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 mulled units
- 7/8" LoE²-270 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.

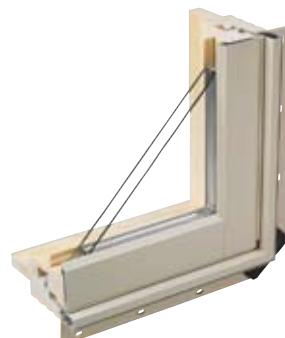
** Standard only on units without brickmould.

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 LoE²-270 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)

- LoE²-240*
- LoE³-366*
- 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 mulled units
- 7/8" LoE²-270 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.

	Rustic Umber	Antique Brass	Satin Nickel	Rustic Umber	Antique Brass	Satin Nickel
Single-point						



PUSH-OUT CASEMENT OPTIONAL FEATURES

GLASS (pgs. 6-7):

- LoE²-240*
- LoE³-366*
- 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:

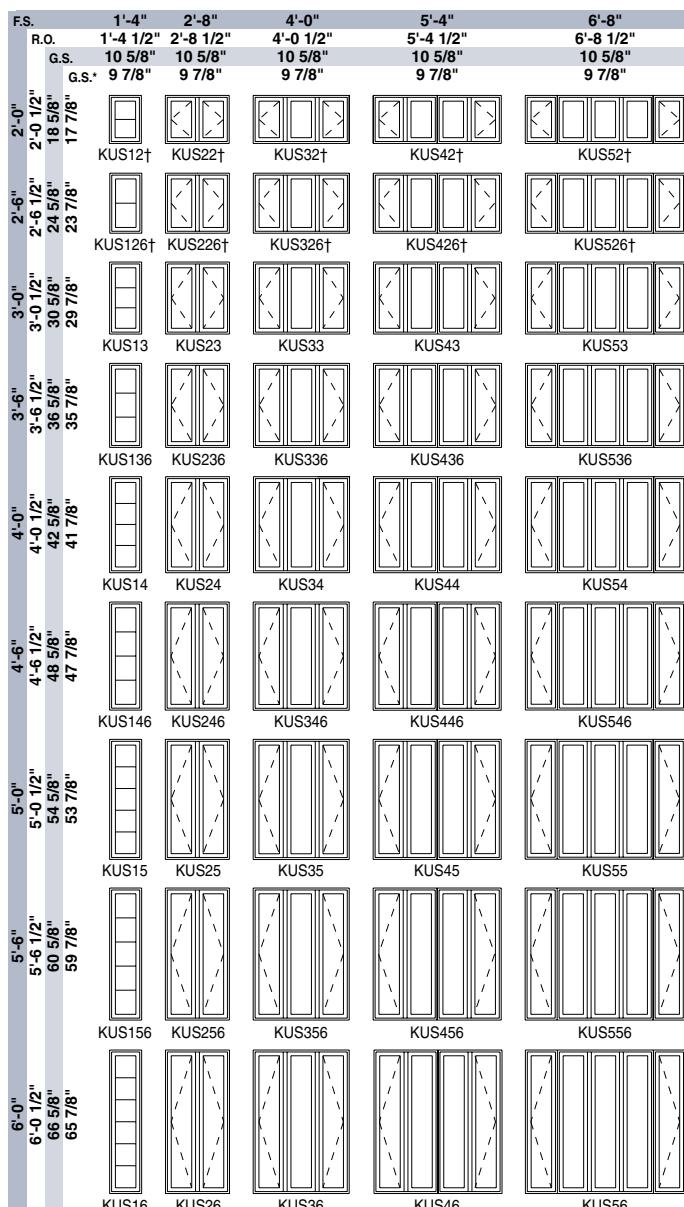
All measurements are nominal.

* 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



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.)

DIMENSION CALCULATIONS

WIDTH	HEIGHT
-1 7/8"	-1 7/8"
-3 1/2"	-3 1/2"
-1"	-1"
+2 1/16"	+13/16"
-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

ULTRA SERIES | CASEMENTS

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"
	17 7/8"	29 7/8"	35 7/8"	41 7/8"	47 7/8"
	2 0"	2 6"	3 6"	3 0"	3 0"
	2 0-1/2"	2 6-1/2"	3 0-1/2"	2 6-1/2"	3 0-1/2"
	18 5/8"	24 5/8"	30 5/8"	36 5/8"	36 5/8"
KUN12†					
KUN22†					
KUN32†					
KUN42†					
KUN52†					
KUN126†					
KUN226†					
KUN326†					
KUN426†					
KUN526†					
KUN13					
KUN23					
KUN33					
KUN43					
KUN53					
KUN136					
KUN236					
KUN336					
KUN436					
KUN536					
KUN14					
KUN24					
KUN34					
KUN44					
KUN54					
KUN146					
KUN246					
KUN346					
KUN446					
KUN546					
KUN15					
KUN25					
KUN35					
KUN45					
KUN55					
KUN156					
KUN256					
KUN356					
KUN456					
KUN556					
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 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.

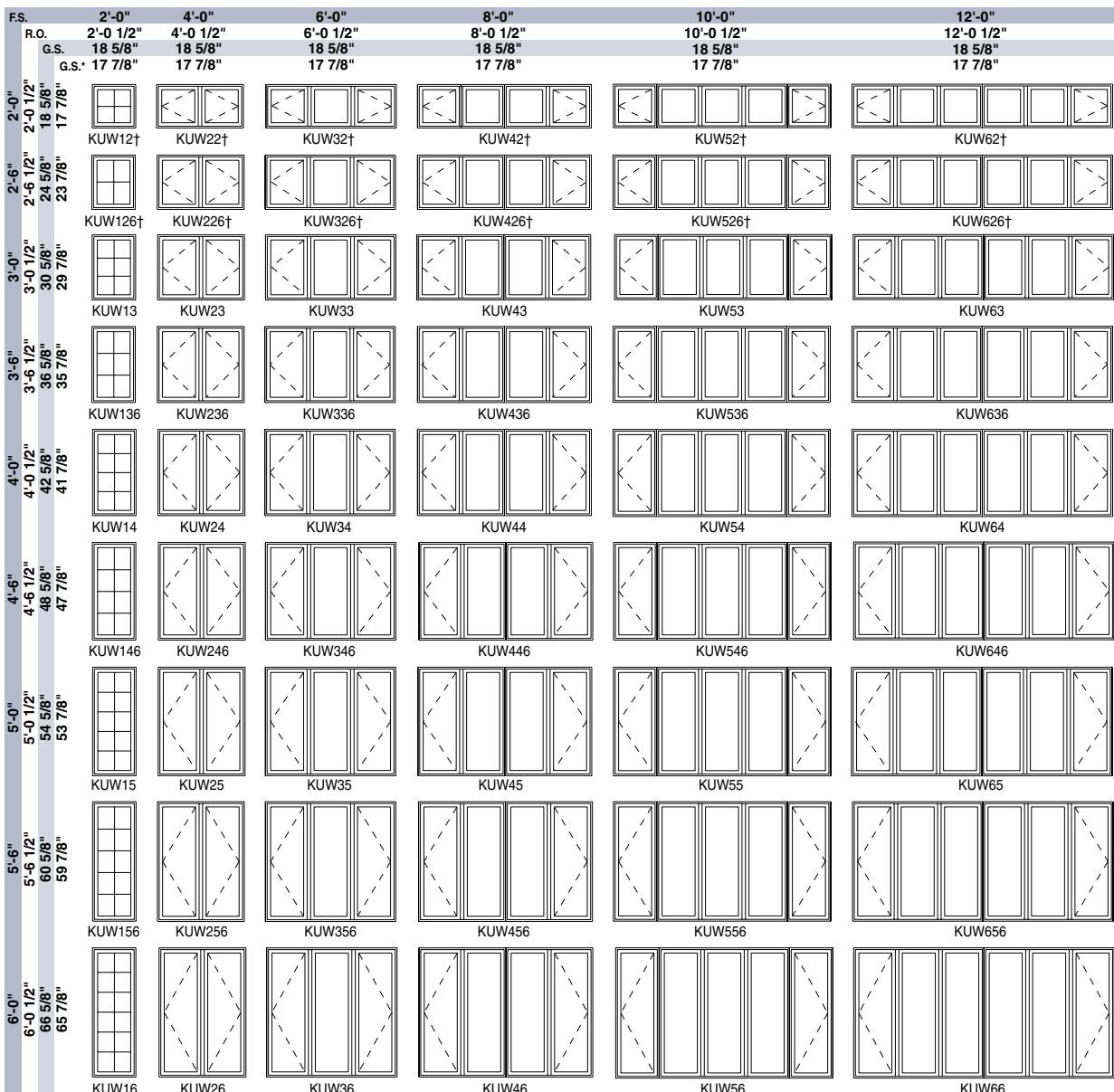
* Glass size for push-out casements.

† 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.)

ULTRA SERIES | CASEMENTS

CASEMENTS | "W" SERIES



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 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.

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

ULTRA SERIES | CASEMENTS

CASEMENTS | "L" SERIES

F.S.	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'-6"	3'-0"	3'-6"	2'-6 1/2"	14'-0"
	2'-0 1/2"	2'-6 5/8"	3'-0 1/2"	3'-6 5/8"	2'-6 1/2"	14'-0 1/2"
	18 5/8"	24 5/8"	30 5/8"	36 5/8"	36 5/8"	22 5/8"
	17 7/8"	23 7/8"	28 7/8"	35 7/8"	35 7/8"	21 7/8"
	KUL12†	KUL22†	KUL32†	KUL42†	KUL52†	KUL62†
	KUL126†	KUL226†	KUL326†	KUL426†	KUL526†	KUL626†
	KUL13	KUL23	KUL33	KUL43	KUL53	KUL63
	KUL136	KUL236	KUL336	KUL436	KUL536	KUL636
	KUL14*	KUL24*	KUL34*	KUL44*	KUL54*	KUL64*
	KUL146*	KUL246*	KUL346*	KUL446*	KUL546*	KUL646*
	KUL15*	KUL25*	KUL35*	KUL45*	KUL55*	KUL65*
	KUL156*	KUL256*	KUL356*	KUL456*	KUL556*	KUL656*
	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 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 emergency escape and rescue requirements when modified with single-arm operators and Euro hinges.

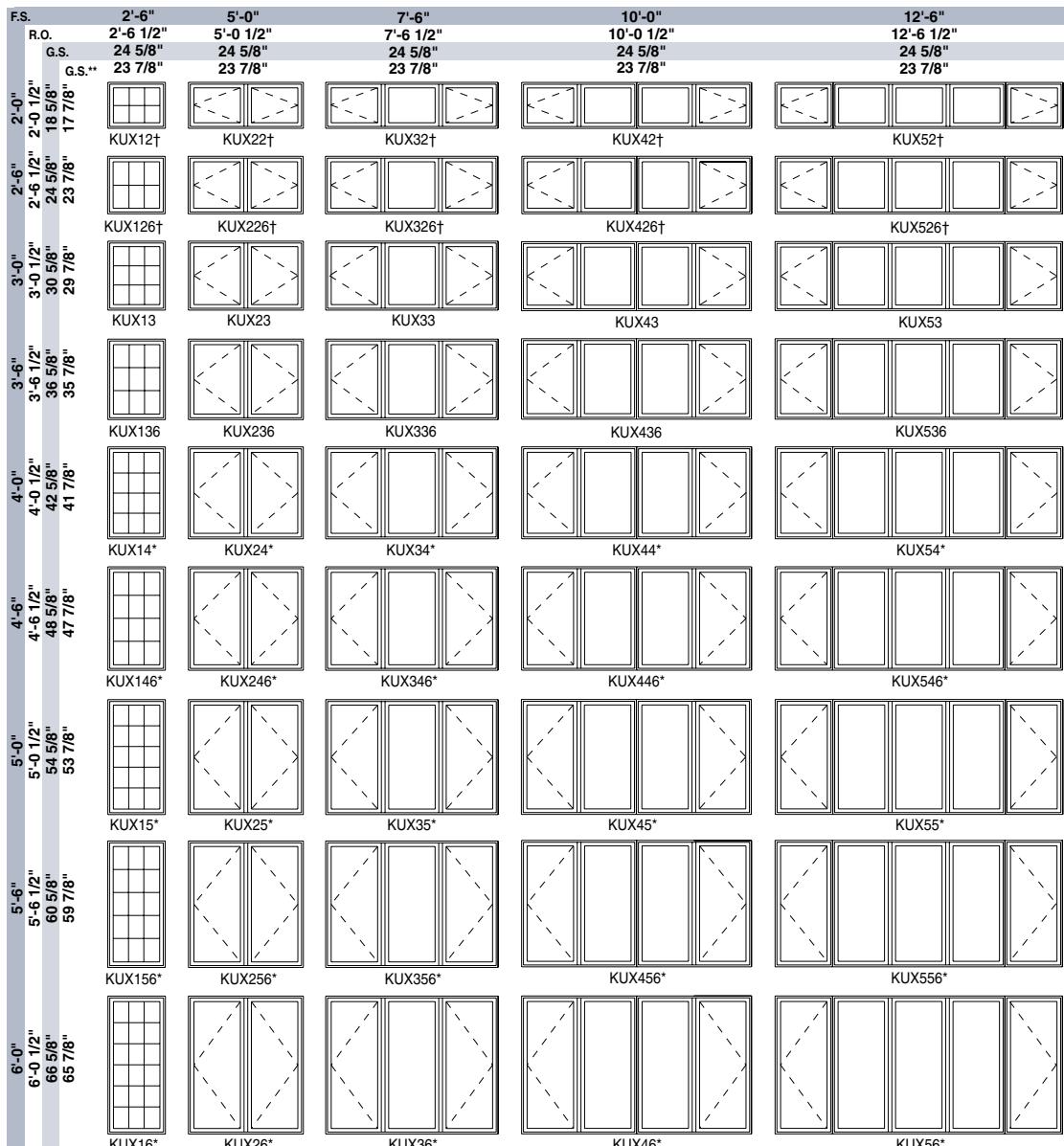
** Glass size for push-out casements

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

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

ULTRA SERIES | CASEMENTS

CASEMENTS | "X" SERIES



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.

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

ULTRA SERIES CASEMENTS

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"
KUE13	KUE23	KUE33	
KUE136*	KUE236*	KUE336*	
KUE14*	KUE24*	KUE34*	
KUE146*	KUE246*	KUE346*	
KUE15*	KUE25*	KUE35*	
KUE156*	KUE256*	KUE356*	
KUE16*	KUE26*	KUE36*	

NOTES.

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

Above sizes are available as Crank cut, FB Crank cut and Bush cut cassettes.

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.

For push-out casements, have dealer specify push-out when placing order for unit. Specification will be indicated on dealer's order. Variation in 16 and 20

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 go

For rough opening recommendations, see pg. 188.

* Units meet most national escape au-

** Glass size for push-out casements.

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"										
KUS114S	KUN114S	KUW114S	KUX114S	KUE114S	KUN214P	KUW214P	KU4614P	KUN314P	KUW314P	
KUS118S	KUN118S	KUW118S	KUX118S	KUE118S	KUN218P	KUW218P	KU4618P	KUN318P	KUW318P	
					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	
					KU1160P	KU1160P	KU1160P	KU1160P	KU1160P	KUW36P

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 lite 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"	3'-6"
	3'-0 1/2"	3'-6 1/2"	3'-6 1/2"
	30 5/8"	36 5/8"	36 5/8"
	29 7/8"	35 7/8"	35 7/8"
	UFN23	UFW23	UFX23
	UFN236	UFW236	UFX236**
	UFN24	UFW24	UFX24**
	UFN246	UFW246	UFX246**
	UFN25	UFW25	UFX25**
	UFN256		
	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.

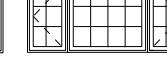
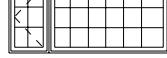
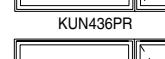
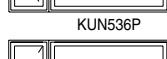
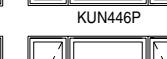
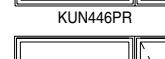
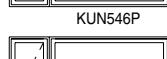
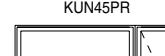
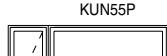
* Glass size for push-out casements.

** 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"
						
	KUN33PL	KUN33PR	KUN43P	KUN43PL	KUN43PR	KUN53P
						
	KUN336PL	KUN336PR	KUN436P	KUN436PL	KUN436PR	KUN536P
						
	KUN34PL	KUN34PR	KUN44P	KUN44PL	KUN44PR	KUN54P
						
	KUN346PL	KUN346PR	KUN446P	KUN446PL	KUN446PR	KUN546P
						
	KUN35PL	KUN35PR	KUN45P	KUN45PL	KUN45PR	KUN55P
						
	KUN356PL	KUN356PR	KUN456P	KUN456PL	KUN456PR	KUN556P
						
	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.

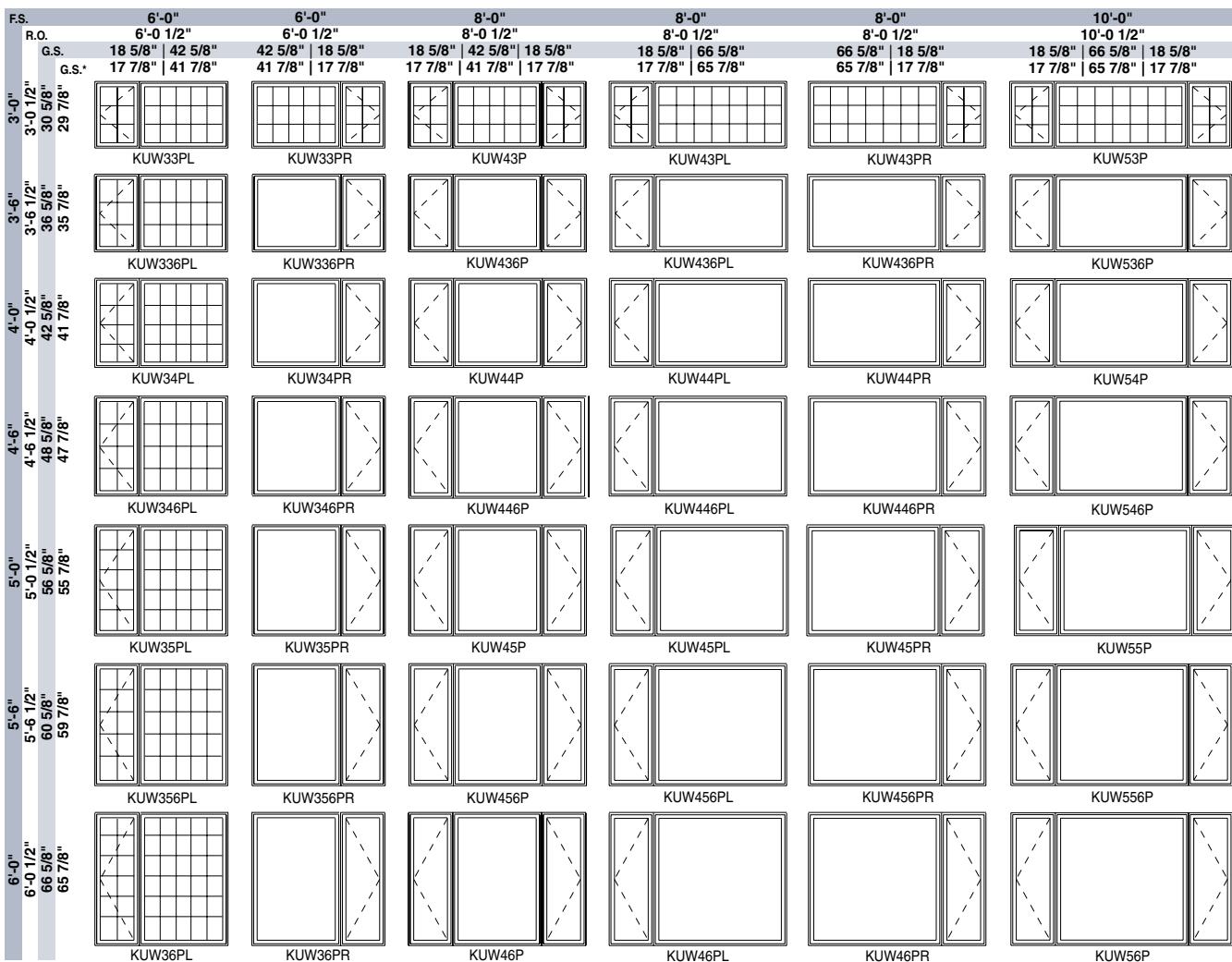
Divided lites are optional. Follow chart down from top row and across from 1st column to determine divided lite configurations. Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough 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.

* Class size for push-out assessments

• ES = Frame Size • RO = Rough Opening • GS = Glass Size

ULTRA SERIES | CASEMENTS

CASEMENTS | "W" SERIES PICTURE UNIT COMBINATIONS



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.

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

ULTRA SERIES | CASEMENTS

CASEMENTS | "N" SERIES BOW WINDOWS



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.)

CASEMENTS | "W" SERIES BOW WINDOWS



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.

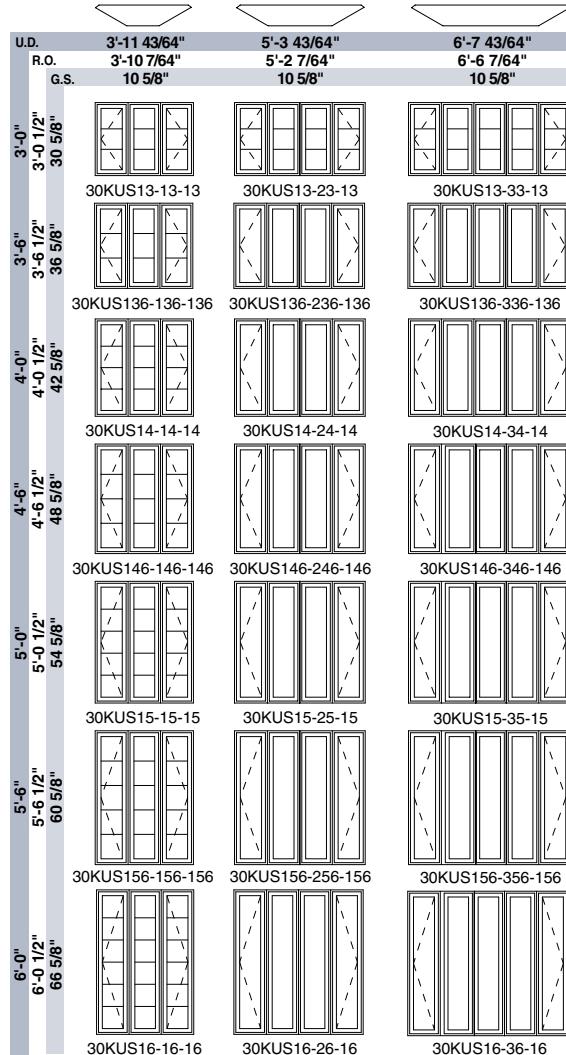
For rough opening recommendations, see pg. 188.

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"



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



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.

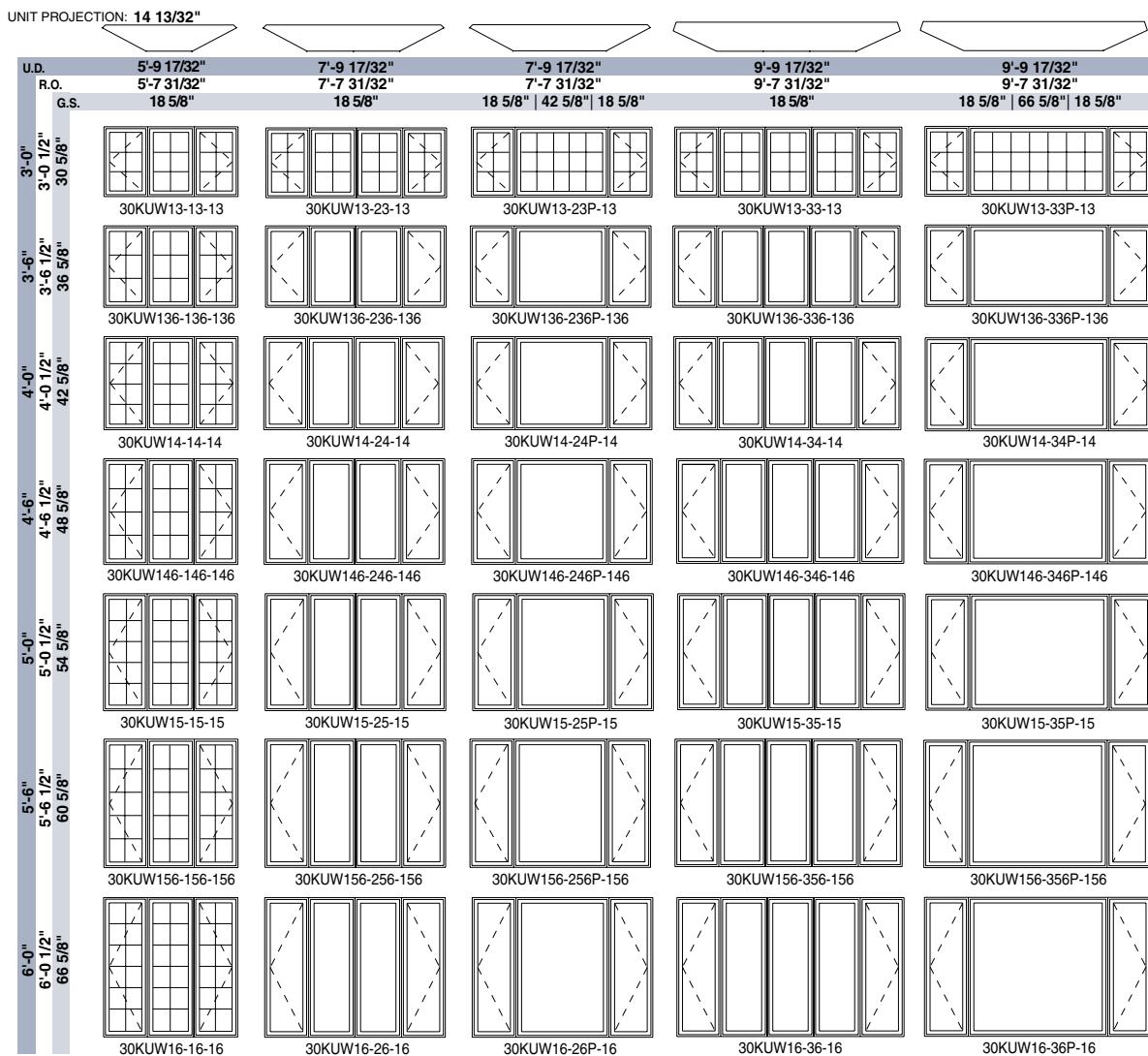
Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

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



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.

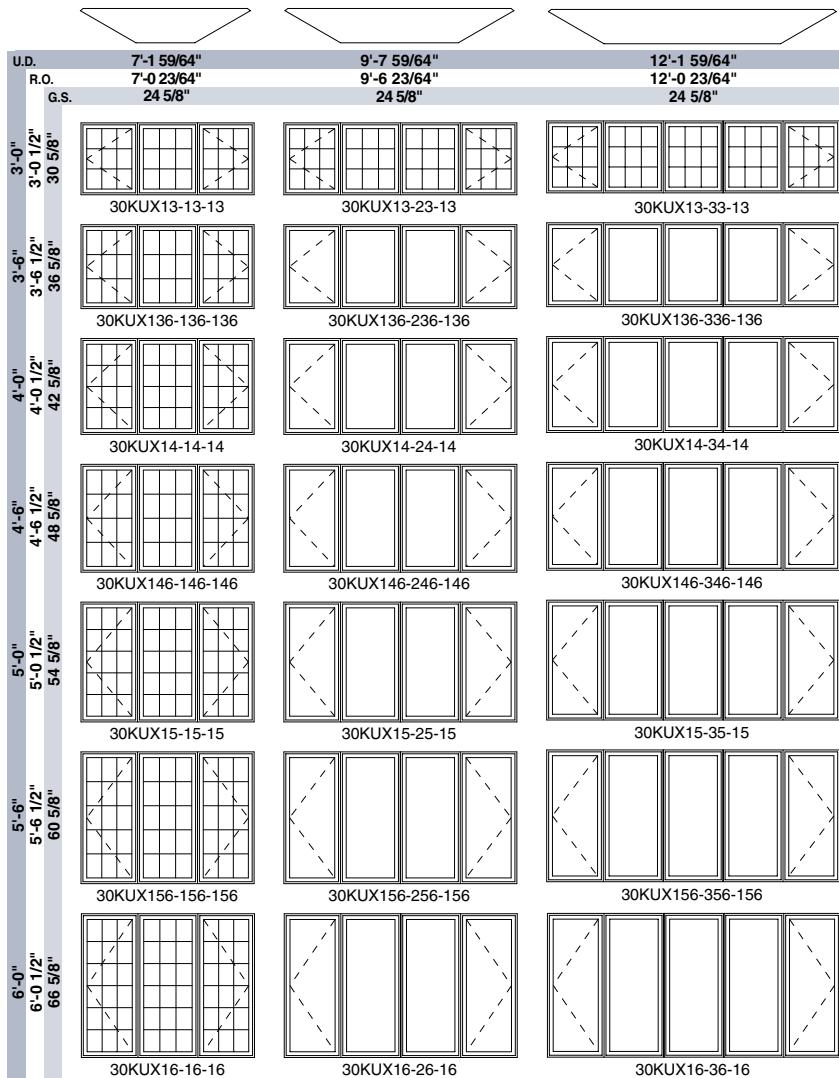
Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

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 | "X" SERIES 30° BAY WINDOWS

UNIT PROJECTION: 17 13/32"



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.

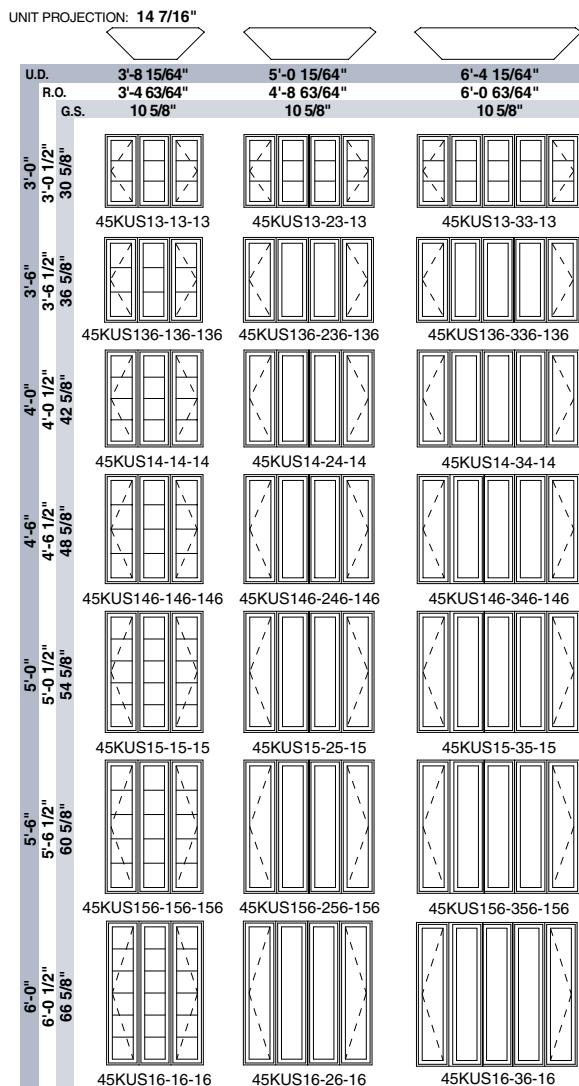
Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

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 | "S" SERIES 45° BAY WINDOWS



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.

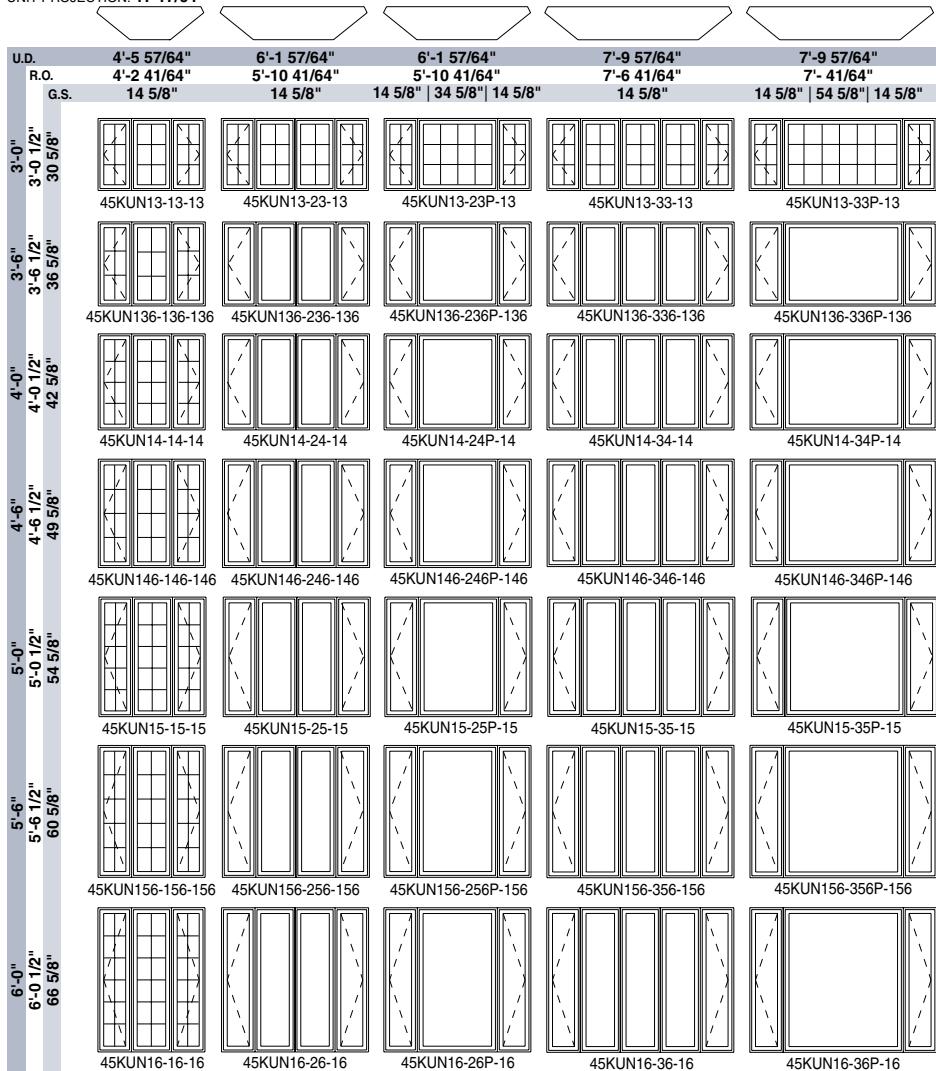
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good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



NOTES.

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

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

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

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

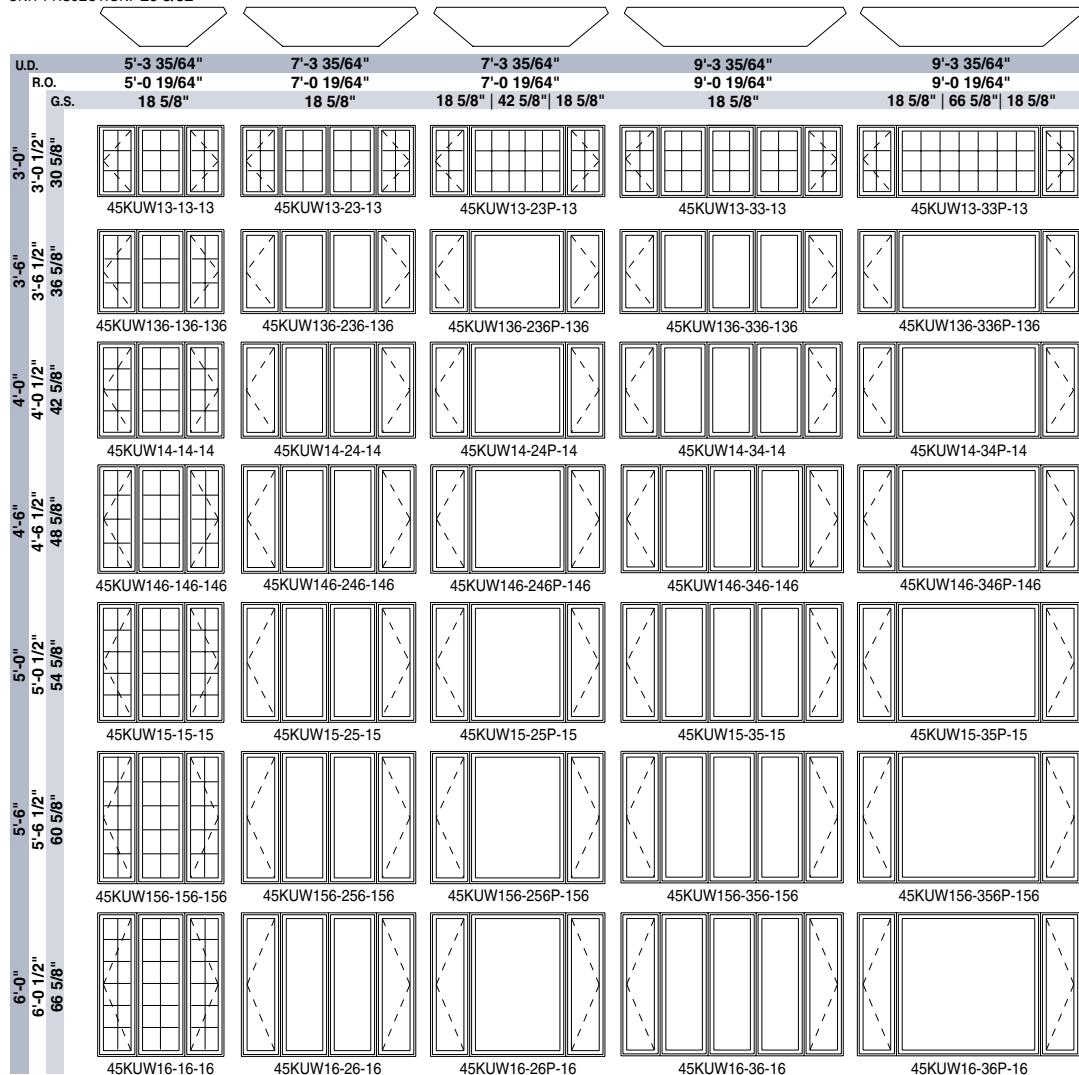
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within code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

UD = Unit Dimension • P.O. = Punch Opening • C.S. = Clay Size (Clay sizes are shown per each 1000 cu. yds.)

ULTRA SERIES | CASEMENTS

CASEMENTS | "W" SERIES 45° BAY WINDOWS

UNIT PROJECTION: 20 3/32"



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.

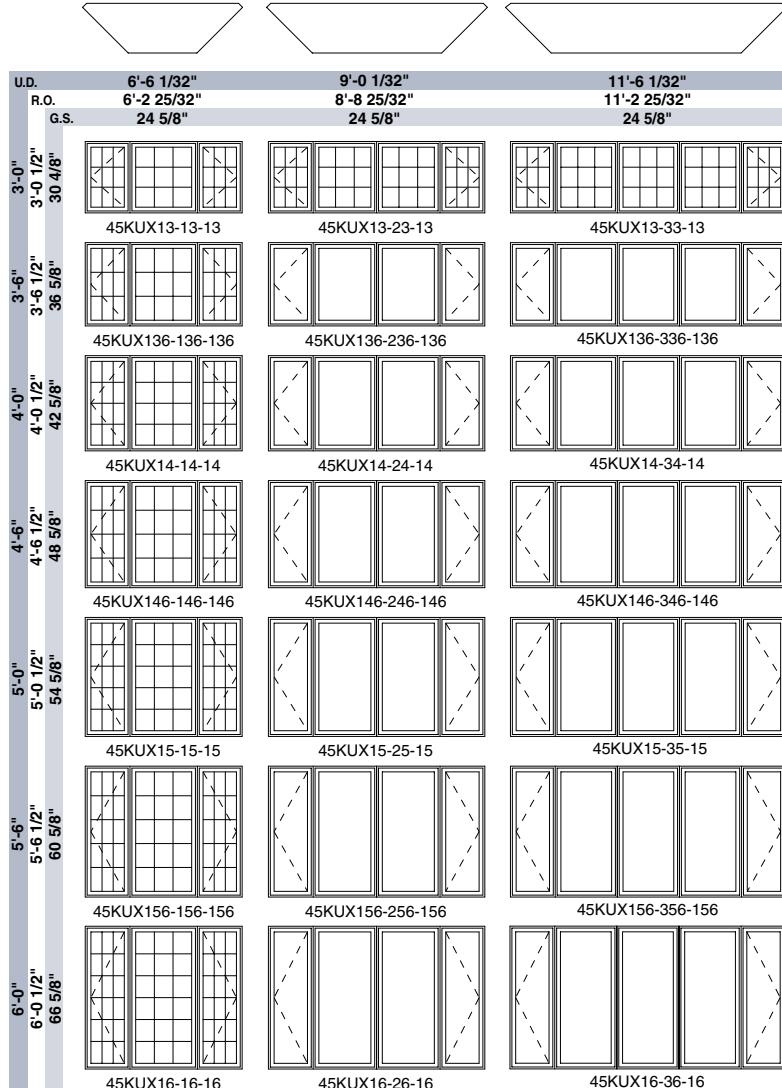
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good 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 | "X" SERIES 45° BAY WINDOWS

UNIT PROJECTION: 24 11/32"



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.

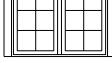
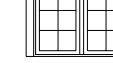
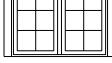
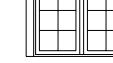
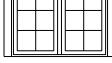
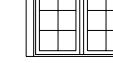
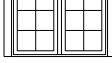
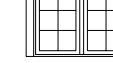
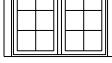
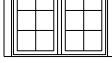
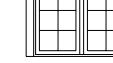
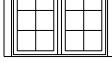
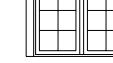
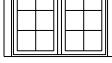
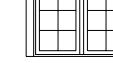
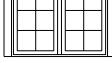
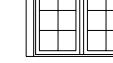
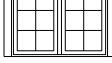
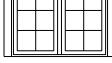
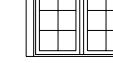
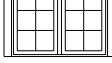
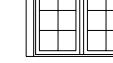
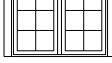
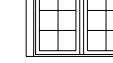
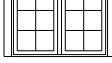
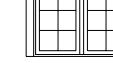
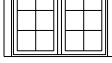
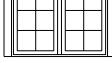
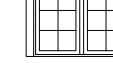
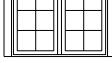
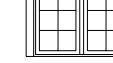
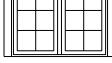
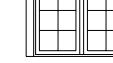
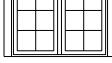
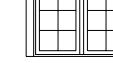
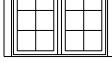
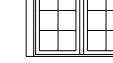
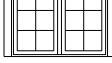
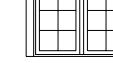
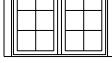
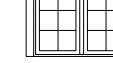
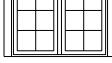
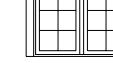
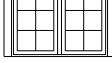
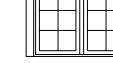
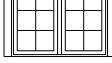
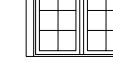
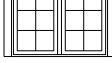
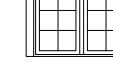
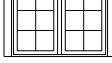
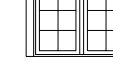
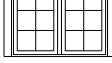
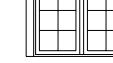
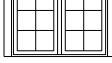
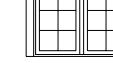
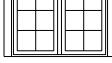
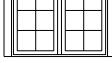
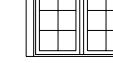
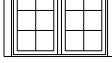
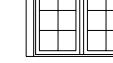
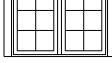
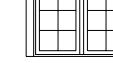
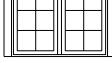
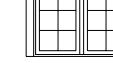
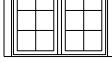
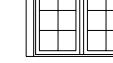
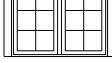
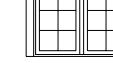
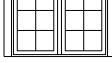
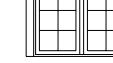
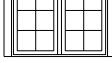
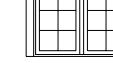
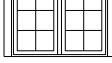
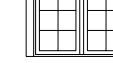
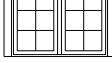
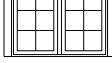
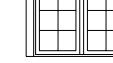
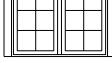
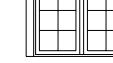
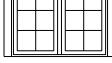
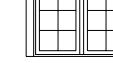
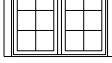
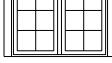
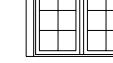
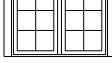
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good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

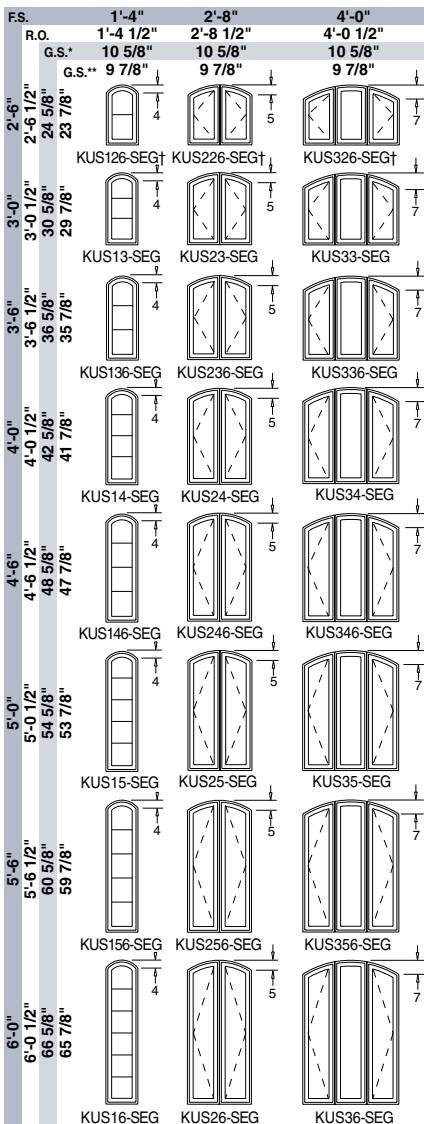
CASEMENTS | 90° BAY WINDOWS

UNIT PROJECTION: 22 51/64"

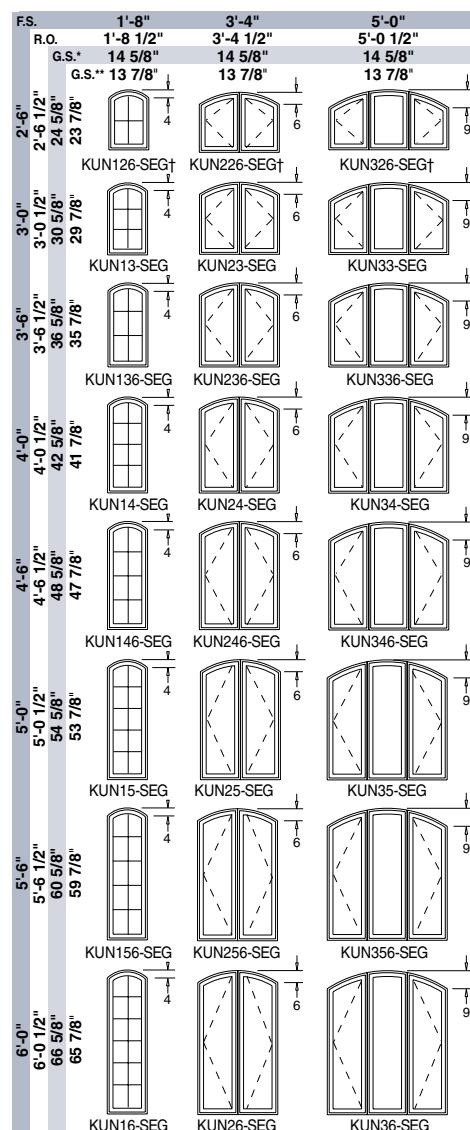
U.D.	4'-8 7/64"	4'-8 7/64"	6'-8 7/64"
R.O.	4'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.	18 5/8"	42 5/8"	18 5/8"
	3'-0" 30 5/8"	3'-0 1/2" 36 5/8"	3'-0" 66 5/8"
			
	KUS13-W23-S13	KUS13-W23P-S13	KUS13-W33-S13
			
	KUS136-W236-S136	KUS136-W236P-S136	KUS136-W336-S136
			
	KUS14-W24-S14	KUS14-W24P-S14	KUS14-W34-S14
			
	KUS146-W246-S146	KUS146-W246P-S146	KUS146-W346-S146
			
	KUS15-W25-S15	KUS15-W25P-S15	KUS15-W35-S15
			
	KUS156-W256-S156	KUS156-W256P-S156	KUS156-W356-S156
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
			
	KUS16-W26-S16	KUS16-W26P-S16	KUS16-W36-S16
		<img alt="Diagram of a 4'-8 7/64" wide 3-unit bay window with 66	

ULTRA SERIES | CASEMENTS

SEGMENT HEAD CASEMENTS | "S" SERIES



SEGMENT HEAD CASEMENTS | "N" SERIES



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 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.

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

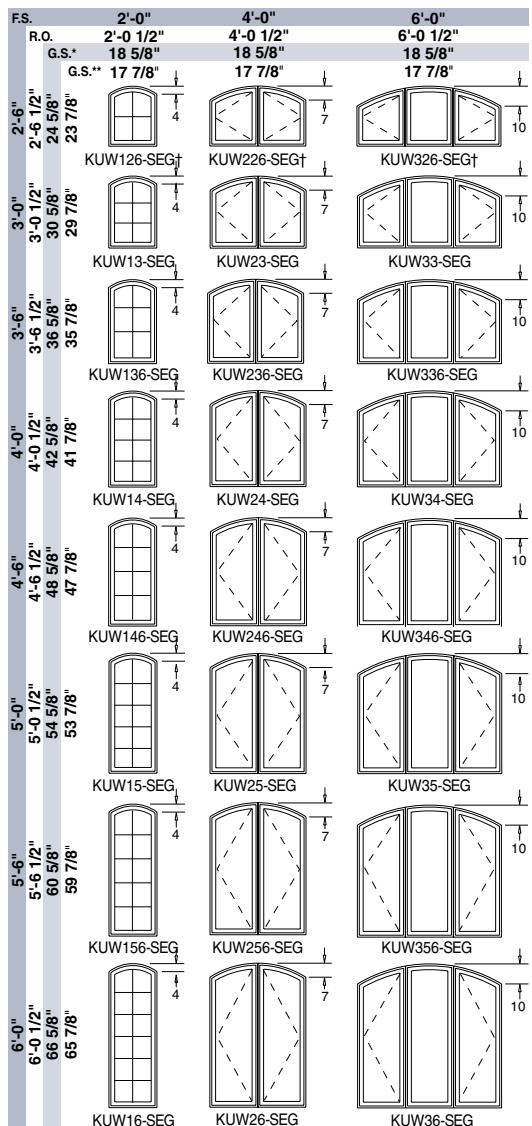
** Glass size for push-out casements.

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

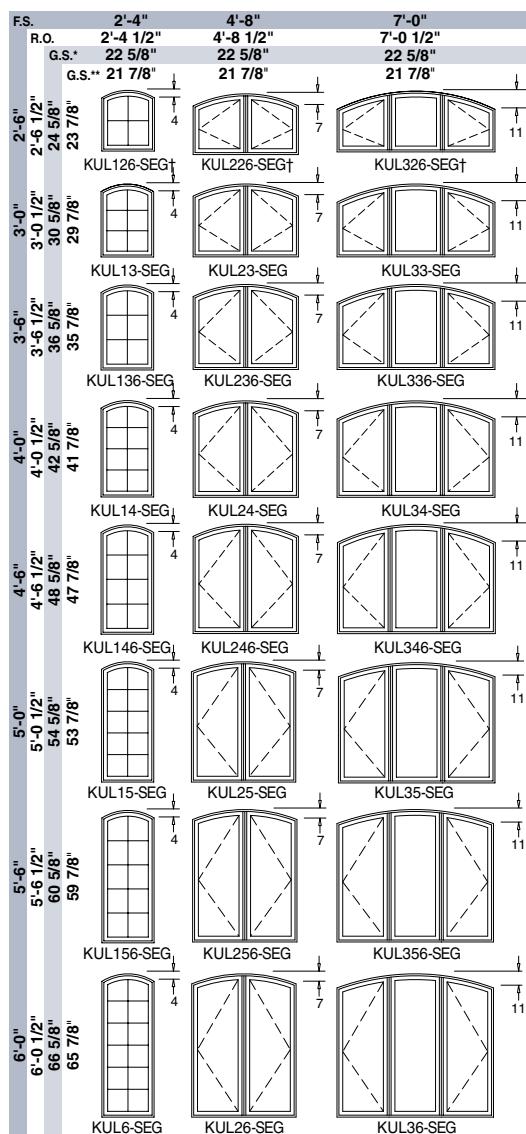
F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

ULTRA SERIES | CASEMENTS

SEGMENT HEAD CASEMENTS | "W" SERIES



SEGMENT HEAD CASEMENTS | "L" SERIES



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 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.

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

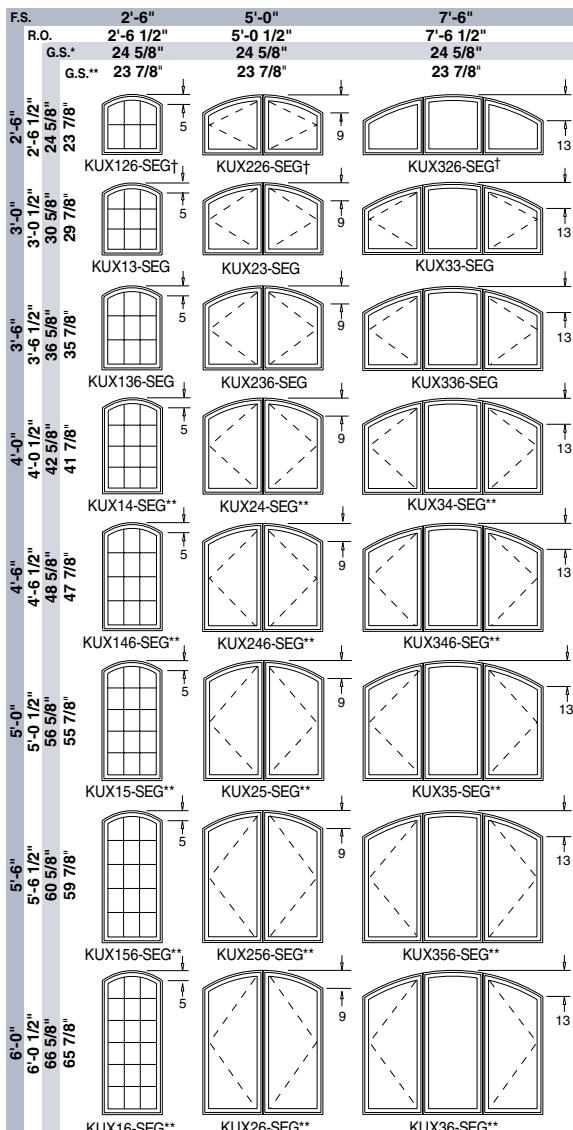
** Glass size for push-out casements.

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

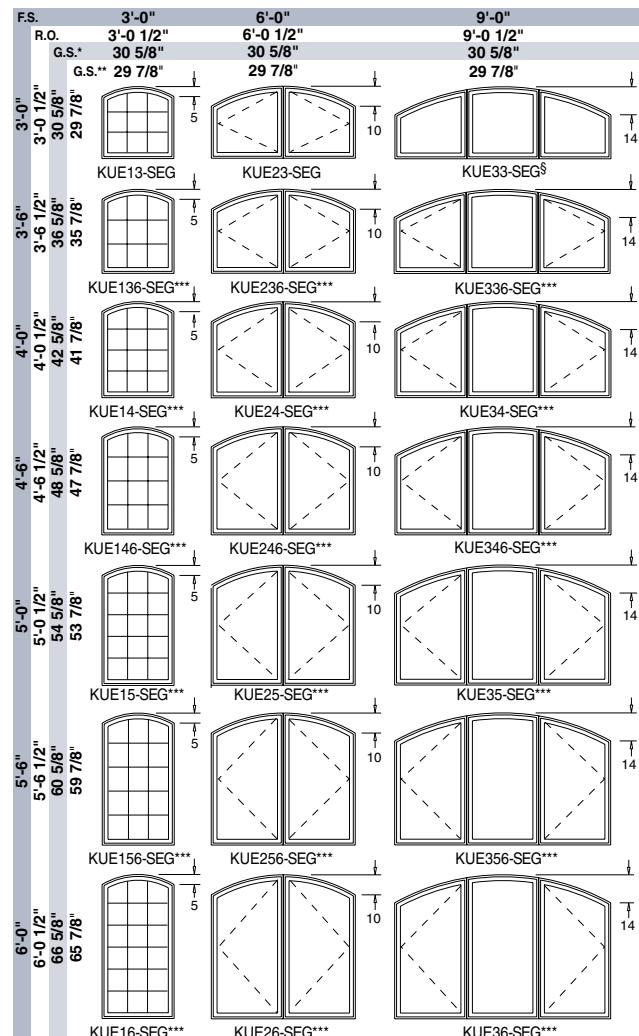
ES. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

ULTRA SERIES CASEMENTS

SEGMENT HEAD CASEMENTS "X" SERIES



SEGMENT HEAD CASEMENTS "E" SERIES



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 mulled units.

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.

*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.

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

† Push-out units only available with

§ Only available as stationary units.

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"	1'-8"	2'-0"	2'-6"	2'-0"
	1'-8 1/2"	1'-8 1/2"	2'-0 1/2"	2'-6 1/2"	2'-0 1/2"
	10 5/8"	18 5/8"	24 5/8"	30 5/8"	36 5/8"
	9 7/8"	13 7/8"	17 7/8"	23 7/8"	29 7/8"
	KUN214P-SEG	KUW214P-SEG	KU4614P-SEG	KUN314P-SEG	KUW314P-SEG
	6	7	7	9	10
	KUN218P-SEG	KUW218P-SEG	KU4618P-SEG	KUN318P-SEG	KUW318P-SEG
	6	7	7	9	10
	KUN22P-SEG	KUW22P-SEG	KU4620P-SEG	KUN32P-SEG	KUW32P-SEG
	6	7	7	9	10
	KUN226P-SEG	KUW226P-SEG	KU4626P-SEG	KUN326P-SEG	KUW326P-SEG
	6	7	7	9	10
	KUN23P-SEG	KUW23P-SEG	KU4630P-SEG	KUN33P-SEG	KUW33P-SEG
	6	7	7	9	10
	KUN236P-SEG	KUW236P-SEG	KU4636P-SEG	KUN336P-SEG	KUW336P-SEG
	6	7	7	9	10
	KUN24P-SEG	KUW24P-SEG	KU4640P-SEG	KUN34P-SEG	KUW34P-SEG
	6	7	7	9	10
	KUN246P-SEG	KUW246P-SEG	KU4646P-SEG	KUN346P-SEG	KUW346P-SEG
	6	7	7	9	10
	KUN25P-SEG	KUW25P-SEG	KU4650P-SEG	KUN35P-SEG	KUW35P-SEG
	6	7	7	9	10
	KUN256P-SEG	KUW256P-SEG	KU4656P-SEG	KUN356P-SEG	KUW356P-SEG
	6	7	7	9	10
	KUN26P-SEG	KUW26P-SEG	KU4660P-SEG	KUN36P-SEG	KUW36P-SEG
	6	7	7	9	10

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"
	24 5/8"	24 7/8"	26 1/2"	26 1/2"	30 1/2"
					
	KUN126-HC†	KUW126-HC†	KUL126-HC†	KUX126-HC†	KUE126-HC†
					
	KUN13-HC	KUW13-HC	KUL13-HC	KUX13-HC	KUE13-HC
					
	KUN136-HC	KUW136-HC	KUL136-HC	KUX136-HC	KUE136-HC
					
	KUN14-HC	KUW14-HC	KUL14-HC	KUX14-HC**	KUE14-HC
					
	KUN146-HC	KUW146-HC	KUL146-HC	KUX146-HC***	KUE146-HC
					
	KUN15-HC	KUW15-HC	KUL15-HC	KUX15-HC***	KUE15-HC***
					
	KUN156-HC	KUW156-HC	KUL156-HC	KUX156-HC***	KUE156-HC***
					
	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.

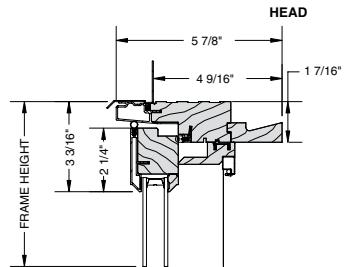
† Push-out units only available with single-point hardware.

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

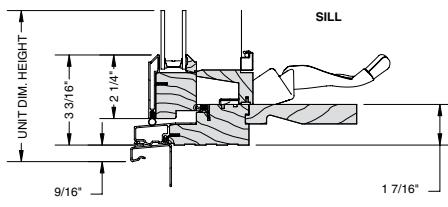
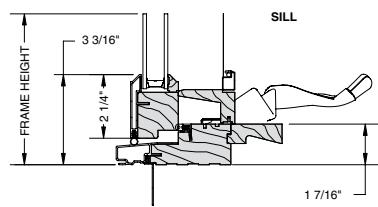
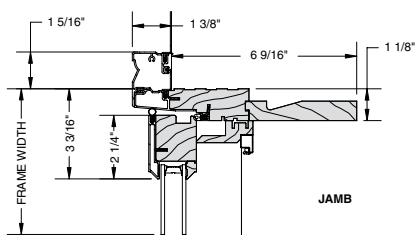
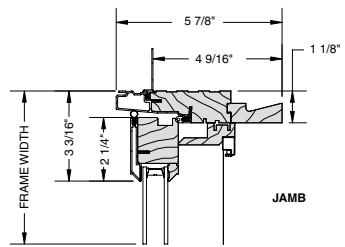
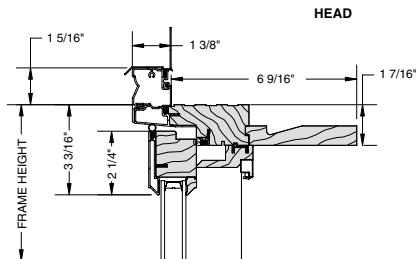
ULTRA SERIES | CASEMENTS

CRANK-OUT CASEMENT CROSS SECTION DRAWINGS

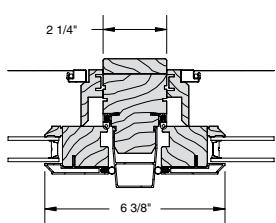
Standard Crank-out Casement



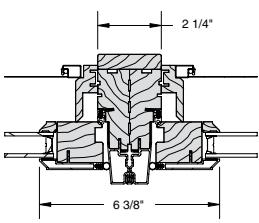
Crank-out Casement with 1-15/16" Brickmould & 6 9/16" Jamb



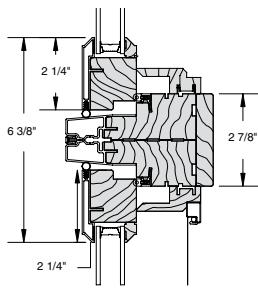
CRANK-OUT CASEMENT
STANDARD MULLION



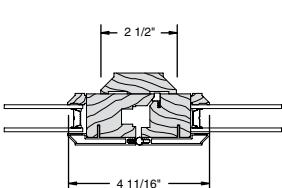
CRANK-OUT CASEMENT
NARROW MULLION



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.

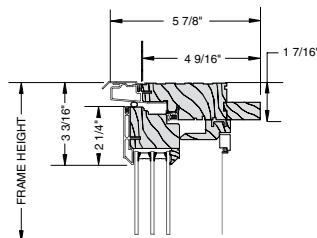
Some units are shown with optional drip cap or nailing fin.

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

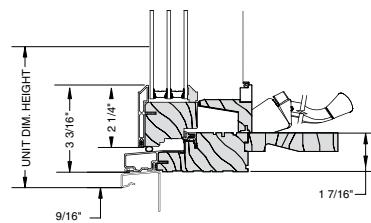
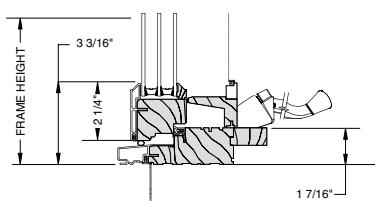
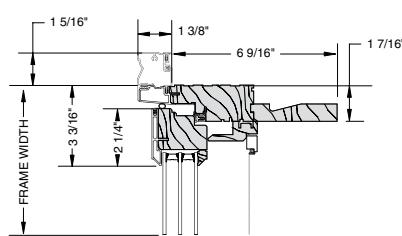
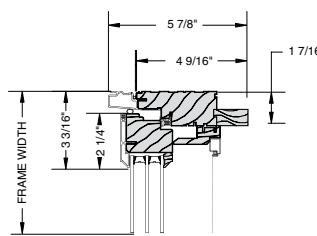
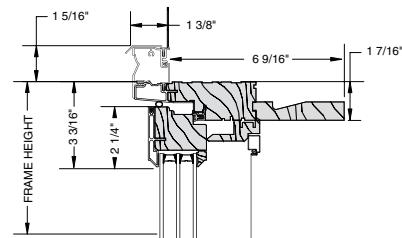
Additional and the most current drawings are available at www.kolbe-kolbe.com.

CRANK-OUT EP CASEMENT CROSS SECTION DRAWINGS

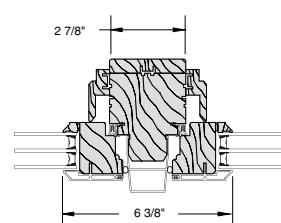
Standard Crank-out EP Casement



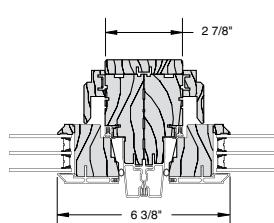
Crank-out EP Casement with 1-15/16" Brickmould & 6 9/16" Jamb



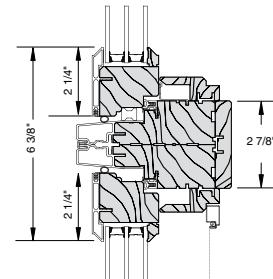
CRANK-OUT EP CASEMENT
STANDARD MULLION



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.

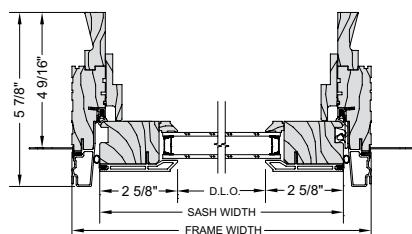
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

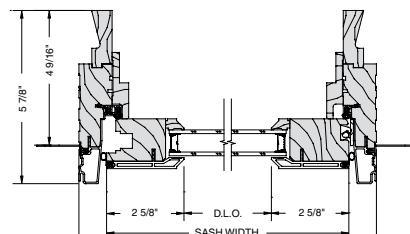
ULTRA SERIES | CASEMENTS

PUSH-OUT CASEMENT CROSS SECTION DRAWINGS

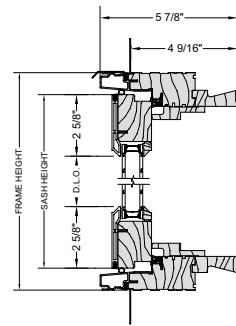
Horizontal Section - Single-point lock



Horizontal Section - Multi-point lock

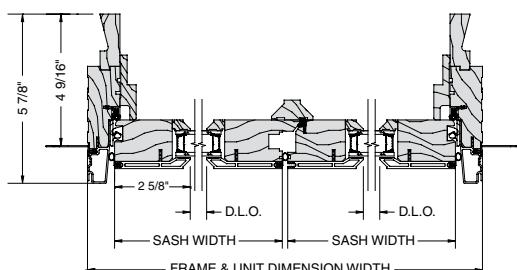


Vertical Section

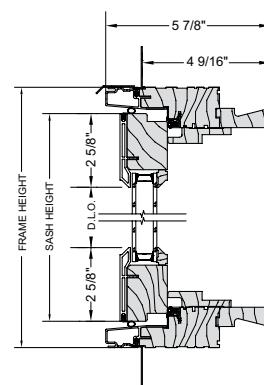


FRENCH PUSH-OUT CASEMENT CROSS SECTION DRAWINGS

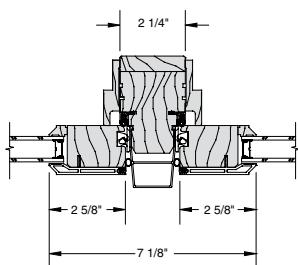
Horizontal Section



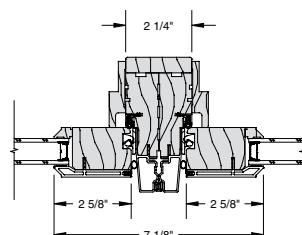
Vertical Section



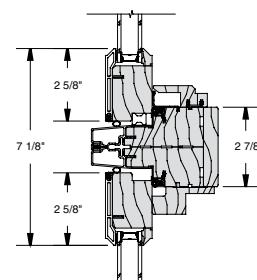
PUSH-OUT CASEMENT
STANDARD MULLION



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.

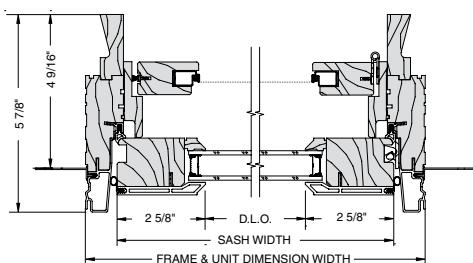
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

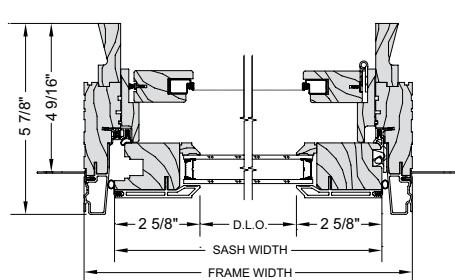
ULTRA SERIES | CASEMENTS

PUSH-OUT CASEMENT SWINGING SCREEN DRAWINGS

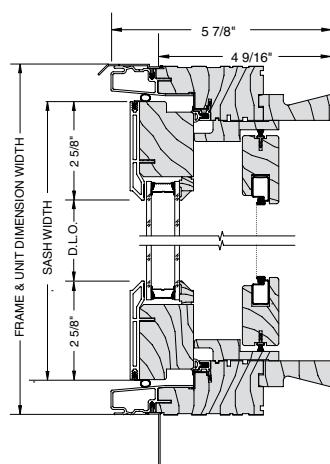
Horizontal Section, Single-point Lock



Horizontal Section, Multi-point Lock

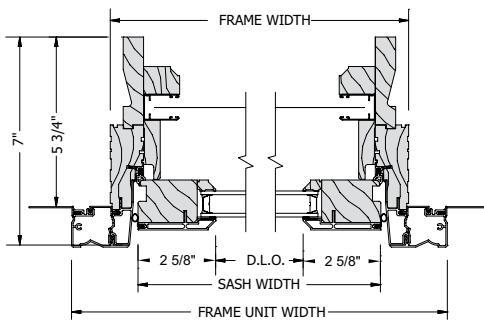


Vertical Section

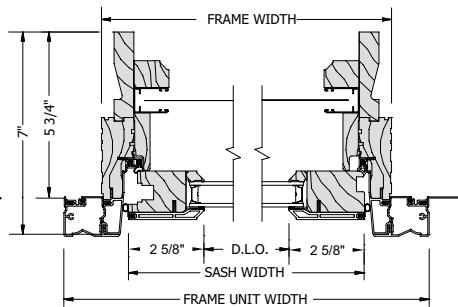


PUSH-OUT CASEMENT RETRACTABLE SCREEN DRAWINGS

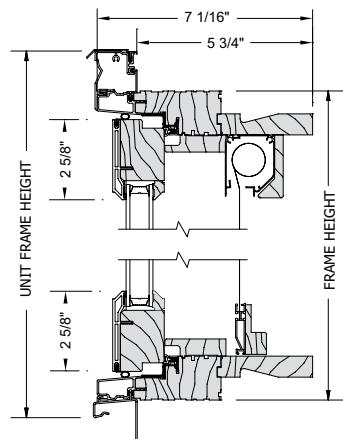
Horizontal Section, Single-point Lock



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.

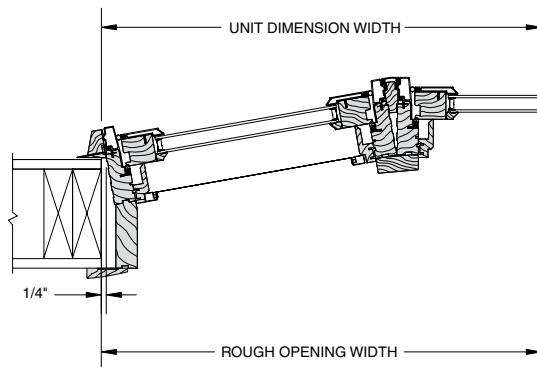
Some units are shown with optional drip cap or nailing fin.

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

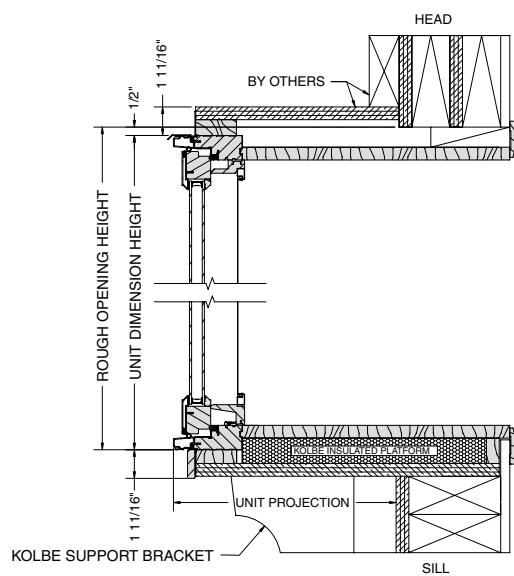
Additional and the most current drawings are available at www.kolbe-kolbe.com.

CASEMENT BOW & BAY CROSS SECTION DRAWINGS

Bow Horizontal Section



Bow & Bay Vertical Section



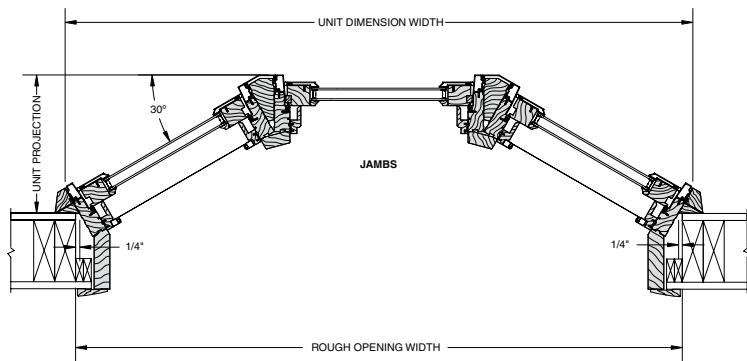
NOTES:

Drawings are not to scale.

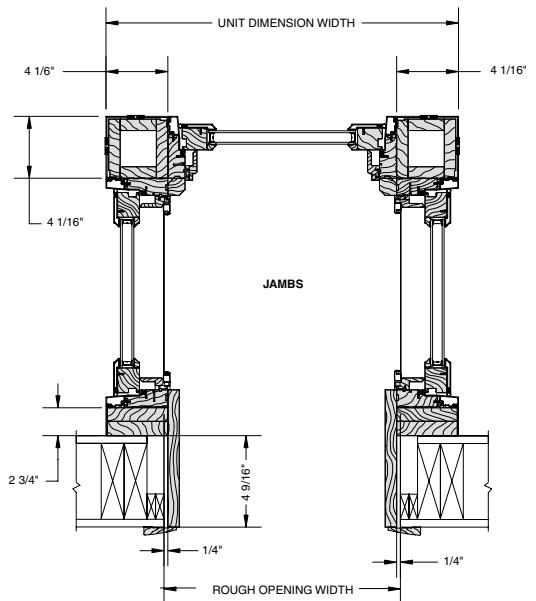
Bows and bays are only available as Crank-out casements, not EP Crank-out casements or Push-out casements.

CASEMENT BOW & BAY CROSS SECTION DRAWINGS

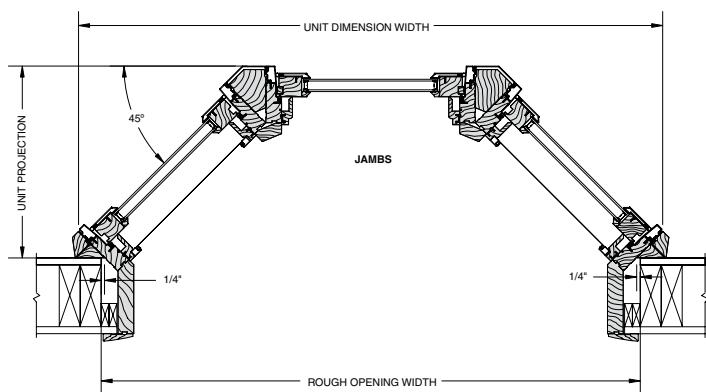
30° Bay Horizontal Section



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

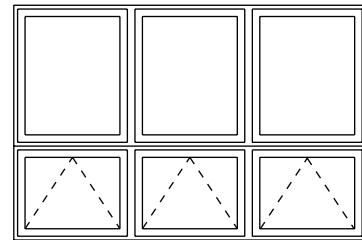
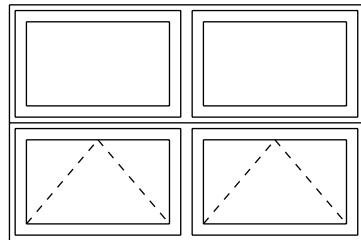
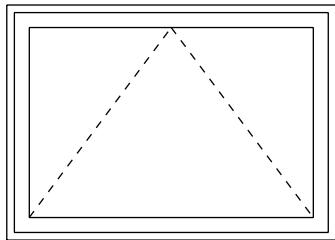
CRANK-OUT AWNINGS

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 mulled units
- 7/8" LoE²-270 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[®] 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[®] 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 LoE²-270 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)

- LoE²-240*
- LoE³-366*
- 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:

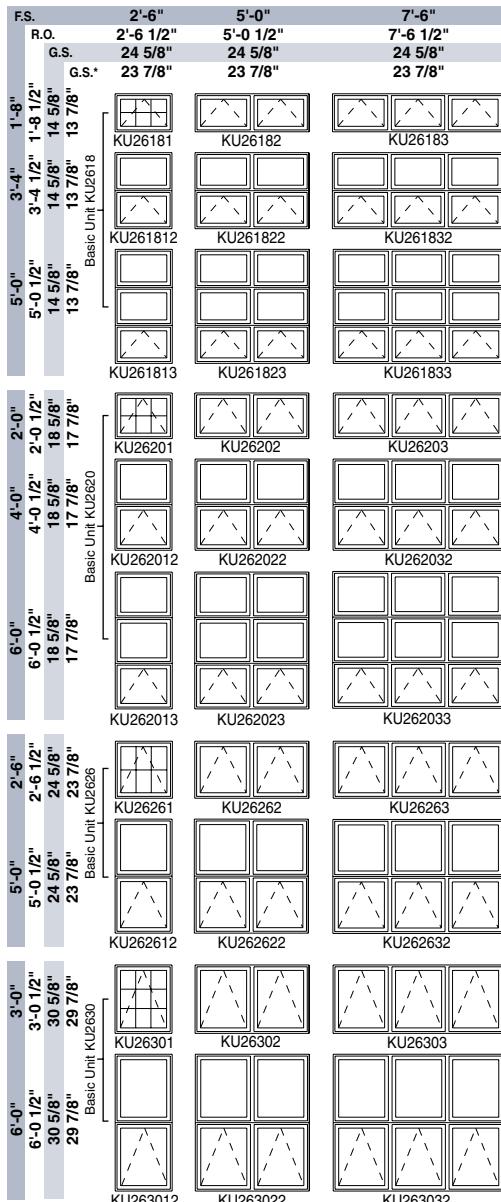
All measurements are nominal.

* 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



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.

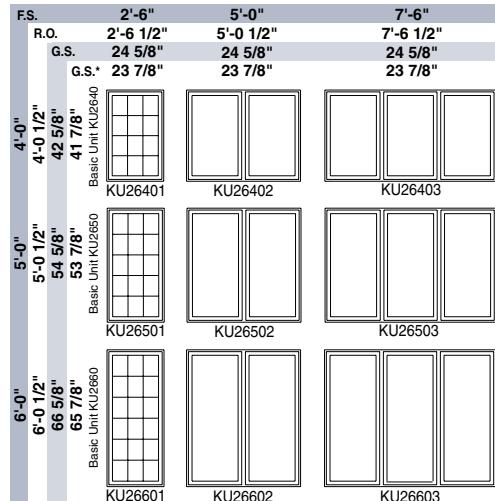
For rough opening recommendations, see pg. 188.

* Glass size for push-out awnings

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

AWNING PICTURE UNITS

2' 6" widths



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.

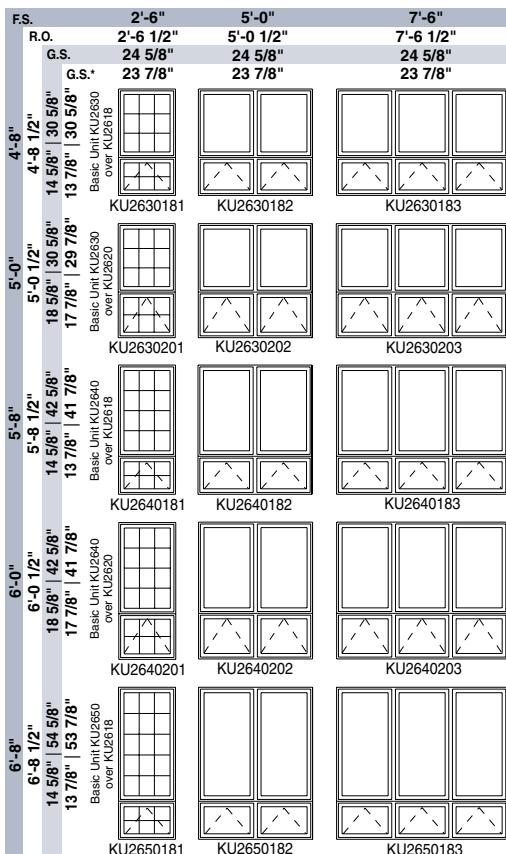
Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with 1 15/16" brickmould, 3 1/2" casing with traditional sill nosing or 3 1/2" flat casing and backband with 2 1/8" projected sill nosing.

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"

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

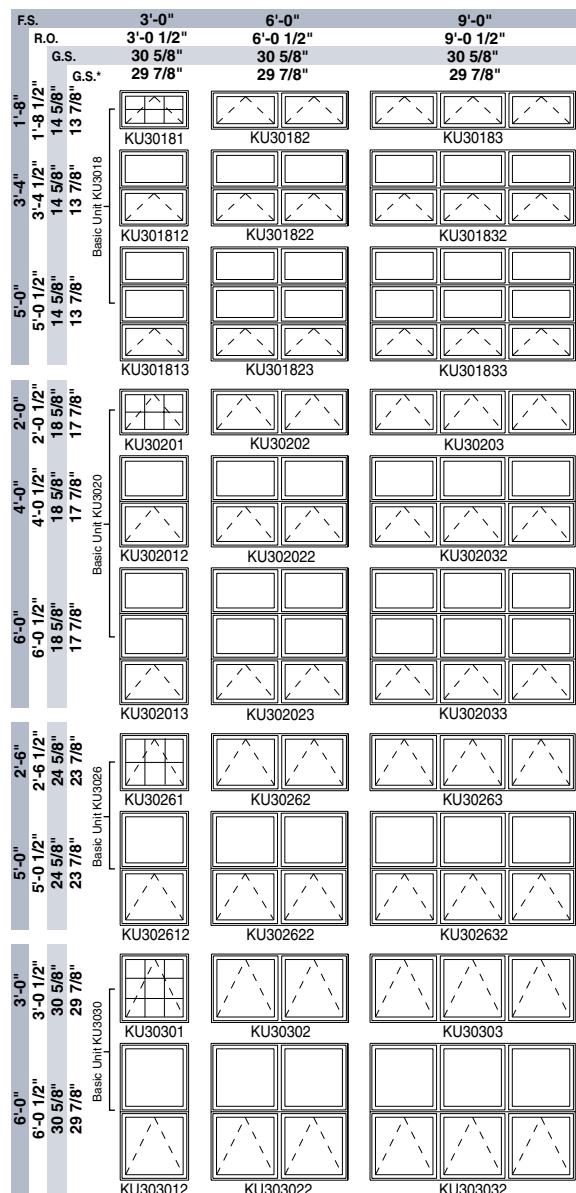
AWNING UNIT COMBINATIONS

2' 6" widths



AWNING UNITS & MULL CONFIGURATIONS

3' 0" widths



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.

ES. = 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"	4'-0"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"	4'-0 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"	42 5/8"
G.S.*	29 7/8"	29 7/8"	29 7/8"	41 7/8"
				Basic Unit KU3600

AWNING UNIT COMBINATIONS

3' 0" widths

F.S.	3'-0"	6'-0"	9'-0"	4'-8"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"	4'-8 1/2"
G.S.	30 5/8"	30 5/8"	30 5/8"	30 5/8"
G.S.*	29 7/8"	29 7/8"	29 7/8"	29 7/8"
				Basic Unit KU3030

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"	
			Basic Unit KU3600	

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.)

ULTRA SERIES AWNINGS

AWNINGS 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"
Basic Unit KU3640			
KU36401			
Basic Unit KU3650			
KU36501			
Basic Unit KU3660			
KU36601			

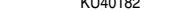
AWNINGS UNIT COMBINATIONS

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"
	35 7/8"	35 7/8"	35 7/8"
	4'-8"		
KU3630181			
KU3630182			
KU3630183			
	5'-0"		
KU3630201			
KU3630202			
KU3630203			
	5'-8"		
KU3640181			
KU3640182			
KU3640183			
	6'-0"		
KU3640201			
KU3640202			
KU3640203			
	6'-4"		
KU3650181			
KU3650182			
KU3650183			
	6'-8"		
	6'-8 1/2"		
	14 5/8" 54 5/8"		
	13 7/8" 53 7/8"		
	Basic Unit KU3650 over KU3618		

AWNINGS 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"
	42 5/8"	42 5/8"	42 5/8"
	41 7/8"	41 7/8"	41 7/8"
			
	KU40181	KU40182	KU40183
			
	KU401812	KU401822	KU401832
			
	KU401813	KU401823	KU401833
			
	KU40201	KU40202	KU40203
			
	KU402012	KU402022	KU402032
			
	KU402013	KU402023	KU402033
			
	KU40261	KU40262	KU40263
			
	KU402612	KU402622	KU402632
			
	KU40301	KU40302	KU40303
			
	KU403012	KU403022	KU403032

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, 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"	4'-0"
R.O.	4'-0 1/2"	8'-0 1/2"	12'-0 1/2"	4'-0 1/2"
G.S.	42 5/8"	42 5/8"	42 5/8"	42 5/8"
	41 7/8"	41 7/8"	41 7/8"	41 7/8"
KU40401	KU40402	KU40403		
KU40501	KU40502	KU40503		
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.)

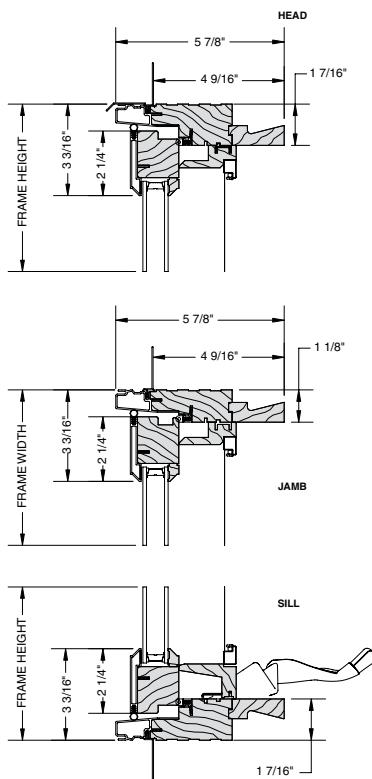
AWNING UNIT COMBINATIONS

4' 0" widths

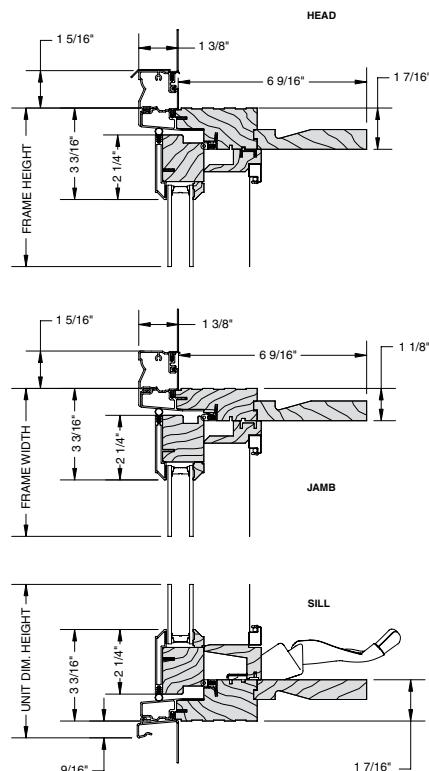
F.S.	4'-0"	8'-0"	12'-0"	4'-0"
R.O.	4'-0 1/2"	8'-0 1/2"	12'-0 1/2"	4'-0 1/2"
G.S.	42 5/8"	42 5/8"	42 5/8"	42 5/8"
	41 7/8"	41 7/8"	41 7/8"	41 7/8"
KU4030181	KU4030182	KU4030183		
KU4030201	KU4030202	KU4030203		
KU4040181	KU4040182	KU4040183		
KU4040201	KU4040202	KU4040203		
KU4050181	KU4050182	KU4050183		

CRANK-OUT AWNING CROSS SECTION DRAWINGS

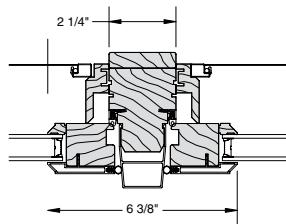
Standard Crank-out Awning



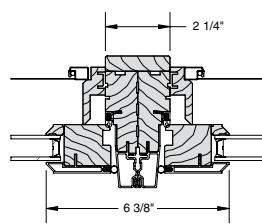
Crank-out Awning with 1-15/16" Brickmould
& 6 9/16" Jamb



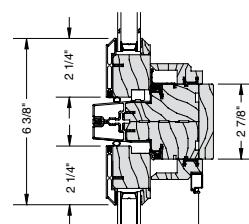
CRANK-OUT AWNING
STANDARD MULLION



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.

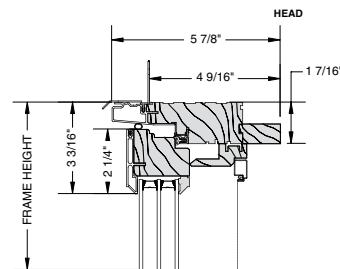
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

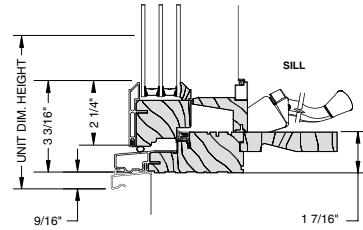
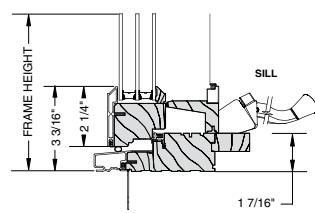
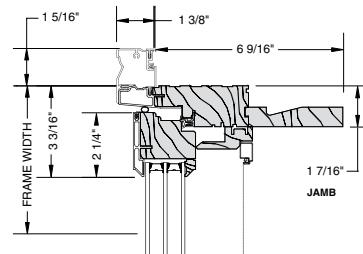
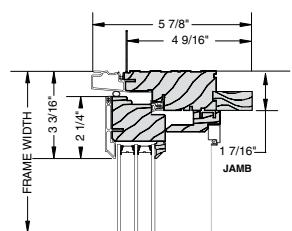
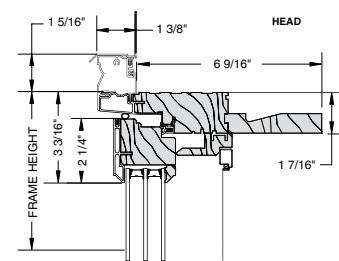
ULTRA SERIES AWNINGS

CRANK-OUT EP Awning Cross Section Drawings

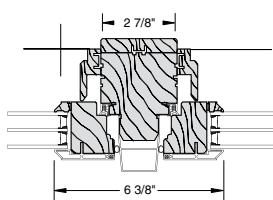
Standard Crank-out EP Awning



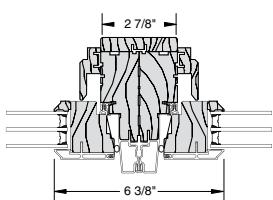
Crank-out EP Awning with 1-15/16" Brickmould & 6-9/16" Jamb



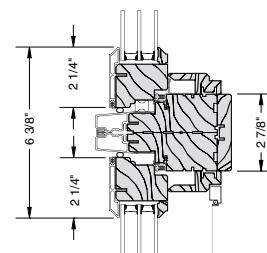
CRANK-OUT EP Awning STANDARD MULLION



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.

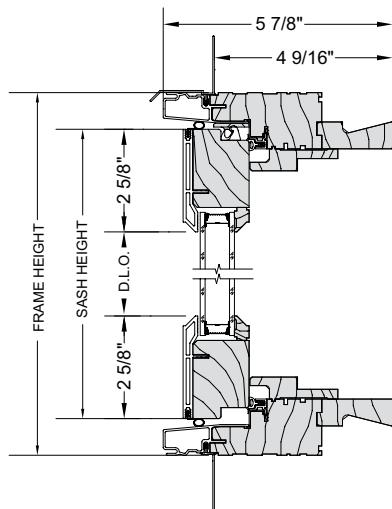
Some units are shown with optional drip cap or nailing fin.

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

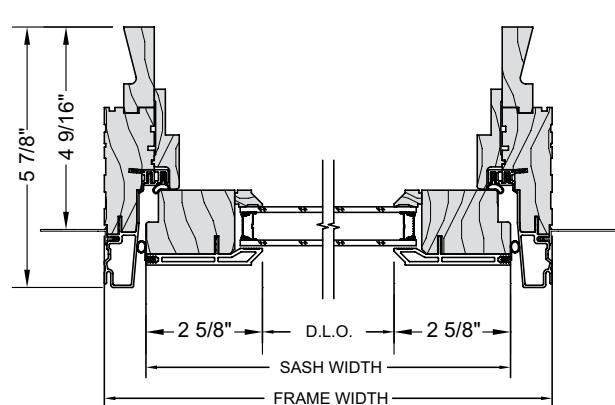
Additional and the most current drawings are available at www.kolbe-kolbe.com.

PUSH-OUT AWNING CROSS SECTION DRAWINGS

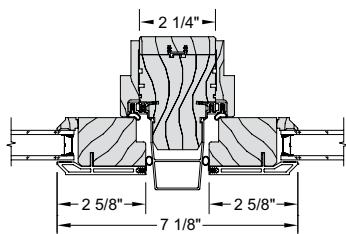
Vertical Section



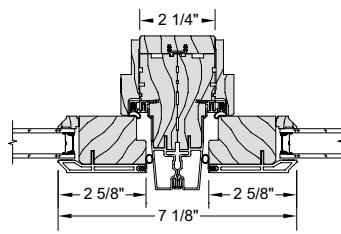
Horizontal Section



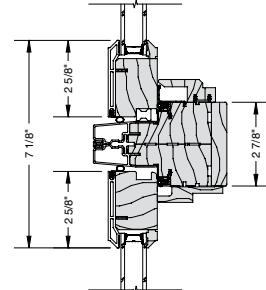
PUSH-OUT AWNING
STANDARD MULLION



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.



ULTRA SERIES | DOUBLE HUNGS

STERLING DOUBLE HUNGS

MAJESTA® DOUBLE HUNGS

MAGNUM DOUBLE HUNGS

TRADITIONAL DOUBLE HUNGS

POCKET DOUBLE HUNGS

COTTAGE-STYLE & REVERSE-COTTAGE STYLE

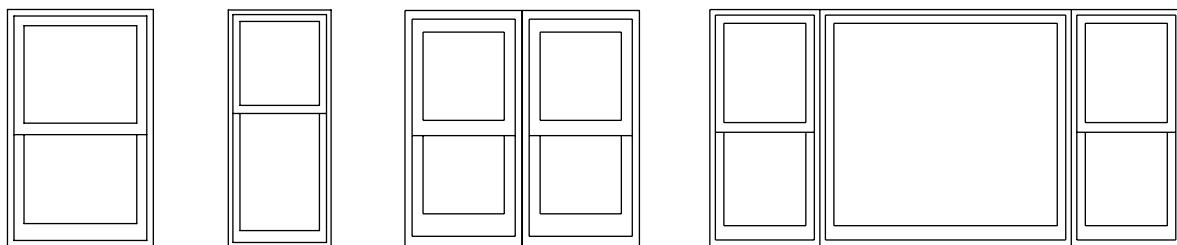
STUDIO & TRANSOM UNITS

PICTURE COMBINATION UNITS

BAY UNITS

SEGMENT HEAD & HALF-CIRCLE TOP UNITS

SINGLE HUNGS



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.



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.

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" LoE²-270 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.



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.

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):

- LoE².240*
- LoE³.366*
- 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.



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" LoE²-270 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 jambliners and balance system using a wood-wrapped jambliner 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 jambliners 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 rail 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):

- LoE²-240*
- LoE³-366*
- 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)

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.

- 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

ULTRA SERIES | MAGNUM DOUBLE HUNGS

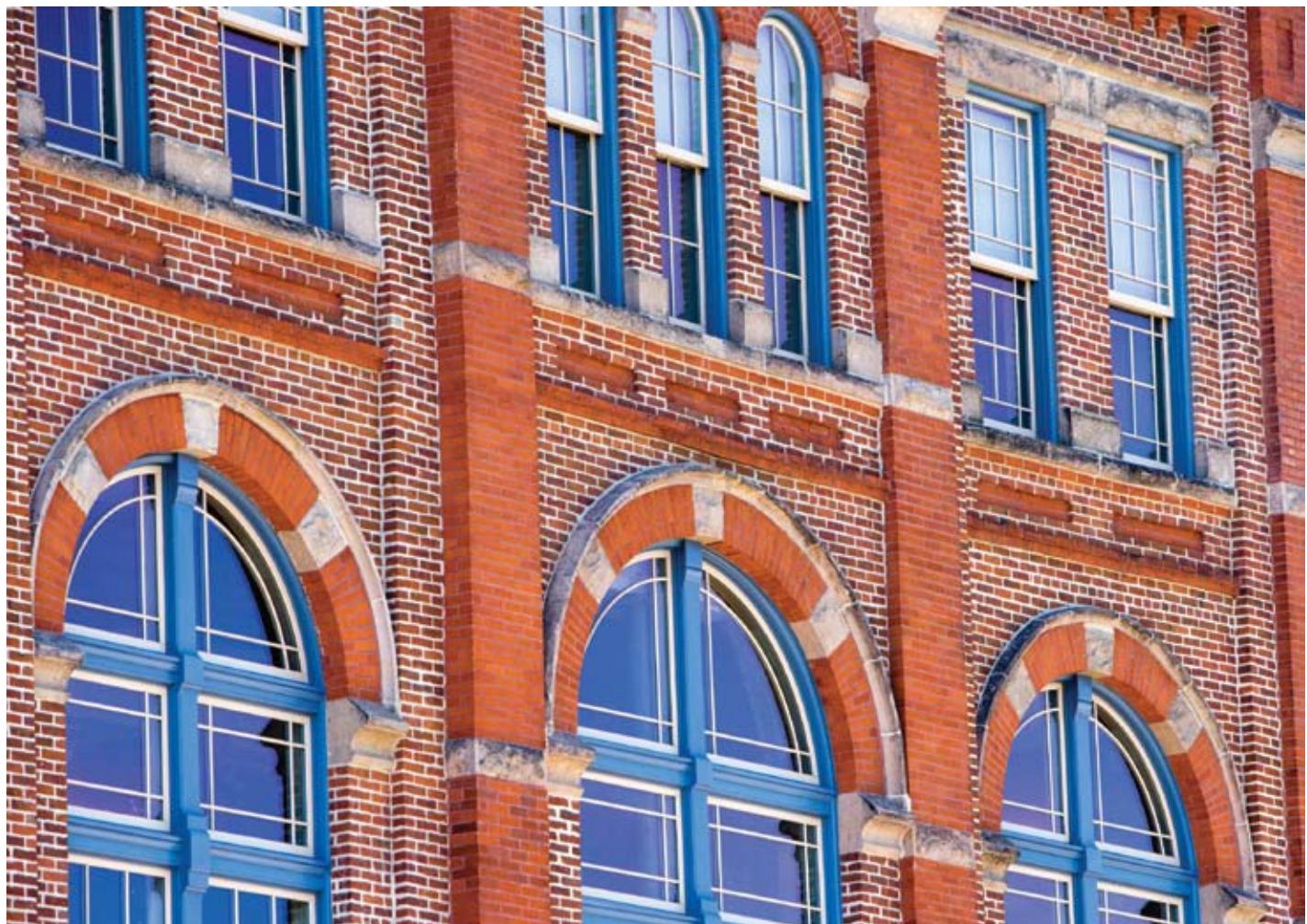
MAGNUM DOUBLE HUNG STANDARD FEATURES

- 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 mulled units with jambs wider than 5-9/16"
- 7/8" LoE²-270 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 jambliners 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):

- LoE²-240*
- LoE³-366*
- 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 jambliners
- 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.

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 mulled units
- 9/16" LoE²-270 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



STORM GUARDS

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):

- LoE²-240*
- LoE³-366*
- 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

NOTES:

All measurements are nominal.

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

- 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 jambliners
- 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



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 mulled units
- 7/8" LoE²-270 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):

- LoE²-240*
- LoE³-366*
- 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 HUNGS

STERLING & TRADITIONAL DOUBLE HUNGS

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'-0 7/16"	4'-8 7/16"	5'-0 7/16"	4'-4 7/16"	4'-4 7/16"	4'-0 7/16"	3'-4 7/16"	3'-4 7/16"	3'-0 7/16"
	5'-1"	4'-9"	5'-1"	4'-5"	4'-6"	4'-2"	3'-5"	3'-1"	3'-1"
	5'-2"	4'-6"	5'-2"	4'-6"	4'-6"	3'-10"	3'-2"	2'-10"	2'-10"
	28" 26"	26" 26"	26" 26"	24" 24"	22" 22"	20" 20"	16" 16"	14" 14"	14" 14"
UDH1614	UDH2014	UDH2414	UDH2614	UDH2814	UDH3014	UDH3214	UDH3614	UDH4014	
UDH1616	UDH2016	UDH2416	UDH2616	UDH2816	UDH3016	UDH3216	UDH3616	UDH4016	
UDH1620	UDH2020	UDH2420	UDH2620	UDH2820	UDH3020	UDH3220	UDH3620	UDH4020	
UDH1622	UDH2022	UDH2422	UDH2622	UDH2822	UDH3022	UDH3222	UDH3622	UDH4022	
UDH1624	UDH2024	UDH2424	UDH2624	UDH2824	UDH3024	UDH3224	UDH3624	UDH4024	
UDH1626	UDH2026	UDH2426	UDH2626	UDH2826	UDH3026**	UDH3226*	UDH3626*	UDH4026*	
UDH1628	UDH2028	UDH2428	UDH2628	UDH2828**	UDH3028*	UDH3228*	UDH3628*	UDH4028*	
UDH1630	UDH2030	UDH2430	UDH2630**	UDH2830*	UDH3030*	UDH3230*	UDH3630*	UDH4030*	
UDH1632	UDH2032	UDH2432**	UDH2632*	UDH2832*	UDH3032*	UDH3232*	UDH3632*	UDH4032*	
UDH1634	UDH2034	UDH2434*	UDH2634*	UDH2834*	UDH3034*	UDH3234*	UDH3634*	UDH4034*	
UDH1636	UDH2036	UDH2436*	UDH2636*	UDH2836*	UDH3036*	UDH3236*	UDH3636*	UDH4036*	

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.

F.S. = Frame Size

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

ULTRA SERIES | DOUBLE HUNGS

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:

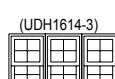
To order cottage-style double hung units, add "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: UDH1624/36-3). Specify Traditional or Sterling sash. For pocket double hungs, talk to your local Kolbe dealer.

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 HUNGS

DOUBLE HUNGS | 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"
1'-0"	6"	10"	14"	18"	22"	26"	30"
UDHT1606	UDHT2006	UDHT2406	UDHT2806	UDHT3206	UDHT3606	UDHT4006	
1'-4"	10"	14"	18"	22"	26"	30"	34"
UDHT1610	UDHT2010	UDHT2410	UDHT2810	UDHT3210	UDHT3610	UDHT4010	
1'-6"	12"	16"	20"	24"	28"	32"	36"
UDHT1612	UDHT2012	UDHT2412	UDHT2812	UDHT3212	UDHT3612	UDHT4012	
1'-8"	14"	18"	22"	26"	30"	34"	38"
UDHT1614	UDHT2014	UDHT2414	UDHT2814	UDHT3214	UDHT3614	UDHT4014	
1'-0"	18"	22"	26"	30"	34"	38"	42"
UDHT1618	UDHT2018	UDHT2418	UDHT2818	UDHT3218	UDHT3618	UDHT4018	
2'-0"	22"	26"	30"	34"	38"	42"	46"
UDHT1624	UDHT2024	UDHT2424	UDHT2824	UDHT3224	UDHT3624	UDHT4024	
2'-4"	26"	30"	34"	38"	42"	46"	50"
UDHT1624	UDHT2024	UDHT2424	UDHT2824	UDHT3224	UDHT3624	UDHT4024	

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.

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

ULTRA SERIES | DOUBLE HUNGS

DOUBLE HUNGS | 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'-5 1/2"	4'-9"	4'-5"	4'-1"	
	45 1/4"	45 1/4"	45 1/4"	49 1/4"	49 1/4"	41 1/4"	
UDHS40310							
UDHS44310							
UDHS50310							
UDHS58310							
UDHS64310							
UDHS70310							
UDHS84310							
UDHS4042							
UDHS4442							
UDHS5042							
UDHS5842							
UDHS6442							
UDHS7042							
UDHS8442							
UDHS4046							
UDHS4446							
UDHS5046							
UDHS5846							
UDHS6446							
UDHS7046							
UDHS8446							
UDHS40410							
UDHS44410							
UDHS50410							
UDHS58410							
UDHS64410							
UDHS70410							
UDHS84410							
UDHS4052							
UDHS4452							
UDHS5052							
UDHS5852							
UDHS6452							
UDHS7052							
UDHS8452							
UDHS4056							
UDHS4456							
UDHS5056							
UDHS5856							
UDHS6456							
UDHS7056							
UDHS8456							
UDHS40510							
UDHS44510							
UDHS50510							
UDHS58510							
UDHS64510							
UDHS70510							
UDHS84510							
UDHS4062							
UDHS4462							
UDHS5062							
UDHS5862							
UDHS6462							
UDHS7062							
UDHS8462							
UDHS4066							
UDHS4466							
UDHS5066							
UDHS5866							
UDHS6466							
UDHS7066							
UDHS8466							

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 HUNGS

STERLING & TRADITIONAL DOUBLE HUNGS

Active Half-Circle Tops

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.

determine divided lite.

F.S. = Frame Size

ULTRA SERIES | DOUBLE HUNGS

STERLING DOUBLE HUNGS

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"	3'-4 7/16"	3'-5 1/2"	3'-1 1/2"	3'-2 1/2"	3'-3 1/2"	3'-4 1/2"	3'-5 1/2"	3'-7 1/2"
	UDH1614-SEG	UDH2014-SEG	UDH2414-SEG	UDH2614-SEG	UDH2814-SEG	UDH3014-SEG	UDH3214-SEG	UDH3614-SEG	UDH4014-SEG
	16"	16"	16"	16"	16"	16"	16"	16"	16"
	3'-0 7/16"	3'-4 7/16"	3'-5 1/2"	3'-1 1/2"	3'-2 1/2"	3'-3 1/2"	3'-4 1/2"	3'-5 1/2"	3'-7 1/2"
	UDH1616-SEG	UDH2016-SEG	UDH2416-SEG	UDH2616-SEG	UDH2816-SEG	UDH3016-SEG	UDH3216-SEG	UDH3616-SEG	UDH4016-SEG
	16"	16"	16"	16"	16"	16"	16"	16"	16"
	4'-0 7/16"	4'-4 7/16"	4'-5"	4'-1"	4'-2"	4'-3"	4'-4"	4'-5"	4'-6"
	UDH1620-SEG	UDH2020-SEG	UDH2420-SEG	UDH2620-SEG	UDH2820-SEG	UDH3020-SEG	UDH3220-SEG	UDH3620-SEG	UDH4020-SEG
	20"	20"	20"	20"	20"	20"	20"	20"	20"
	4'-4 7/16"	4'-8 7/16"	4'-9"	4'-2"	4'-3"	4'-4"	4'-5"	4'-6"	4'-7"
	UDH1622-SEG	UDH2022-SEG	UDH2422-SEG	UDH2622-SEG	UDH2822-SEG	UDH3022-SEG	UDH3222-SEG	UDH3622-SEG	UDH4022-SEG
	22"	24"	24"	24"	24"	24"	24"	24"	24"
	4'-8 7/16"	4'-9 7/16"	4'-10"	4'-11"	4'-12"	4'-13"	4'-14"	4'-15"	4'-16"
	UDH1626-SEG	UDH2026-SEG	UDH2426-SEG	UDH2626-SEG	UDH2826-SEG	UDH3026-SEG	UDH3226-SEG	UDH3626-SEG	UDH4026-SEG
	26"	26"	26"	26"	26"	26"	26"	26"	26"
	5'-0 7/16"	5'-1"	5'-2"	5'-3"	5'-4"	5'-5"	5'-6"	5'-7"	5'-8"
	UDH1628-SEG	UDH2028-SEG	UDH2428-SEG	UDH2628-SEG	UDH2828-SEG	UDH3028-SEG	UDH3228-SEG	UDH3628-SEG	UDH4028-SEG
	28"	28"	28"	28"	28"	28"	28"	28"	28"
	5'-4 7/16"	5'-8 7/16"	5'-9"	5'-10"	5'-11"	5'-12"	5'-13"	5'-14"	5'-15"
	UDH1630-SEG	UDH2030-SEG	UDH2430-SEG	UDH2630-SEG	UDH2830-SEG	UDH3030-SEG	UDH3230-SEG	UDH3630-SEG	UDH4030-SEG
	30"	30"	30"	30"	30"	30"	30"	30"	30"
	6'-0 7/16"	6'-4 7/16"	6'-5"	6'-6"	6'-7"	6'-8"	6'-9"	6'-10"	6'-11"
	UDH1632-SEG	UDH2032-SEG	UDH2432-SEG	UDH2632-SEG	UDH2832-SEG	UDH3032-SEG	UDH3232-SEG	UDH3632-SEG	UDH4032-SEG
	32"	32"	32"	32"	32"	32"	32"	32"	32"
	6'-4 7/16"	6'-8 7/16"	6'-9"	6'-10"	6'-11"	6'-12"	6'-13"	6'-14"	6'-15"
	UDH1634-SEG	UDH2034-SEG	UDH2434-SEG	UDH2634-SEG	UDH2834-SEG	UDH3034-SEG	UDH3234-SEG	UDH3634-SEG	UDH4034-SEG
	34"	34"	34"	34"	34"	34"	34"	34"	34"
	6'-8 7/16"	6'-9"	6'-10"	6'-11"	6'-12"	6'-13"	6'-14"	6'-15"	6'-16"
	UDH1636-SEG	UDH2036-SEG	UDH2436-SEG	UDH2636-SEG	UDH2836-SEG	UDH3036-SEG	UDH3236-SEG	UDH3636-SEG	UDH4036-SEG
	36"	36"	36"	36"	36"	36"	36"	36"	36"

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 HUNGS

STERLING DOUBLE HUNGS

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"	5'-1"	5'-10"	6'-6"	7'-2"	8'-6"
	4'-1"	4'-5"	5'-2"	5'-10"	6'-6"	7'-0"	8'-4"
	41 1/4"	45 1/4"	49 1/4"	53 1/4"	60"	67 1/4"	74 1/4"
	4'-4 7/16"	4'-8 7/16"	4'-9"	4'-6"	4'-10"	5'-1"	5'-10"
	4'-5"	4'-9"	4'-6"	4'-2"	4'-10"	5'-1"	5'-10"
	45 1/4"	49 1/4"	49 1/4"	53 1/4"	60"	67 1/4"	74 1/4"
	4'-8 7/16"	5'-0 7/16"	5'-5"	5'-1"	5'-10"	6'-6"	6'-10"
	5'-1"	5'-10"	5'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	53 1/4"	57 1/4"	57 1/4"	53 1/4"	60"	67 1/4"	74 1/4"
	5'-0 7/16"	5'-4 7/16"	5'-5"	5'-1"	5'-10"	6'-6"	6'-10"
	5'-1"	5'-6"	5'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	53 1/4"	57 1/4"	57 1/4"	53 1/4"	60"	67 1/4"	74 1/4"
	5'-4 7/16"	5'-8 7/16"	5'-9"	5'-6"	5'-10"	6'-6"	6'-10"
	5'-5"	5'-10"	5'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	57 1/4"	61 1/4"	61 1/4"	57 1/4"	60"	67 1/4"	74 1/4"
	5'-8 7/16"	6'-0 7/16"	6'-1"	5'-6"	5'-10"	6'-6"	6'-10"
	6'-1"	6'-10"	6'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	65 1/4"	69 1/4"	69 1/4"	65 1/4"	60"	67 1/4"	74 1/4"
	6'-0 7/16"	6'-4 7/16"	6'-5"	6'-1"	6'-10"	6'-6"	6'-10"
	6'-1"	6'-10"	6'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	65 1/4"	69 1/4"	69 1/4"	65 1/4"	60"	67 1/4"	74 1/4"
	6'-4 7/16"	6'-8 7/16"	6'-9"	6'-6"	6'-10"	6'-6"	6'-10"
	6'-5"	6'-10"	6'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	69 1/4"	73 1/4"	73 1/4"	69 1/4"	60"	67 1/4"	74 1/4"
	6'-8 7/16"	6'-10"	6'-6"	6'-10"	6'-6"	6'-10"	6'-14"
	6'-9"	6'-10"	6'-2"	5'-10"	6'-6"	6'-10"	6'-14"
	73 1/4"	73 1/4"	73 1/4"	69 1/4"	60"	67 1/4"	74 1/4"

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 HUNGS

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 HUNGS

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 HUNGS

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 HUNGS

DOUBLE HUNGS | PICTURE UNITS

16" flankers

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

DOUBLE HUNGS | PICTURE UNITS

20" flankers

F.S.	8'-8 1/2"	9'-4 1/2"	10'-0 1/2"	10'-8 1/2"
R.O.	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'-8 7/16"	4'-2"	4'-2"
	4'-5"	4'-9"	4'-6"	4'-6"
	28" 57 1/4"	24" 49 1/4"	22" 45 1/4"	22" 45 1/4"
	UDH20224442	UDH20225042	UDH20225842	UDH20226442
	UDH20244446	UDH20245046	UDH20245846	UDH20246446
	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.

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

ULTRA SERIES | DOUBLE HUNGS

DOUBLE HUNGS | 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"				
UDH24224442	UDH24225042	UDH24225842	UDH24226442	
4'-8 7/16"				
UDH24244446	UDH24245046	UDH24245846	UDH24246446	
5'-5 7/16"				
UDH24284452	UDH24285052	UDH24285852	UDH24286452	

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.

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

ULTRA SERIES | DOUBLE HUNGS

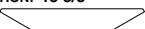
DOUBLE HUNGS | 30° BAY WINDOWS

16" flankers

20" flankers

UNIT PROJECTION: 13 3/8"	
U.D.	8'-0 5/8"
R.O.	7'-11"
S.O.	1'-8" 4'-4" 1'-8"
G.S.*	16" 48 1/2" 16"
	4'-5 3/16" 4'-2"
	4'-9 3/16" 4'-6"
	5'-5 11/16" 5'-2"
	28" 57 1/4"

UNIT PROJECTION: 13 3/8"	
U.D.	8'-8 5/8"
R.O.	8'-7"
S.O.	1'-8" 5'-0" 1'-8"
G.S.*	16" 56 1/2" 16"
	22" 45 1/4"
	20" 48 1/2" 20"

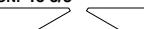


UDH30-16224442



UDH30-16225042

UNIT PROJECTION: 15 3/8"	
U.D.	8'-7 9/16"
R.O.	8'-5 15/16"
S.O.	2'-0" 4'-4" 2'-0"
G.S.*	16" 56 1/2" 20"
	9'-1 15/16" 2'-0"
	20" 56 1/2" 20"



UDH30-20224442



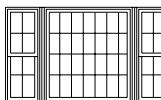
UDH30-20225042



UDH30-20244446



UDH30-20245046



UDH30-20285052

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.

E.S. = Frame Size

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

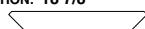
DOUBLE HUNGS | 45° BAY WINDOWS

16" flankers

20" flankers

UNIT PROJECTION: 18 7/8"	
U.D.	7'-8 1/4"
R.O.	7'-4 7/8"
S.O.	1'-8" 4'-4" 1'-8"
G.S.*	16" 48 1/2" 16"
	4'-5 3/16" 4'-2"
	4'-9 3/16" 4'-6"
	5'-5 11/16" 5'-2"
	28" 57 1/4"

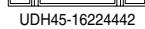
UNIT PROJECTION: 18 7/8"	
U.D.	8'-4 1/4"
R.O.	8'-0 7/8"
S.O.	1'-8" 5'-0" 1'-8"
G.S.*	16" 56 1/2" 16"
	22" 45 1/4"
	20" 48 1/2" 20"



UDH45-16224442



UDH45-16225042

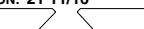


UDH45-16244446



UDH45-16245046

UNIT PROJECTION: 21 11/16"	
U.D.	8'-1 7/8"
R.O.	7'-10 1/2"
S.O.	2'-0" 4'-4" 2'-0"
G.S.*	16" 56 1/2" 20"
	8'-9 7/8" 2'-0"
	20" 56 1/2" 20"



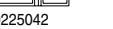
UDH45-20224442



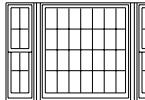
UDH45-20225042



UDH45-20244446



UDH45-20245046



UDH45-20285052

ULTRA SERIES | DOUBLE HUNGS

MAGNUM DOUBLE HUNGS

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"

DIMENSION CALCULATIONS

WIDTH	HEIGHT
-2 1/8"	-3 3/16"
-6 7/16"	-6 7/8" 2
-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 HUNGS

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)

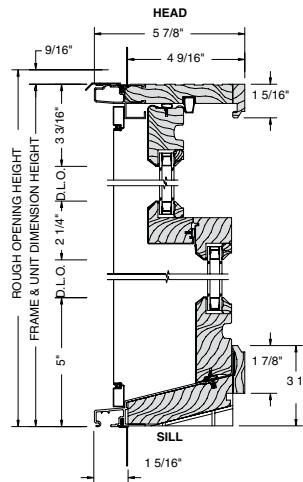
Emergency Escape & Rescue Clearance = 37" wide x 24" high

ULTRA SERIES | DOUBLE HUNGS

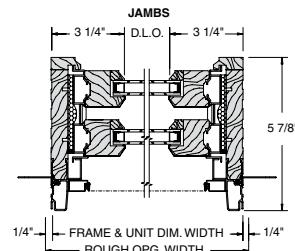
TRADITIONAL DOUBLE HUNG CROSS SECTION DRAWINGS

Standard Traditional Double Hung

Vertical Section

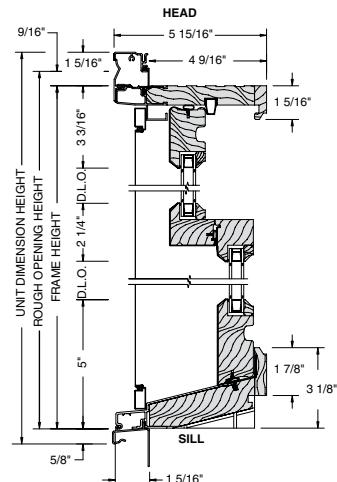


Horizontal Section

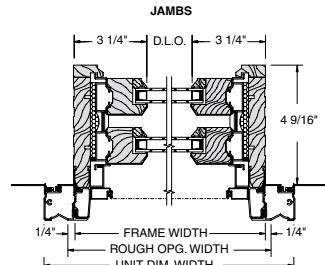


Traditional Double Hung with 1-15/16" Brickmould

Vertical Section



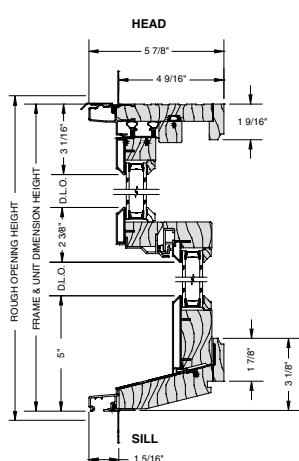
Horizontal Section



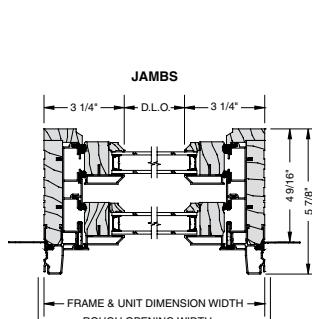
STERLING DOUBLE HUNG CROSS SECTION DRAWINGS

Standard Sterling Double Hung

Vertical Section

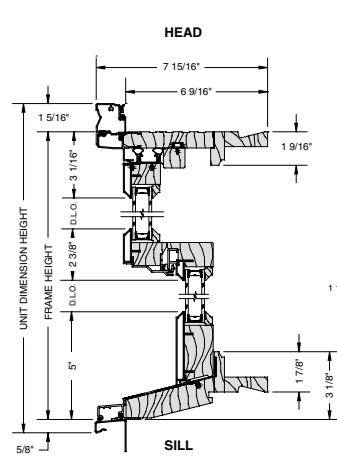


Horizontal Section

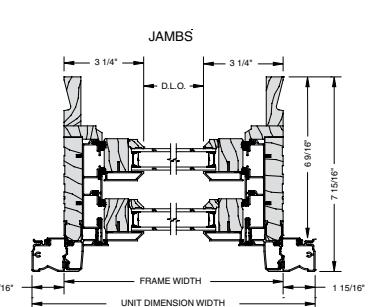


Sterling Double Hung with 1-15/16" Brickmould & 6-9/16" Jamb

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.

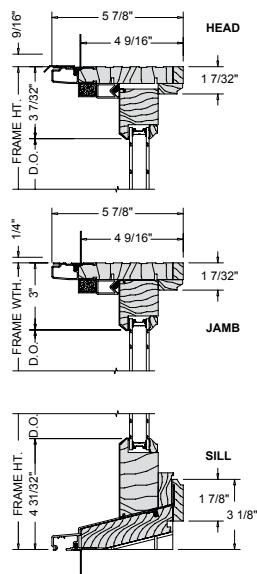
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

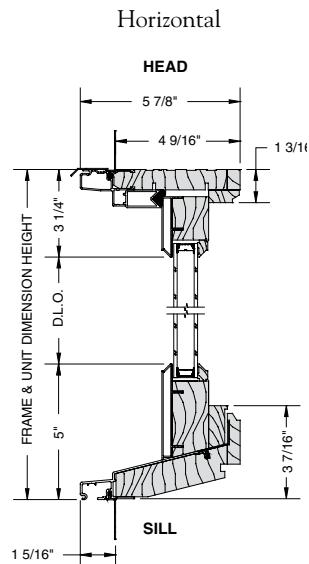
ULTRA SERIES | DOUBLE HUNGS

DOUBLE HUNG STUDIO UNIT

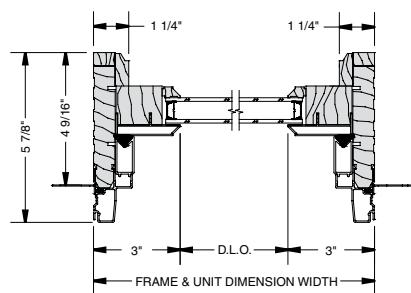
Traditional



Sterling

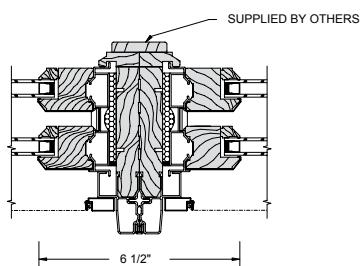


Horizontal

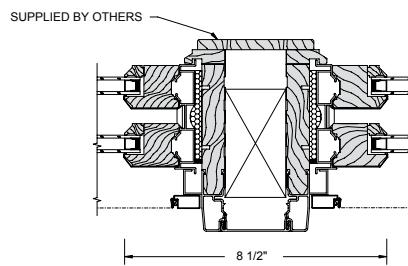


Vertical

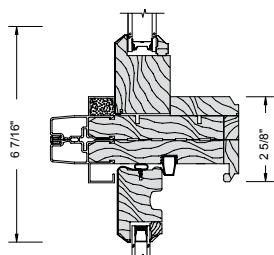
STANDARD NARROW MULLION



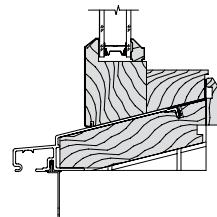
2" SPREAD MULLION



RECTANGULAR TRANSOM STACKED
OVER TRADITIONAL DOUBLE HUNG



DOUBLE HUNG TRANSOM
WITH OPTIONAL SILL

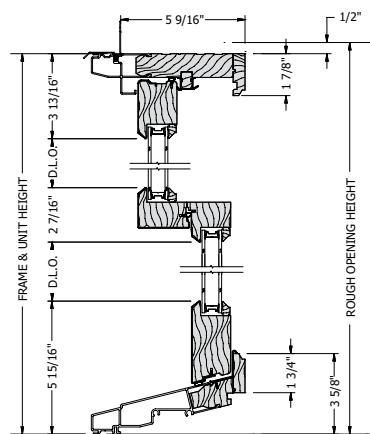


NOTE: Drawings are not to scale.

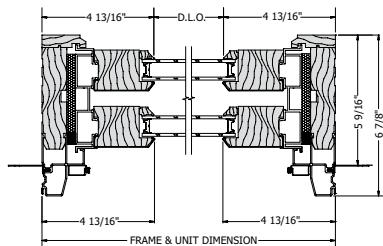
ULTRA SERIES | DOUBLE HUNGS

MAGNUM DOUBLE HUNG CROSS SECTION DRAWINGS

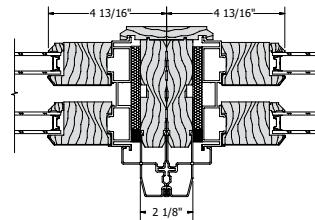
Vertical



Horizontal



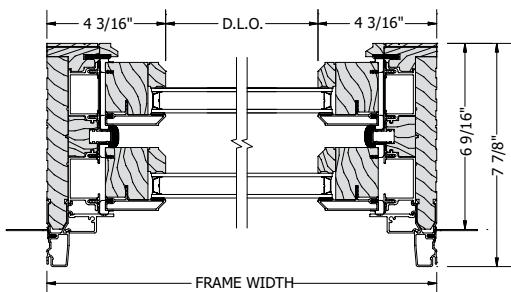
STANDARD MULLION



MAJESTA DOUBLE HUNG CROSS SECTION DRAWINGS

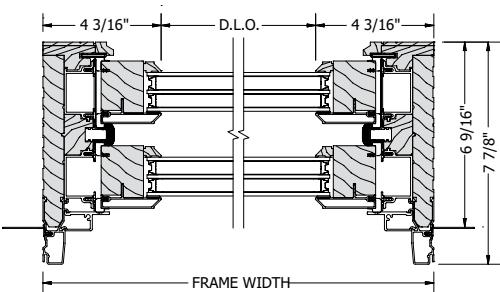
Double Pane

Horizontal

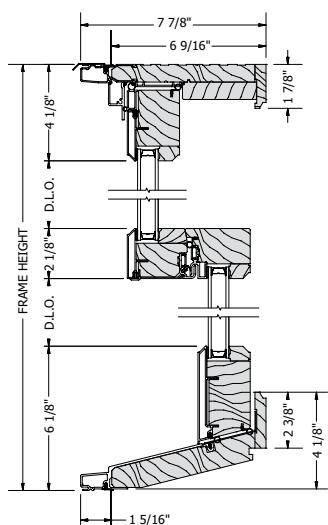


Triple Pane

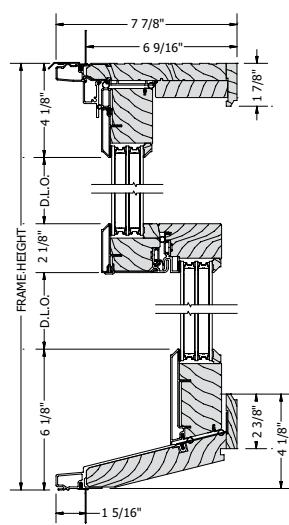
Horizontal



Vertical



Vertical



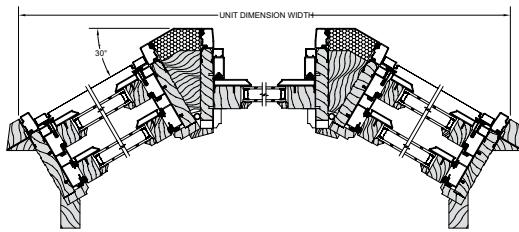
NOTE: Drawings are not to scale.

ULTRA SERIES | DOUBLE HUNGS

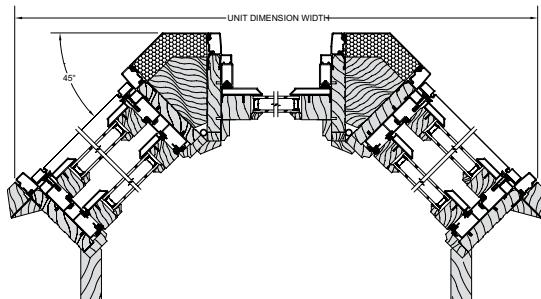
DOUBLE HUNG BAY CROSS SECTION DRAWINGS

STERLING

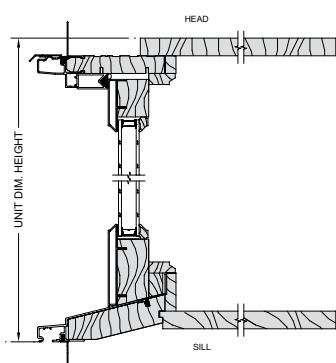
30° Bay Horizontal Section



45° Bay Horizontal Section

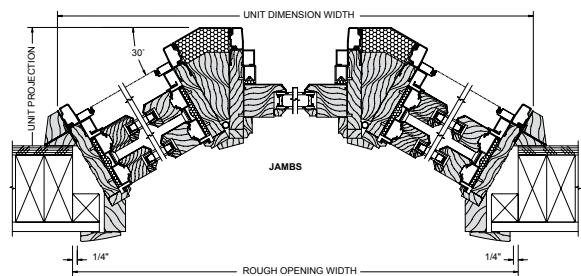


30° & 45° Bay Vertical Section

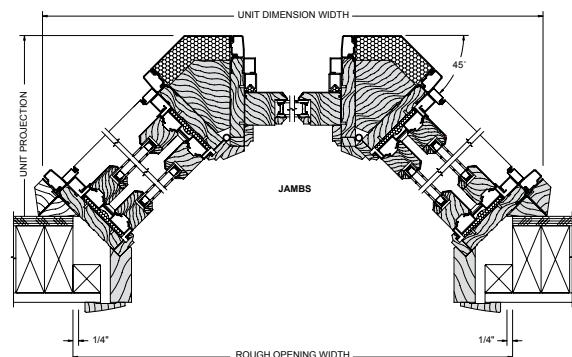


TRADITIONAL

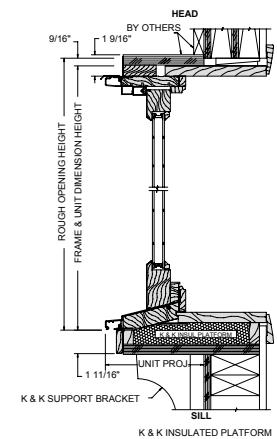
30° Bay Horizontal Section



45° Bay Horizontal Section



30° & 45° Bay Vertical Section

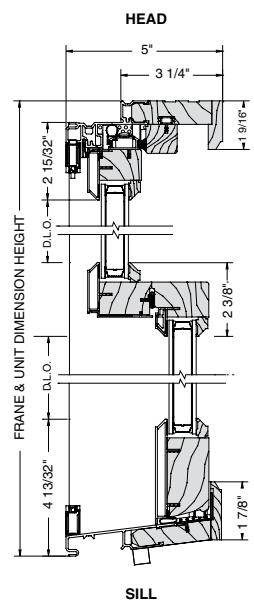


NOTE: Drawings are not to scale.

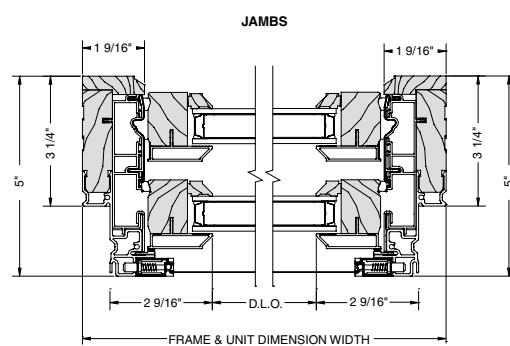
ULTRA SERIES | DOUBLE HUNGS

POCKET DOUBLE HUNG CROSS SECTION DRAWINGS

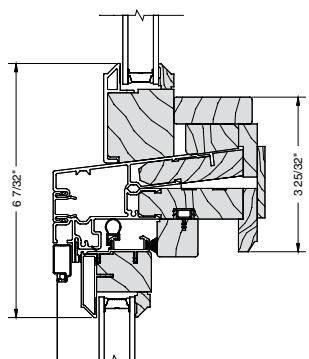
Vertical Section



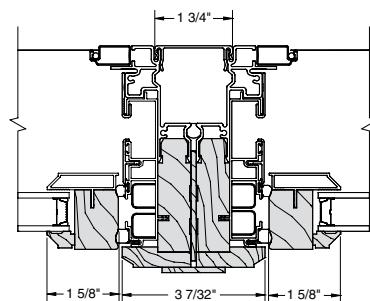
Horizontal Section



RECTANGULAR TRANSOM STACKED
OVER POCKET DOUBLE HUNG



ACTIVE UNIT TO ACTIVE UNIT MULLION

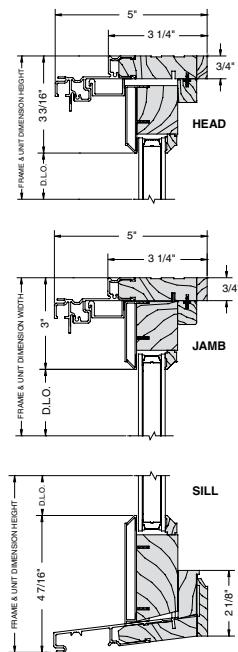


NOTE: Drawings are not to scale.

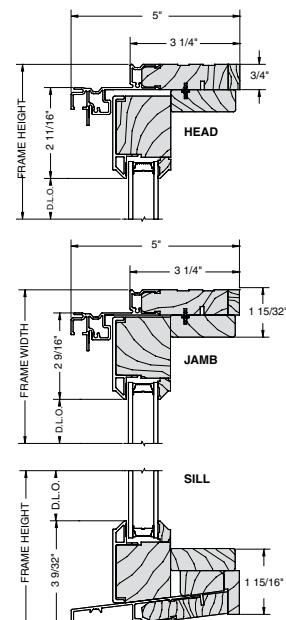
ULTRA SERIES | DOUBLE HUNGS

POCKET DOUBLE HUNG CROSS SECTION DRAWINGS

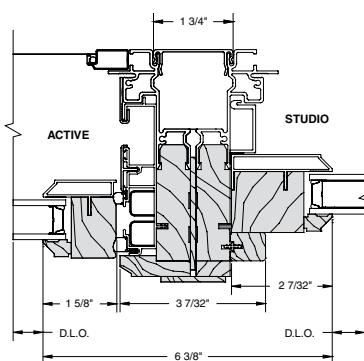
Studio Unit



Transom Unit



STUDIO UNIT TO ACTIVE UNIT MULLION



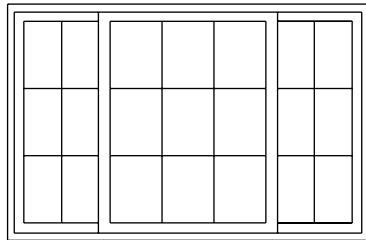
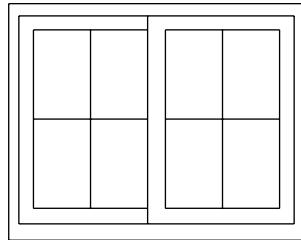
NOTE: Drawings are not to scale.



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" LoE²-270 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



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.

SLIDER OPTIONAL FEATURES

GLASS (pgs. 6-7):

- LoE²-240*
- LoE³-366*
- 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 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

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 | SLIDERS

TRADITIONAL DOUBLE SLIDERS

FS.	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"
3'-2 1/2"	USL1616	USL2016	USL2416	USL2816	USL3216
3'-3"	USL1620	USL2020	USL2420	USL2820	USL3220
3'-4"	USL1624	USL2024	USL2424	USL2824	USL3224*
3'-5"	USL1628	USL2028	USL2428	USL2828*	USL3228*
3'-6"	USL1632	USL2032	USL2432	USL2832*	USL3232*
3'-7 1/8"	USL1636	USL2036	USL2436*	USL2836*	USL3236*
3'-8"	USL1640	USL2040	USL2440*	USL2840*	USL3240*
3'-9"	USL1644	USL2044	USL2444*	USL2844*	USL3244*
3'-10 1/2"	USL1648	USL2048	USL2448*	USL2848*	USL3248*
4'-1"					
4'-2 1/2"					
4'-3 3/8"					
4'-4"					
4'-5"					
4'-6 1/2"					
4'-7 3/8"					
4'-8"					

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.

FS. = Frame Size • R.O. = Rough Opening

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

DIMENSION CALCULATIONS

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

FS. = 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 1/2" / 16"	3'-3 3/8" / 32"	3'-3 3/8" / 32"	3'-3 3/8" / 32"	3'-3 3/8" / 32"
UTSL163232	UTSL204032	UTSL204832	UTSL244832*	
3'-10 1/2" / 16"	3'-11 3/8" / 40"	3'-11 3/8" / 40"	3'-11 3/8" / 40"	3'-11 3/8" / 40"
UTSL163240	UTSL204040*	UTSL204840*	UTSL244840*	
4'-2 1/2" / 16"	4'-3 3/8" / 44"	4'-3 3/8" / 44"	4'-3 3/8" / 44"	4'-3 3/8" / 44"
UTSL163244	UTSL204044*	UTSL204844*	UTSL244844*	
4'-6 1/2" / 16"	4'-7 3/8" / 48"	4'-7 3/8" / 48"	4'-7 3/8" / 48"	4'-7 3/8" / 48"
UTSL163248	UTSL204048*	UTSL204848*	UTSL244848*	

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"
2'-11 7/16" 1'-11 7/16"	3'-0"	2'-9 5/8"	3'-9 5/8"	4'-10"	5'-10"	7'-10"
2'-0"	1'-9 5/8"	16 5/8"	28 5/8"	32 1/2" 32 1/2"	32 1/2" 32 1/2"	20" 47 3/4" 20"
UARSL2020	UARSL3020	UARSL3030	UARSL5030	UARSL6030*		
3'-11 7/16" 4'-11 7/16"	4'-0"	4'-9 5/8"	40 5/8"	40 5/8"	40 5/8"	UARSL8040*
5'-0"	3'-9 5/8"	40 5/8"	40 5/8"	40 5/8"	40 5/8"	UARSL8040*
4'-9 5/8"	40 5/8"	52 5/8"	52 5/8"	52 5/8"	52 5/8"	UARSL8050*
52 5/8"	52 5/8"	52 5/8"	52 5/8"	52 5/8"	52 5/8"	UARSL8050*
UARSL3040	UARSL4040	UARSL5040*	UARSL6040*	UARSL8040*		
UARSL4050	UARSL5050*	UARSL6050*	UARSL8050*			

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.

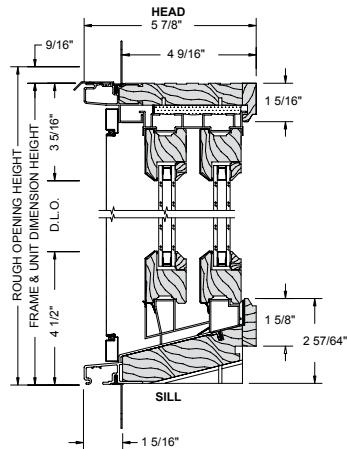
* Units meet most national emergency escape and rescue requirements.

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

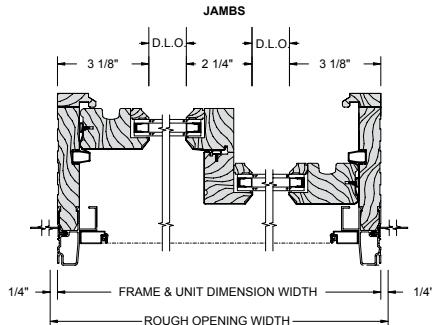
TRADITIONAL SLIDER CROSS SECTION DRAWINGS

Standard Traditional Double Slider

Vertical Section

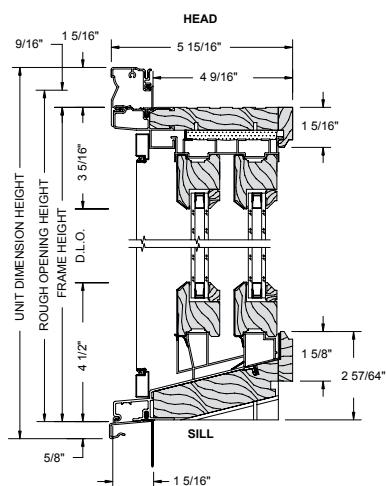


Horizontal Section

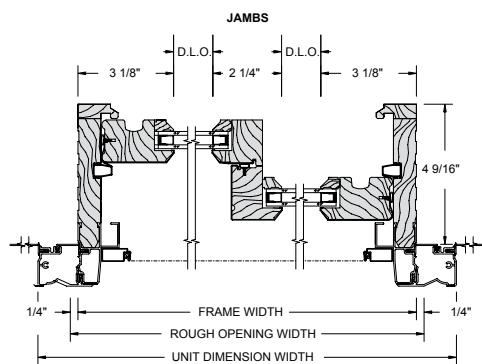


Traditional Double Slider with 1-15/16" Brickmould

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.

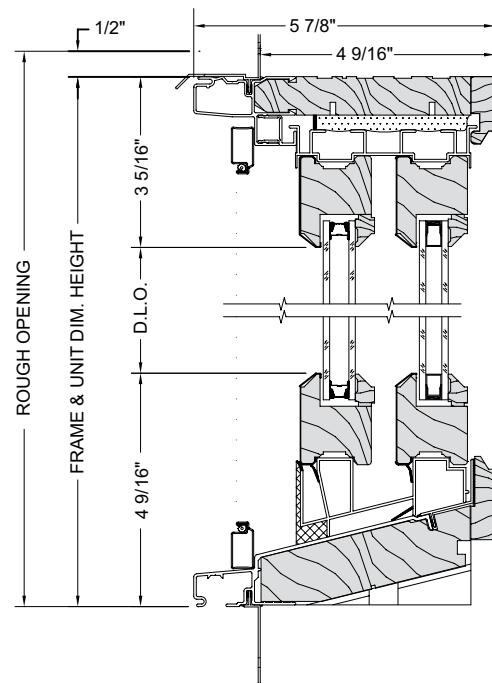
Some units are shown with optional drip cap or nailing fin.

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

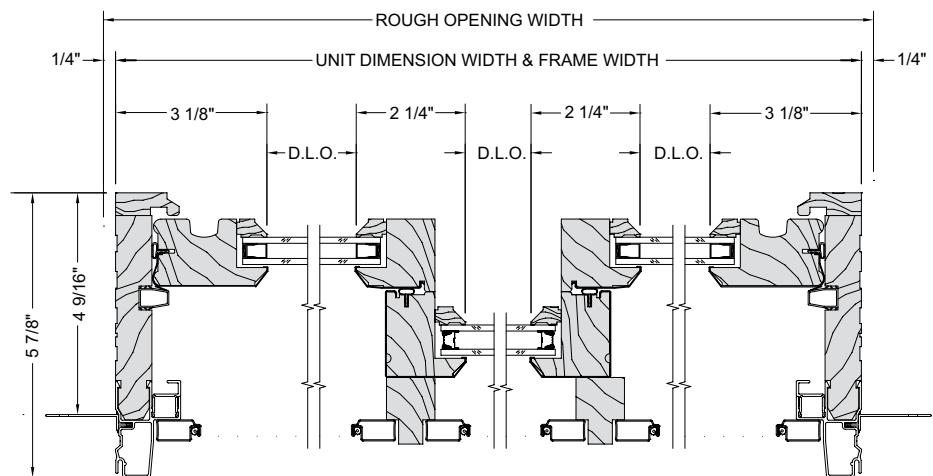
Additional and the most current drawings are available at www.kolbe-kolbe.com.

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

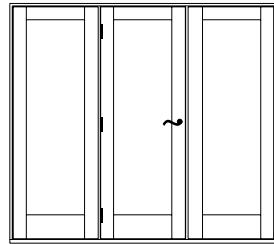
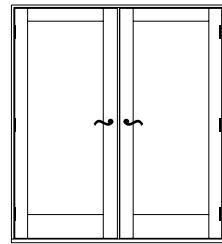
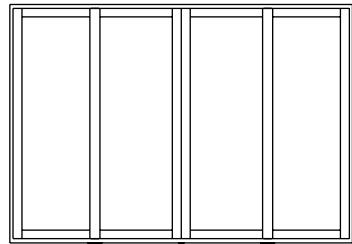
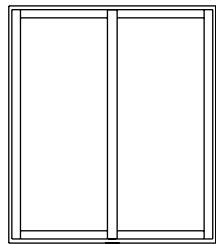
GARDEN-AIRE SLIDING PATIO DOORS

INSWING PATIO DOORS

PATIO DOOR TRANSOMS

FOLDING DOORS

TERRASPA[®] 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 mulled units
- Tempered, 7/8" LoE²-270 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[®] 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)

- LoE²-240*
- LoE³-366*
- ThermoPlus 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 mulled units
- Tempered, 7/8" LoE²-270 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 WaterguardTM 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)

- LoE²-240*
- LoE³-366*
- 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



Gold-painted Brass Antique Brass



Stainless Steel Satin Nickel Antique Nickel



Oil-rubbed* Rustic Umber Matte Black

Non-Adjustable Hinges



Bright Brass Antique Brass Satin Nickel Antique Nickel



Stainless Steel Oil-rubbed* Matte Black



Bright Brass Antique Brass Stainless Steel Oil-rubbed*



Bright Brass Oil-rubbed*

*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" LoE²-270 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	Verona (Matte Black shown; also available in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Oil-Rubbed* or Rustic Umber)
Toronto								
München								

*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	Alternate Folding Panel Handle
Uno					

FOLDING DOOR OPTIONAL FEATURES

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

- LoE²-240*
- LoE³-366*
- 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 | TERRASPA[®] LIFT & SLIDE DOORS

TERRASPA[®] 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" LoE²-270 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.

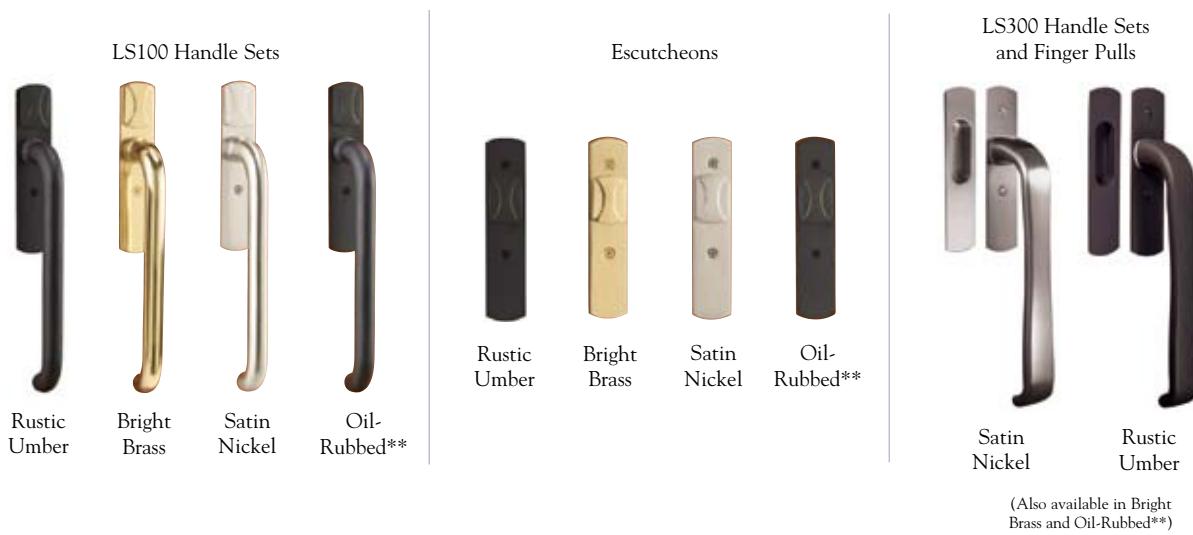
** Argon gas may not be included with units to be installed in or shipped through high altitude areas.

***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.



LIFT & SLIDE OPTIONAL FEATURES

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

- LoE²-240*
- LoE³-366*
- 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"									
75"									
GAU2968	GAU5068	GAU7968	GAU3368	GAU3668	GAU6068	GAU6668	GAU9368	GAU10068	
8'-2 7/16"									
8'-2 15/16"									
91"									
GAU2980	GAU5080	GAU7980	GAU3380	GAU3680	GAU6080	GAU6680	GAU9380	GAU10080	

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"			
75"			
GAU4368	GAU8068	GAU12368	
8'-2 7/16"			
8'-2 15/16"			
91"			
GAU4380	GAU8080	GAU12380	

DIMENSION CALCULATIONS

F.S. to Panel O.S.M.

WIDTH
+1/2"÷2

HEIGHT
-2 3/4"

Panel O.S.M. to G.S.

-5"

-4 11/16"

G.S. to D.L.O.

-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"			
75"			
GAU4-10068	GAU4-12068	GAU4-16068	
8'-2 7/16"			
8'-2 15/16"			
91"			
GAU4-10080	GAU4-12080	GAU4-16080	

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"								
4 7/8"	GAUT2910	GAUT3310	GAUT3610	GAUT2914	GAUT3314	GAUT3614	GAUT4314	GAUT5014
GAUT6014	GAUT6614	GAUT8014	GAUT2916	GAUT3316	GAUT3616	GAUT4316	GAUT5016	GAUT6016
GAUT6616	GAUT8016	GAUT8018	GAUT2918	GAUT3318	GAUT3618	GAUT4318	GAUT5018	GAUT6018
GAUT6618	GAUT8020	GAUT8026	GAUT2920	GAUT3320	GAUT3620	GAUT4320	GAUT5020	GAUT6020
GAUT6626	GAUT8026		GAUT2926	GAUT3326	GAUT3626	GAUT4326	GAUT5026	GAUT6026

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

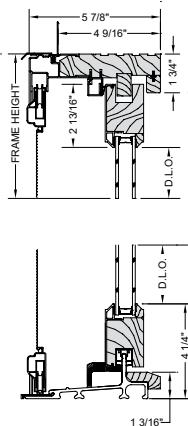
ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

GARDEN-AIRE CROSS SECTION DRAWINGS

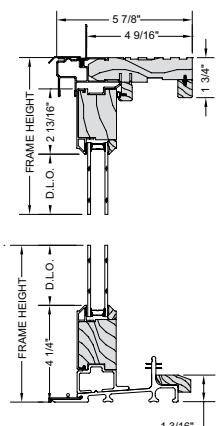
Standard Garden-Aire

Vertical Section

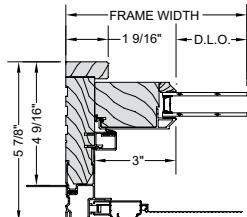
Operating Panel



Stationary Panel

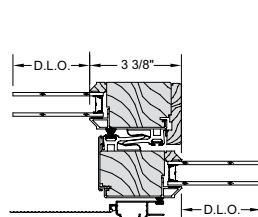


Operating Panel

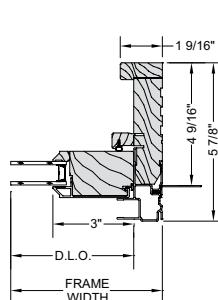


Horizontal Section

Meeting Stiles

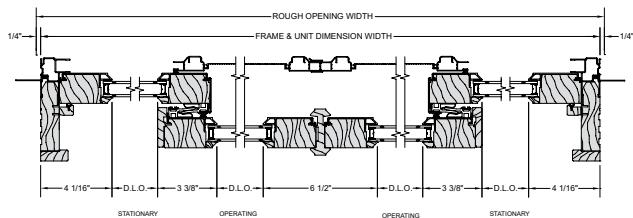


Stationary Panel



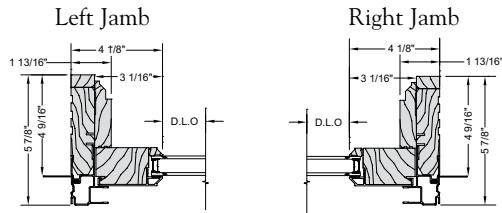
4-WIDE GARDEN-AIRE

Standard Horizontal Section

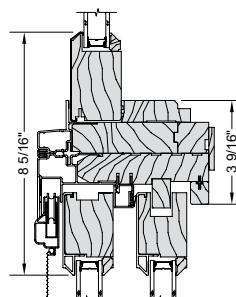


GARDEN-AIRE WITH SIDELITE

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.

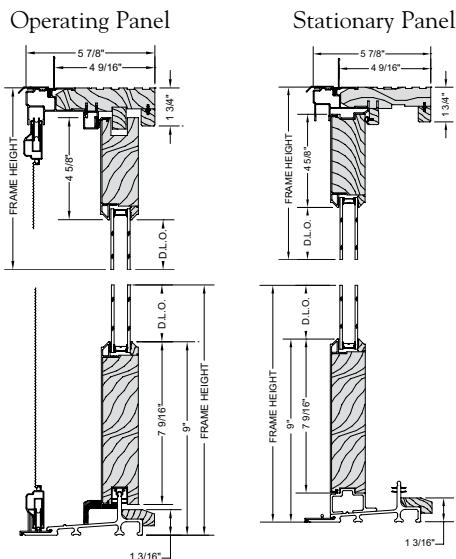
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

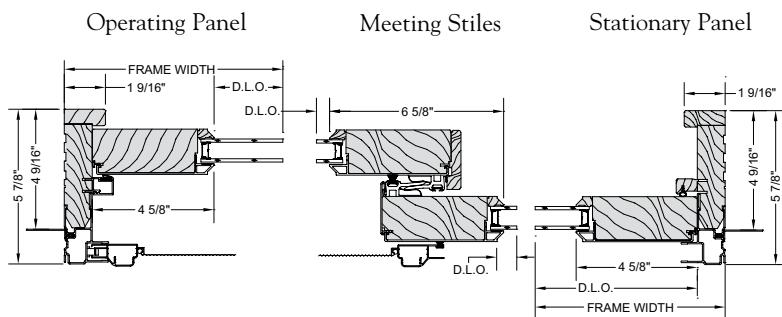
ULTRA SERIES | GARDEN-AIRE SLIDING PATIO DOOR

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"										
SPU2666	SPU41166AS	SPU41166SA	SPU7566SASR	SPU7566SASL	SPU3066	SPU51166AS	SPU51166SA	SPU81166SASR	SPU81166SASL	
7'-11 5/8"										
8'-0 1/8"										
81 3/4"										
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.

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

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"

ES. = 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"	4'-11 7/16"	5'-11 7/16"	5'-11 7/16"
R.O.	4'-11 15/16"	4'-11 15/16"	5'-11 15/16"	5'-11 15/16"
G.S.	20 5/16"	20 5/16"	26 5/16"	26 5/16"
6'-7 1/2"				
6'-8"				
65 11/16"				
ACT	INACT	ACT	ACT	INACT
SPFU41166AL	SPFU41166AR	SPFU51166AL	SPFU51166AR	
7'-11 5/8"				
8'-0 1/8"				
81 3/4"				
ACT	INACT	ACT	ACT	INACT
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"
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'-0"	1'-4"	1'-12"	1'-12"
	6"	10"		
	SPUT2610	SPUT3010	SPUT4110	SPUT5110
	SPUT2614	SPUT3014	SPUT4114	SPUT5114
	SPUT2616	SPUT3016	SPUT4116	SPUT5116
	SPUT2618	SPUT3018	SPUT4118	SPUT5118
	SPUT2620	SPUT3020	SPUT4120	SPUT5120
	SPLIT2626	SPLIT3026	SPLIT4126	SPLIT5126

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.

Additional swinging door sizes are available in the
Rectangular transom units are sash set as standard.

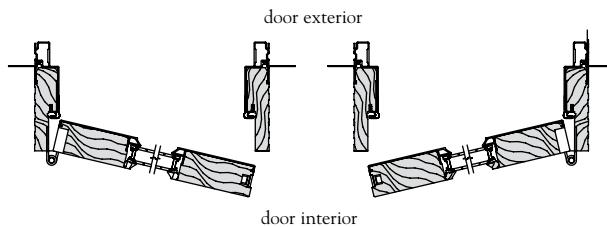
The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing firestop sleeves). Therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be filled with drywall compound.

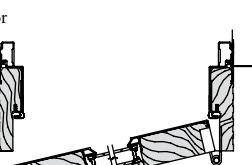
ULTRA SERIES | INSWING PATIO DOORS

HINGING FOR INSWING PATIO DOOR

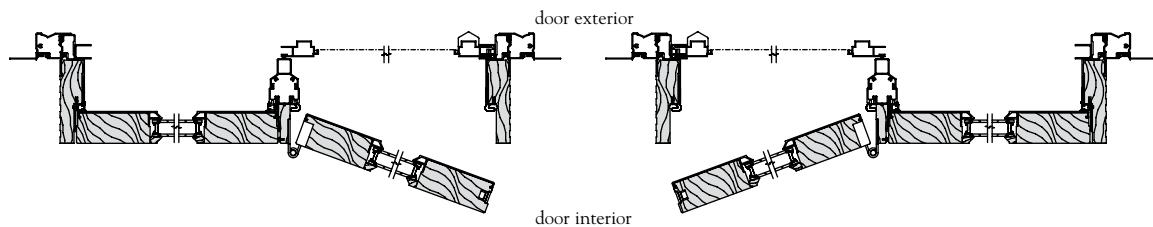
HL (Hinged Left)



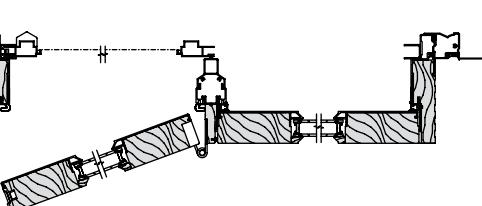
HR (Hinged Right)



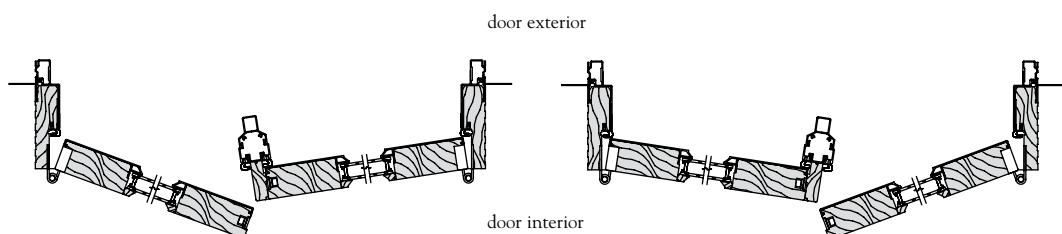
SAL (Stationary, Active Hinged Left)



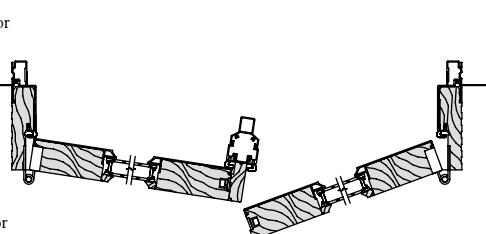
ASR (Active Hinged Right, Stationary)



AL (French, Hinged Left, Active)



AR (French, Hinged Right, Active)

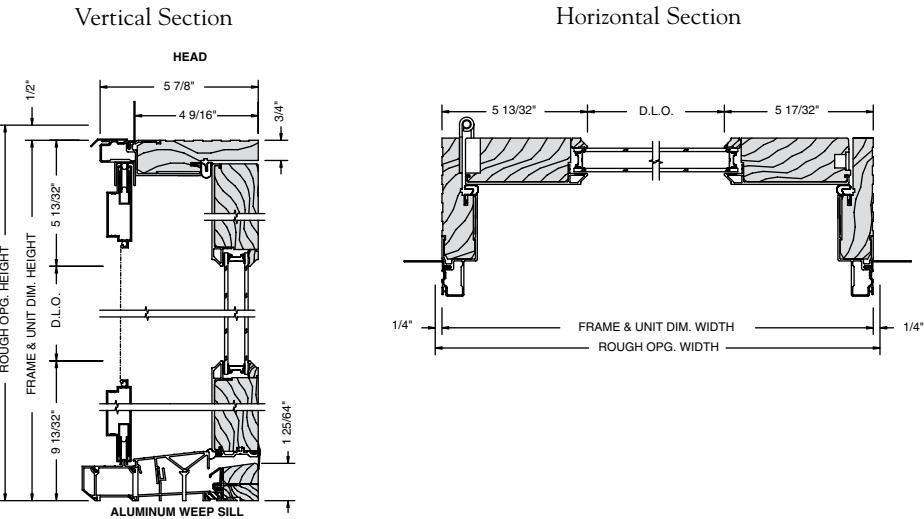


NOTE: Drawings are not to scale.

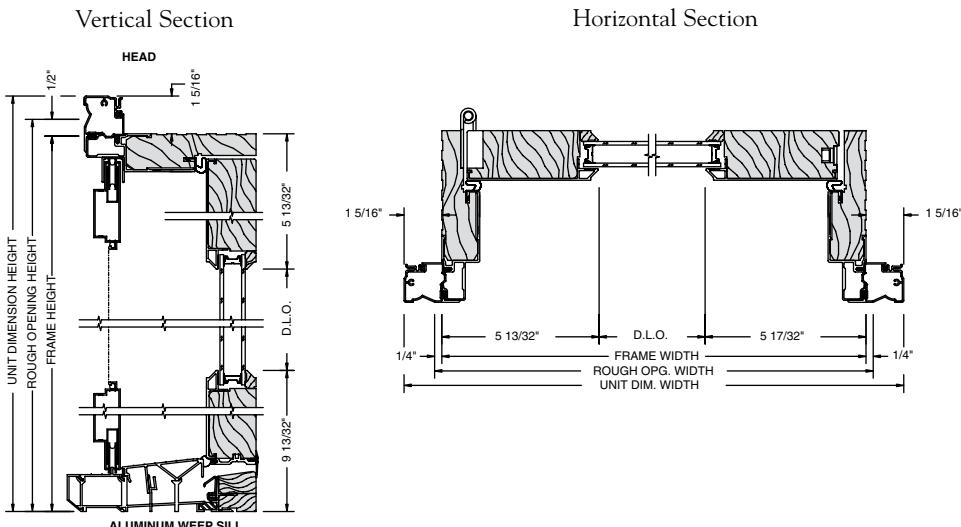
ULTRA SERIES | INSWING PATIO DOORS

INSWING PATIO DOOR CROSS SECTION DRAWINGS

Standard Inswing



Insing with 1-15/16" Brickmould



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.

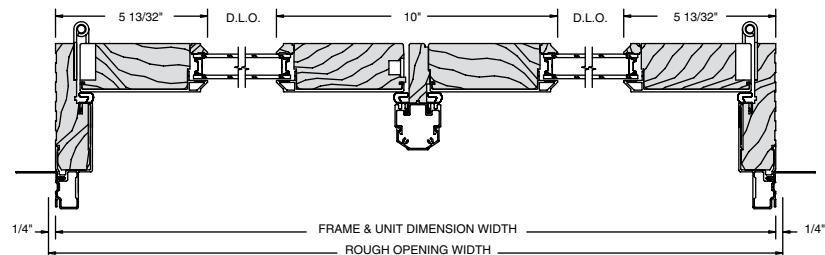
Some units are shown with optional drip cap or nailing fin.

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

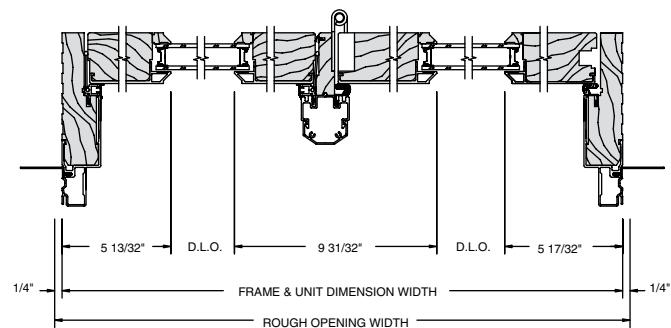
Additional and the most current drawings are available at www.kolbe-kolbe.com.

ULTRA SERIES | INSWING PATIO DOORS

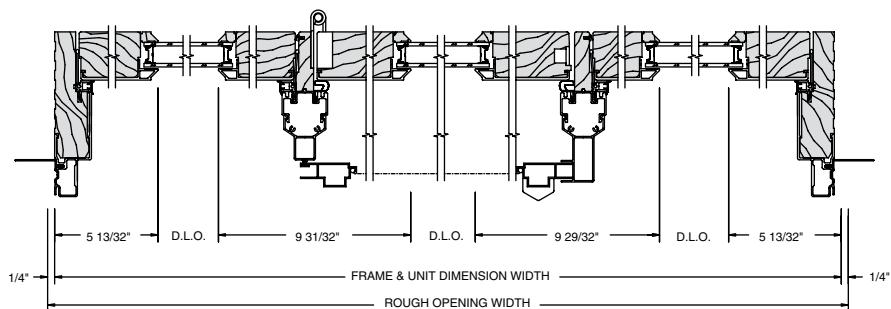
TWO-WIDE INSWING PATIO FRENCH DOOR



TWO-WIDE INSWING PATIO DOOR - ACTIVE/STATIONARY

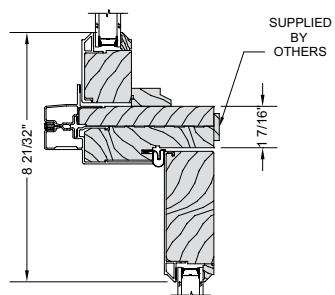


THREE-WIDE INSWING PATIO DOOR



RECTANGULAR TRANSOM STACKED OVER INSWING PATIO DOOR

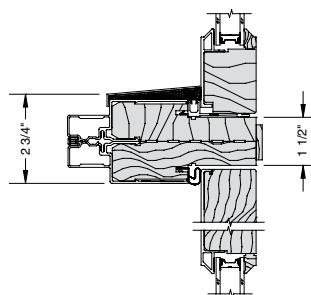
Standard



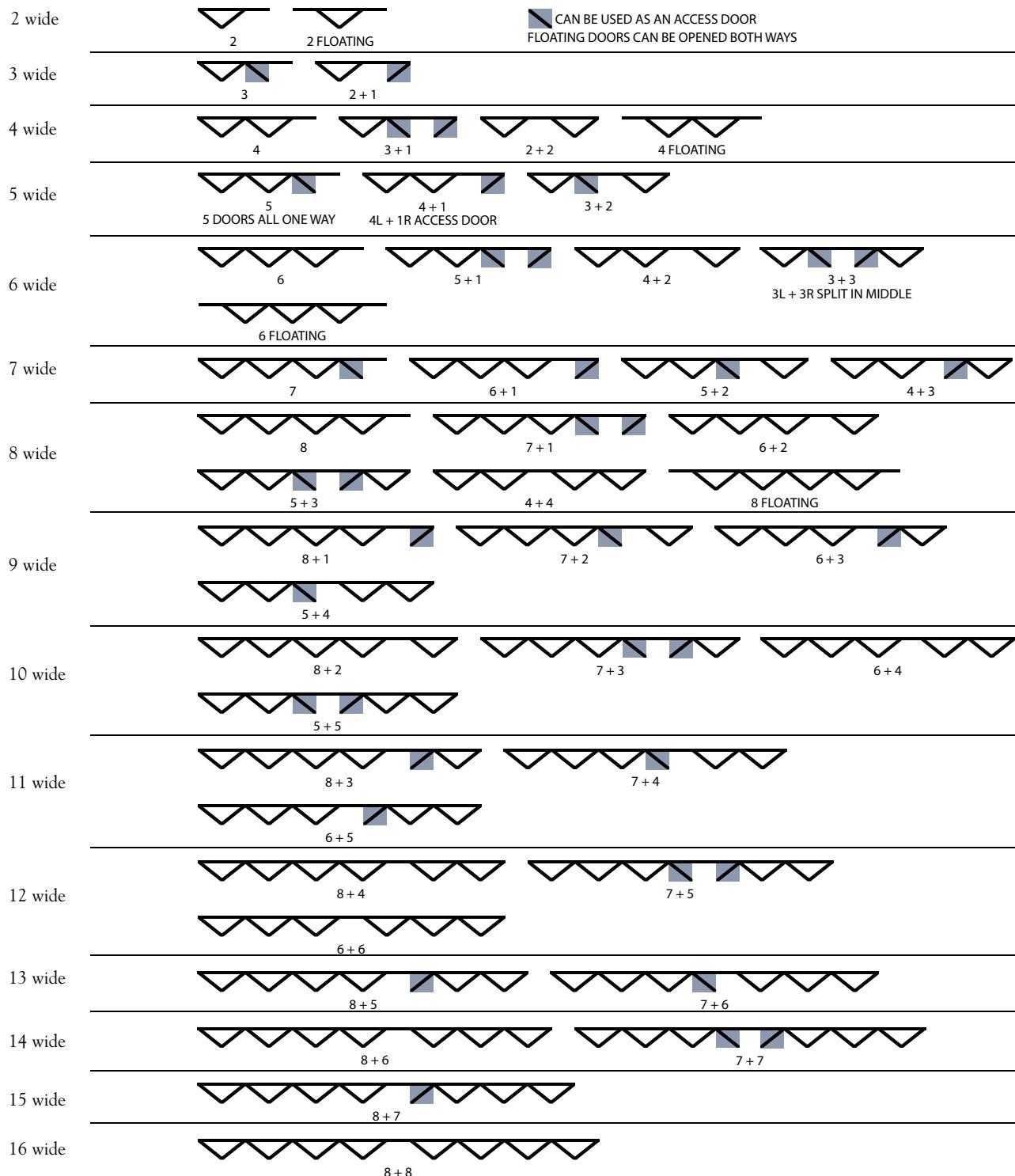
NOTES:

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

Optional



ULTRA SERIES | FOLDING DOORS



NOTES:

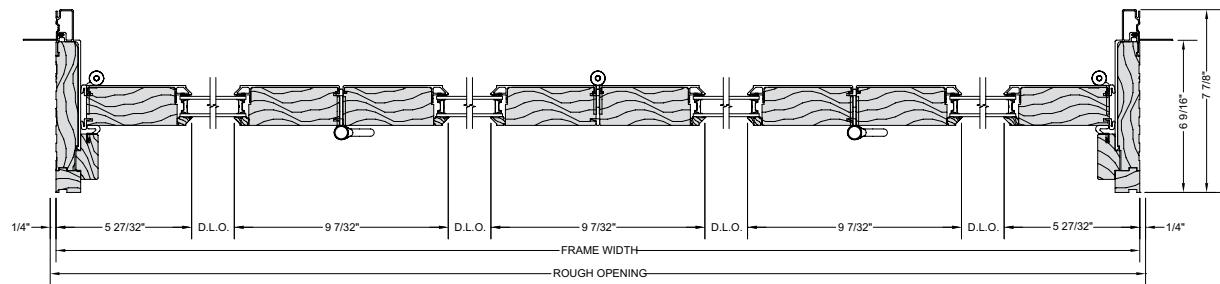
Folding doors are shown as outswing operation.

There is a maximum of 8 panels per side.

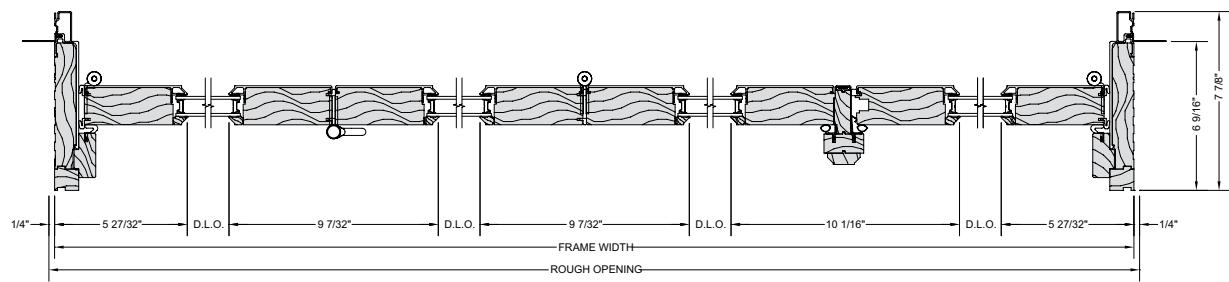
Access door configuration will have a swing door hinged off of one of the sides of the frame or off of another panel, depending on the configuration chosen. Configurations can be reversed. The configurations and grille patterns shown above are an overview of what is available. Contact your Kolbe dealer for more information.

ULTRA SERIES | FOLDING DOORS

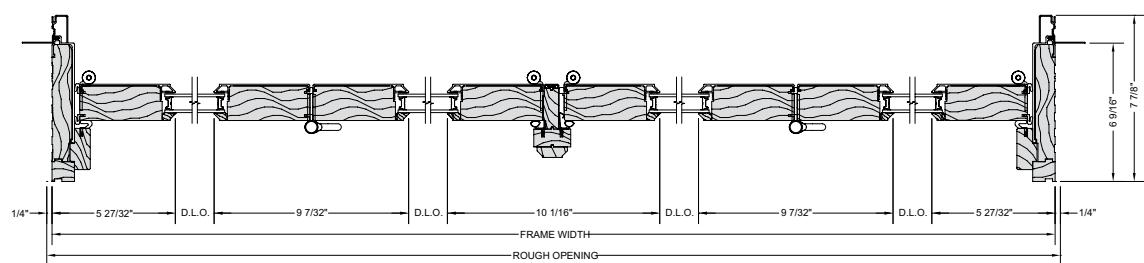
FOUR-WIDE: FOLDING ONE-WAY



FOUR-WIDE: ONE LEFT & THREE RIGHT



FOUR-WIDE: TWO LEFT & TWO RIGHT

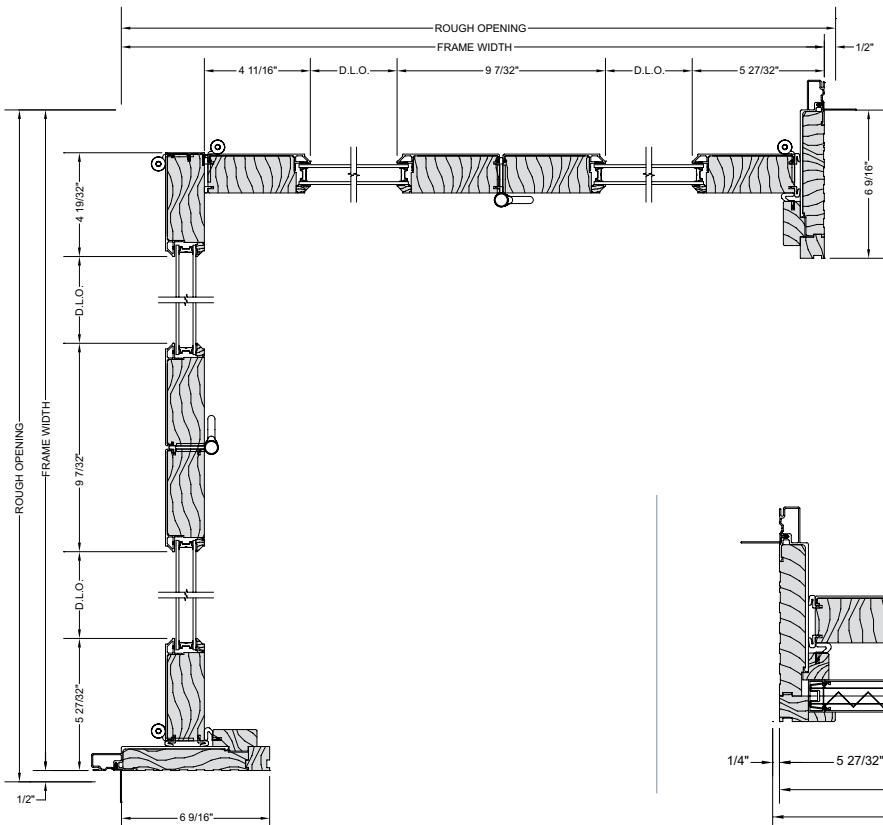


NOTES:

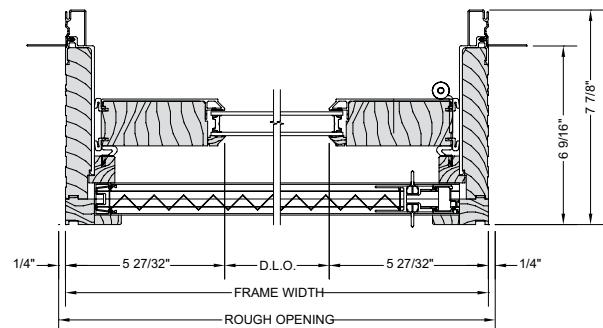
Drawings are not to scale.

Operation is viewed from the exterior.

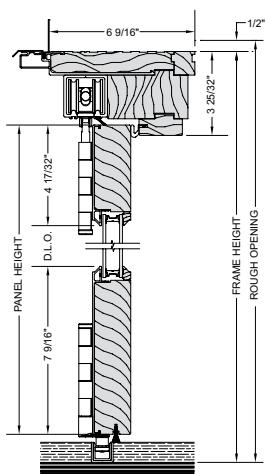
CORNER UNIT



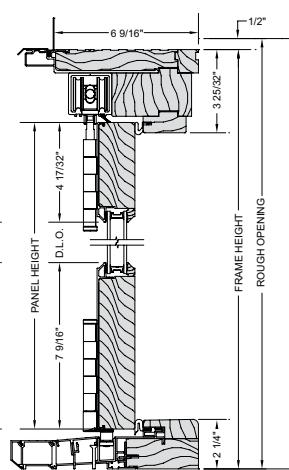
ONE WIDE WITH SCREEN



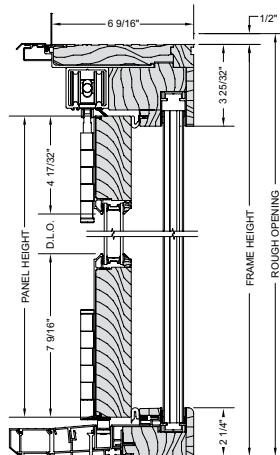
1.75 PANEL WITH RECESSED SILL



1.75 PANEL WITH WEEP SILL



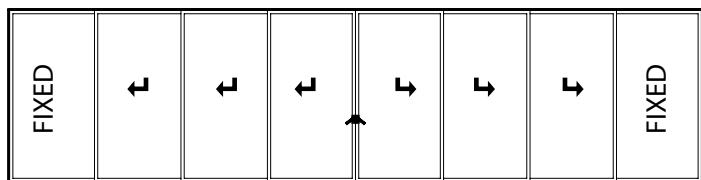
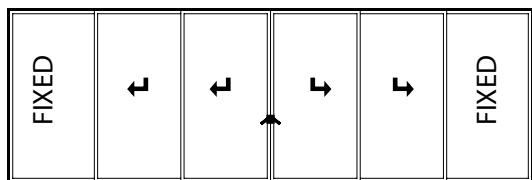
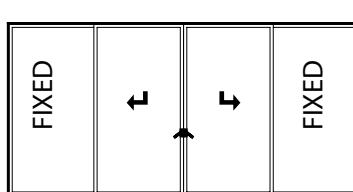
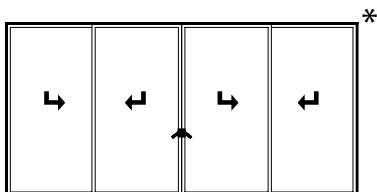
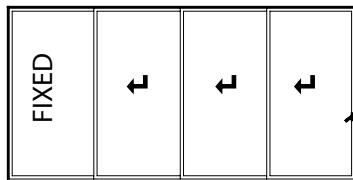
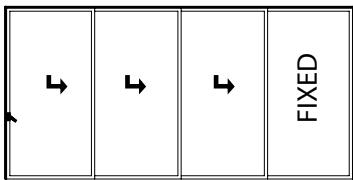
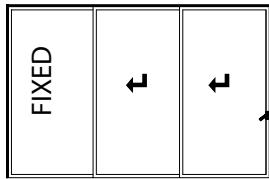
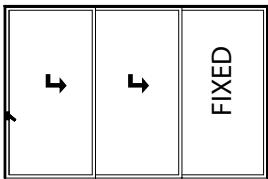
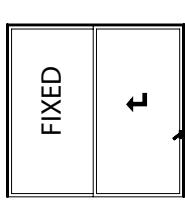
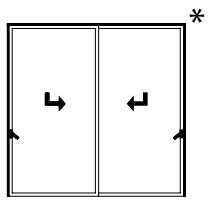
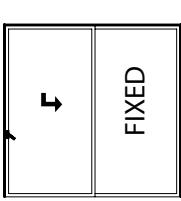
1.75 PANEL WITH WEEP SILL AND SCREEN



NOTE: Drawings are not to scale.

ULTRA SERIES | TERRASPA[®] LIFT & SLIDE DOORS

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

NOTES:

*Panel design is not available in a pocketing lift and slide.
Drawings are not to scale.

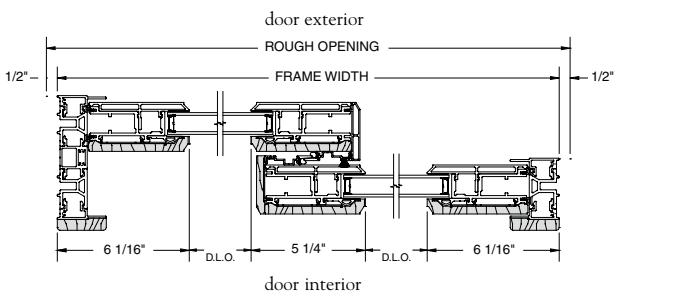
Dimension calculation formulas for TerraSpan units vary depending on the unit and application. Please contact your Kolbe supplier if formulas are needed.

ULTRA SERIES | TERRASPA[®] LIFT & SLIDE DOORS

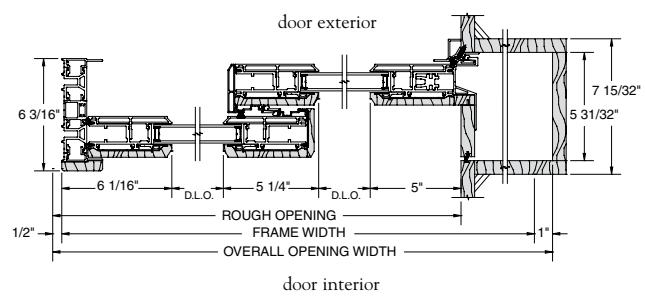
LIFT & SLIDE CROSS SECTION DRAWINGS

Horizontal Section

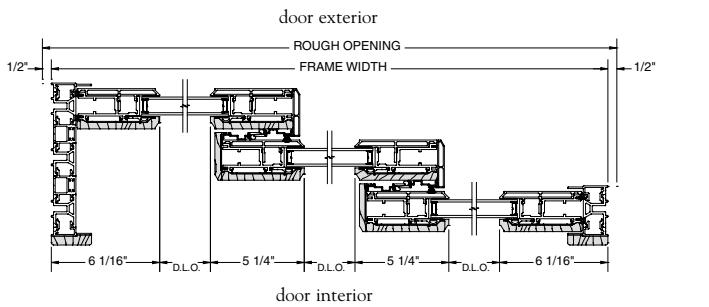
2-WIDE STACKING RECESSED SILL DETAIL



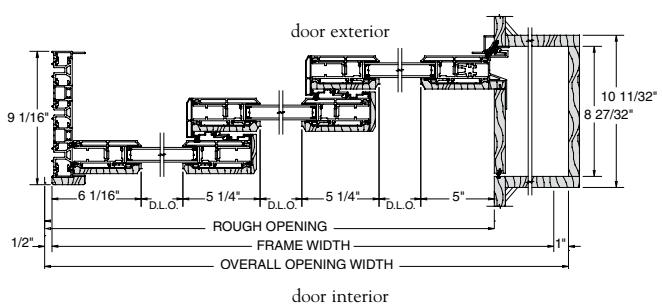
2-WIDE POCKETING FLUSH SILL DETAIL



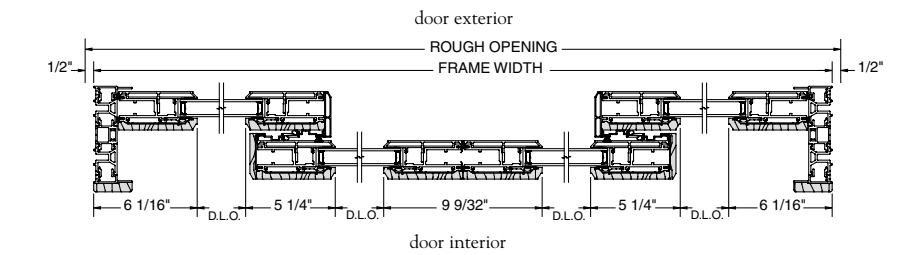
3-WIDE STACKING RECESSED SILL DETAIL



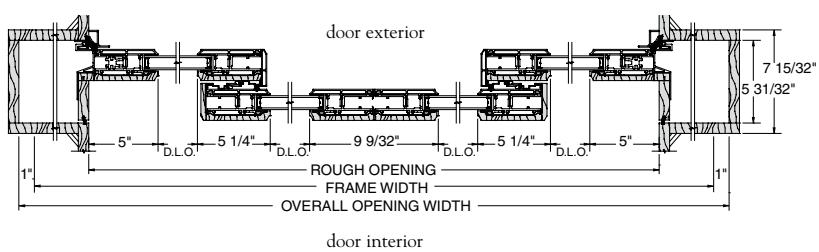
3-WIDE POCKETING FLUSH SILL DETAIL



4-WIDE STACKING CENTER-OPENING*



4-WIDE POCKETING CENTER-OPENING*

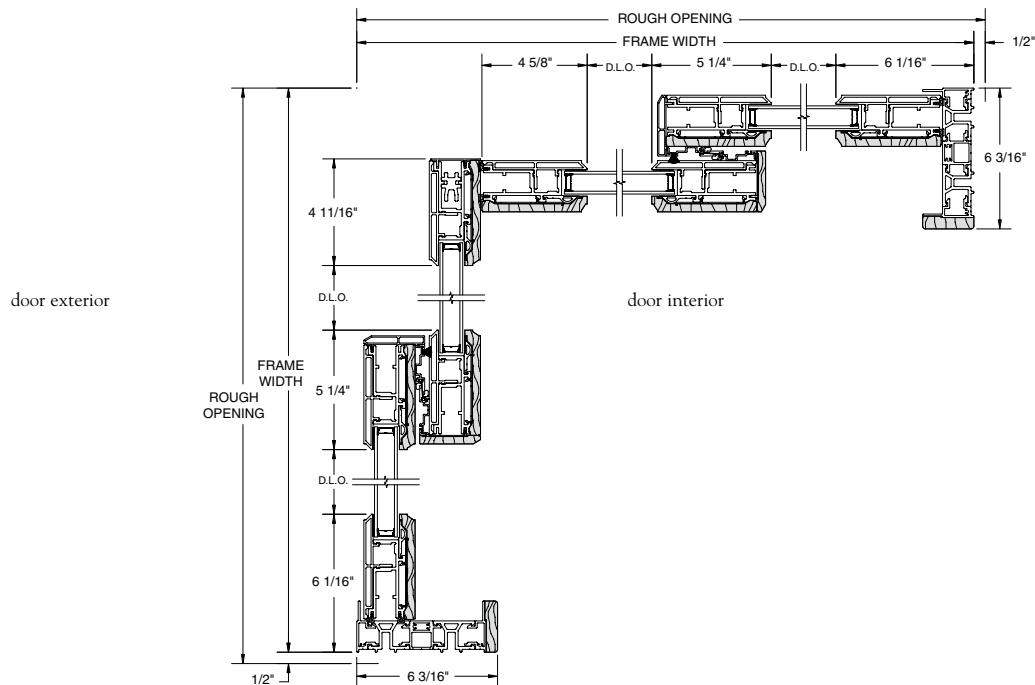


*There is no difference in the horizontal section details between a flush sill and a recessed sill for center-operating units.

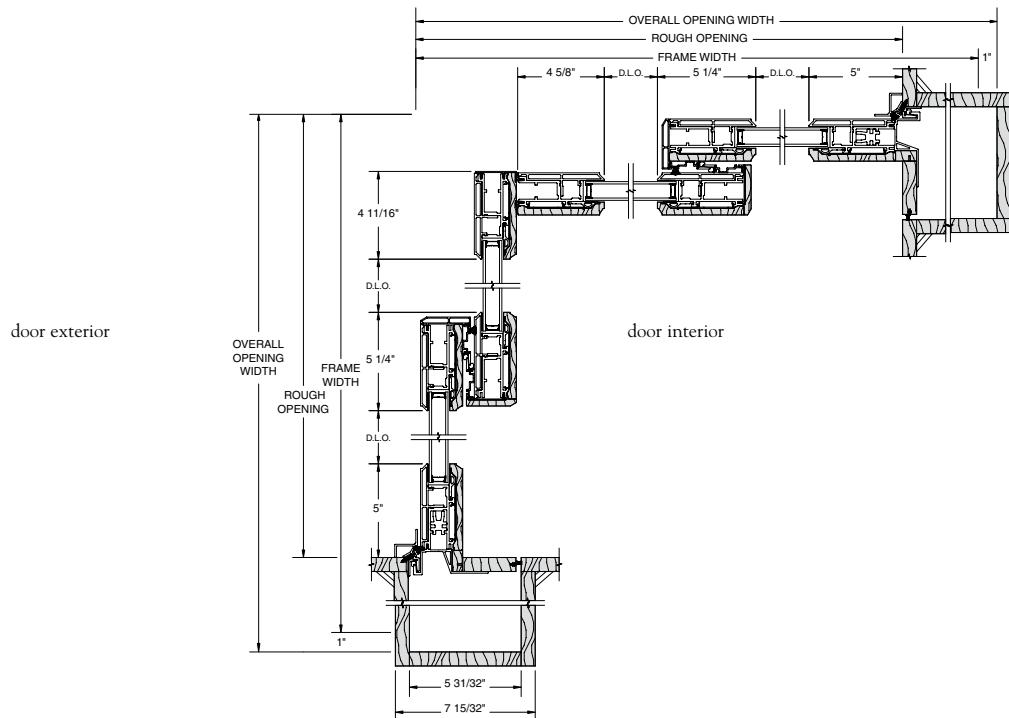
ULTRA SERIES | TERRASPA[®] LIFT & SLIDE DOORS

Horizontal Section

90° WITH JAMBS



90° WITH POCKETS



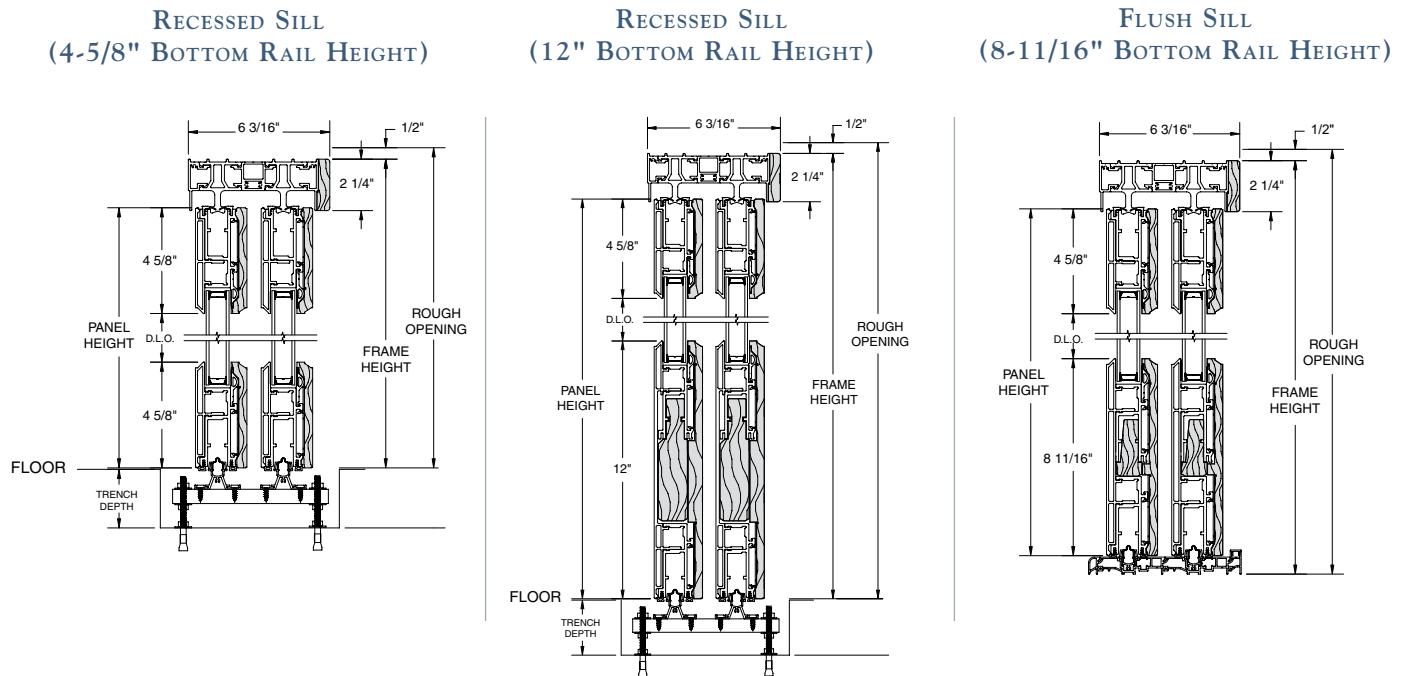
NOTES:

Drawings are not to scale.

Additional and the most current drawings are available at www.kolbe-kolbe.com

ULTRA SERIES | TERRASPA[®] LIFT & SLIDE DOORS

Vertical Section



NOTE: Drawings are not to scale.



ULTRA SERIES | ENTRANCE DOORS

INSWING ENTRANCE DOORS

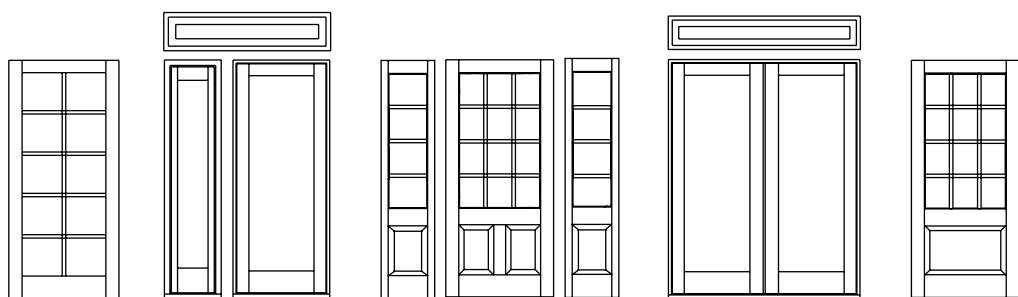
OUTSWING ENTRANCE DOORS

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" LoE²-270 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 WaterguardTM 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)

- LoE²-240*
- LoE³-366*
- 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

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.

- 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

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 mulled units
- Tempered, 7/8" LoE²-270 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)

- LoE²-240*
- LoE³-366*
- ThermaPlus 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



Gold-painted Bright Brass Antique Brass



Stainless Steel Satin Nickel Antique Nickel



Oil-rubbed* Rustic Umber Matte Black

Non-Adjustable Hinges



Bright Brass Antique Brass Satin Nickel Antique Nickel



Stainless Steel Oil-rubbed* Matte Black



Bright Brass Antique Brass Stainless Steel Oil-rubbed*



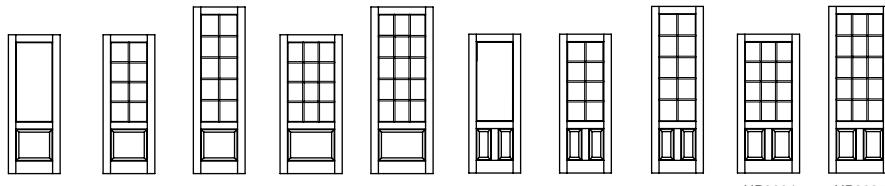
Bright Brass Oil-rubbed*

*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
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

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

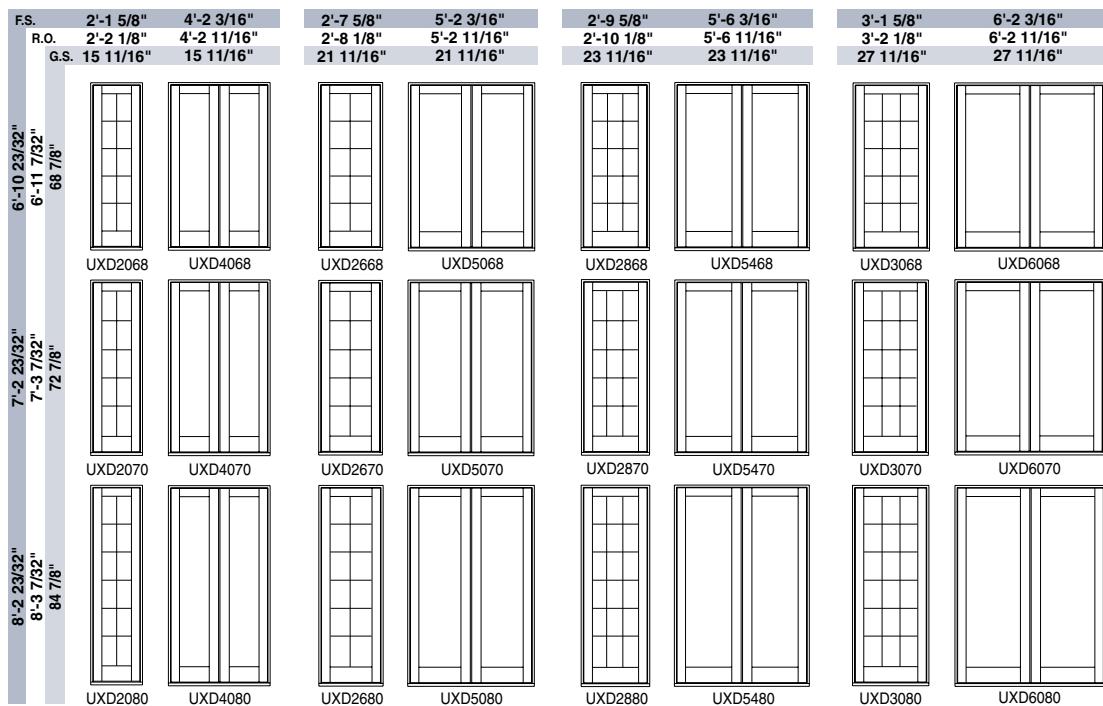
Elevation charts provide frame sizes for units without brickmould. Below are the calculations to determine overall unit dimensions for units with brickmould.

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"

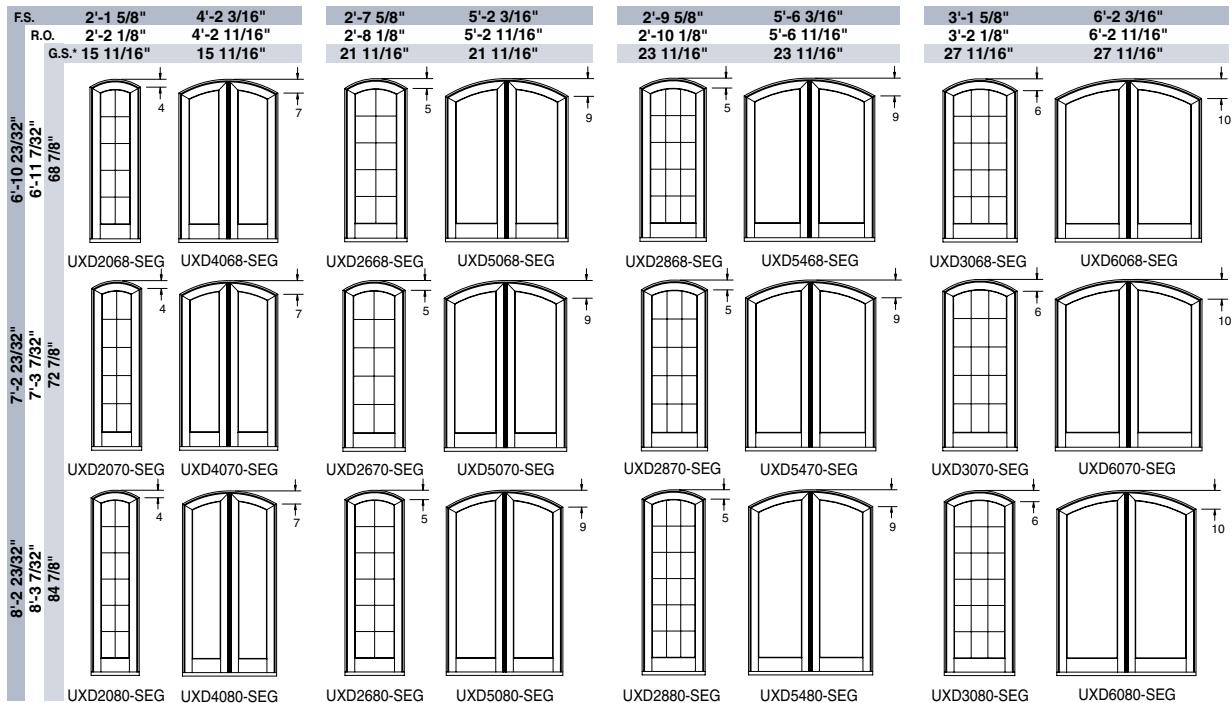
F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

ULTRA SERIES | INSWING ENTRANCE DOORS

INSWING ENTRANCE DOORS



SEGMENT HEAD INSWING ENTRANCE DOORS



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

FS.	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"	68 7/8"		
UXD1068S	UXD1268S	UXD1468S	UXD1668S	
7'-2 23/32"	7'-3 7/32"	72 7/8"		
UXD1070S	UXD1270S	UXD1470S	UXD1670S	
8'-2 23/32"	8'-3 7/32"	84 7/8"		
UXD1080S	UXD1280S	UXD1480S	UXD1680S	

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.

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

INSWING ENTRANCE DOORS | RECTANGULAR TRANSOMS

FS.	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"
1'-0"	6"							
UXDT2010	UXDT2610	UXDT2810	UXDT3010	UXDT4010	UXDT5010	UXDT5410	UXDT6010	
1'-4"	10"							
UXDT2014	UXDT2614	UXDT2814	UXDT3014	UXDT4014	UXDT5014	UXDT5414	UXDT6014	
1'-8"	12"							
UXDT2016	UXDT2616	UXDT2816	UXDT3016	UXDT4016	UXDT5016	UXDT5416	UXDT6016	
1'-12"	14"							
UXDT2018	UXDT2618	UXDT2818	UXDT3018	UXDT4018	UXDT5018	UXDT5418	UXDT6018	
1'-16"	18"							
UXDT2020	UXDT2620	UXDT2820	UXDT3020	UXDT4020	UXDT5020	UXDT5420	UXDT6020	
2'-0"	24"							
UXDT2026	UXDT2626	UXDT2826	UXDT3026	UXDT4026	UXDT5026	UXDT5426	UXDT6026	

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.

FS. = Frame Size

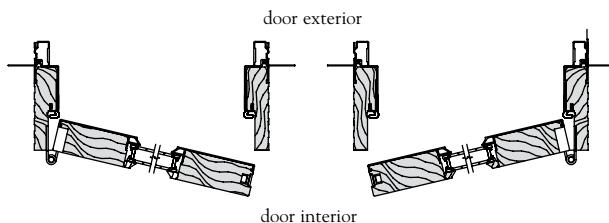
R.O. = Rough Opening

G.S. = Glass Size

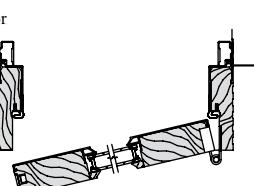
ULTRA SERIES | INSWING ENTRANCE DOORS

HINGING FOR INSWING ENTRANCE DOORS

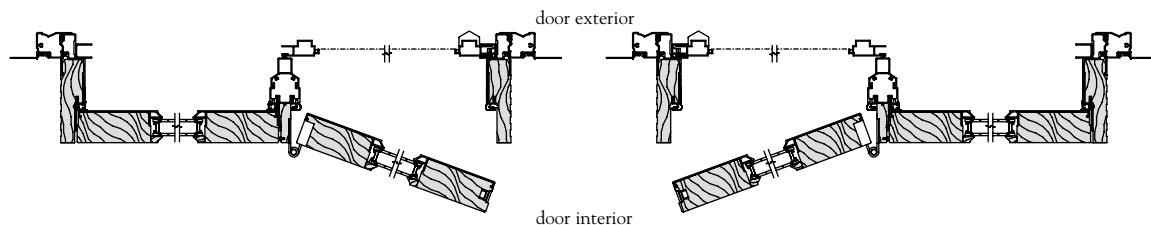
HL (Hinged Left)



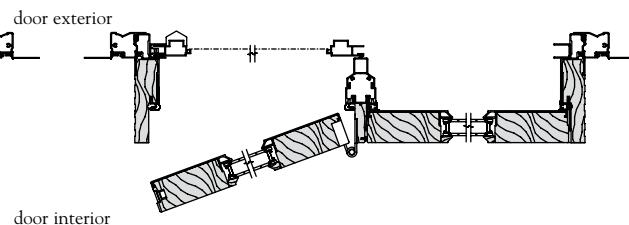
HR (Hinged Right)



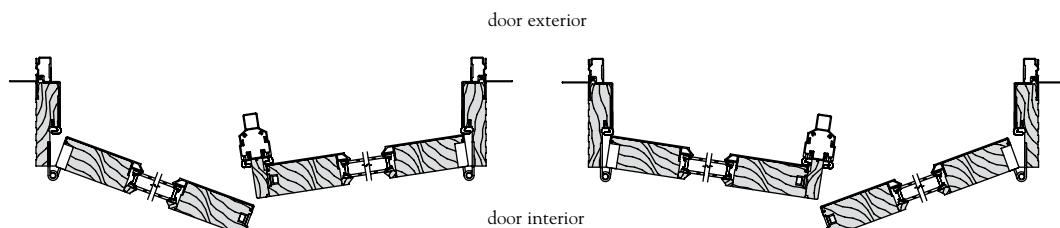
SAL (Stationary, Active Hinged Left)



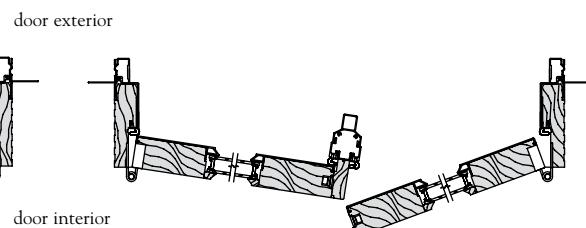
ASR (Active Hinged Right, Stationary)



AL (French, Hinged Left, Active)



AR (French, Hinged Right, Active)

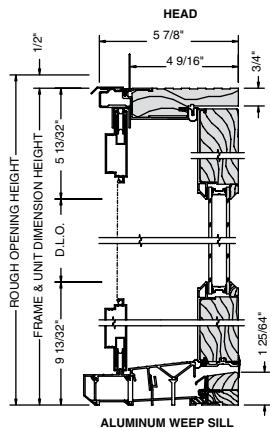


ULTRA SERIES | INSWING ENTRANCE DOORS

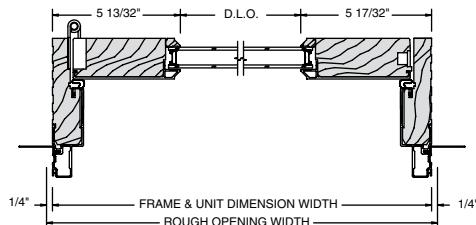
INSWING ENTRANCE DOOR CROSS SECTION DRAWINGS

Standard

Vertical Section

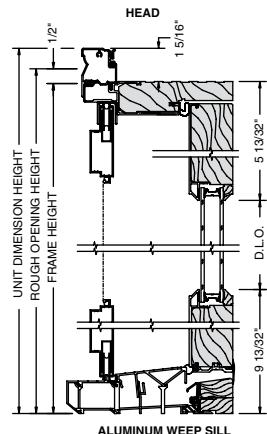


Horizontal Section

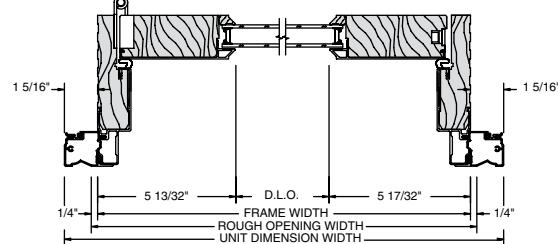


Inswing with 1-15/16" Brickmould

Vertical Section

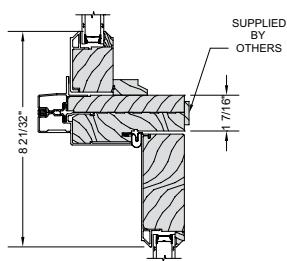


Horizontal Section

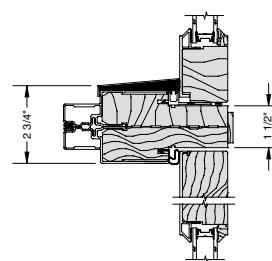


RECTANGULAR TRANSOM STACKED OVER INSWING ENTRANCE DOOR

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.

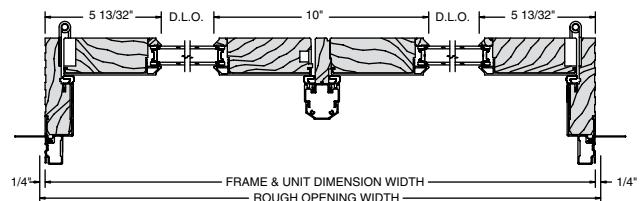
Some units are shown with optional drip cap or nailing fin.

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

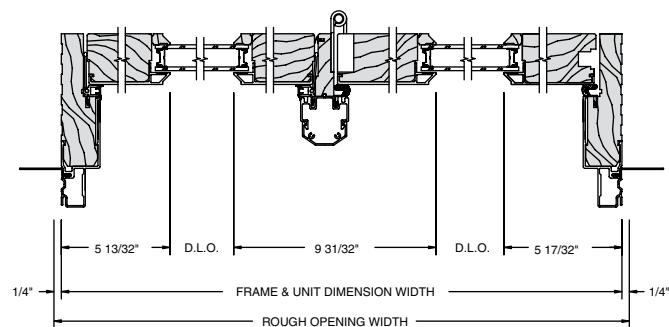
Additional and the most current drawings are available at www.kolbe-kolbe.com.

ULTRA SERIES | INSWING ENTRANCE DOORS

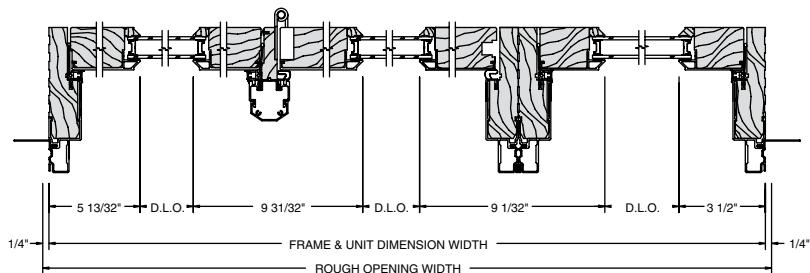
TWO-WIDE INSWING FRENCH DOOR



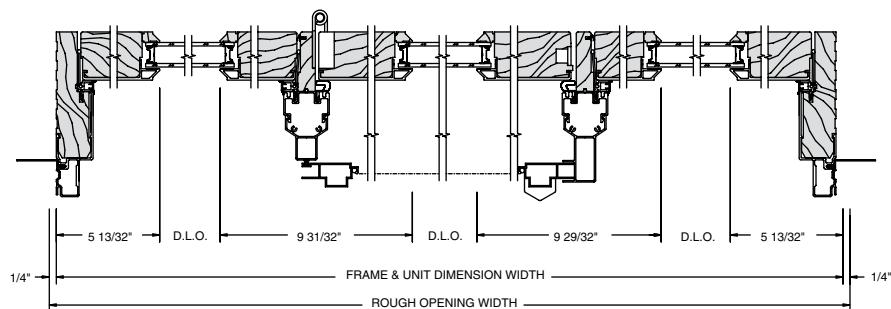
TWO-WIDE INSWING ENTRANCE DOOR - ACTIVE/STATIONARY



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
	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)	-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"	7'-2 19/32"	7'-3 3/32"	7'-2 19/32"	7'-3 3/32"	7'-2 19/32"	7'-3 3/32"
	68 7/8"	68 7/8"	72 7/8"	72 7/8"	72 7/8"	72 7/8"	72 7/8"	72 7/8"
UXD2068	UXD4068	UXD2668	UXD5068	UXD2868	UXD5468	UXD3068	UXD6068	
UXD2070	UXD4070	UXD2670	UXD5070	UXD2870	UXD5470	UXD3070	UXD6070	
UXD2080	UXD4080	UXD2680	UXD5080	UXD2880	UXD5480	UXD3080	UXD6080	

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"	3'-1 11/32"	6'-0 5/8"
	65 11/16"	65 11/16"	26 5/16"	26 5/16"
SPU2666	SPU41166	SPU3066	SPU51166	
SPU2680	SPU41180	SPU3080	SPU51180	

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.

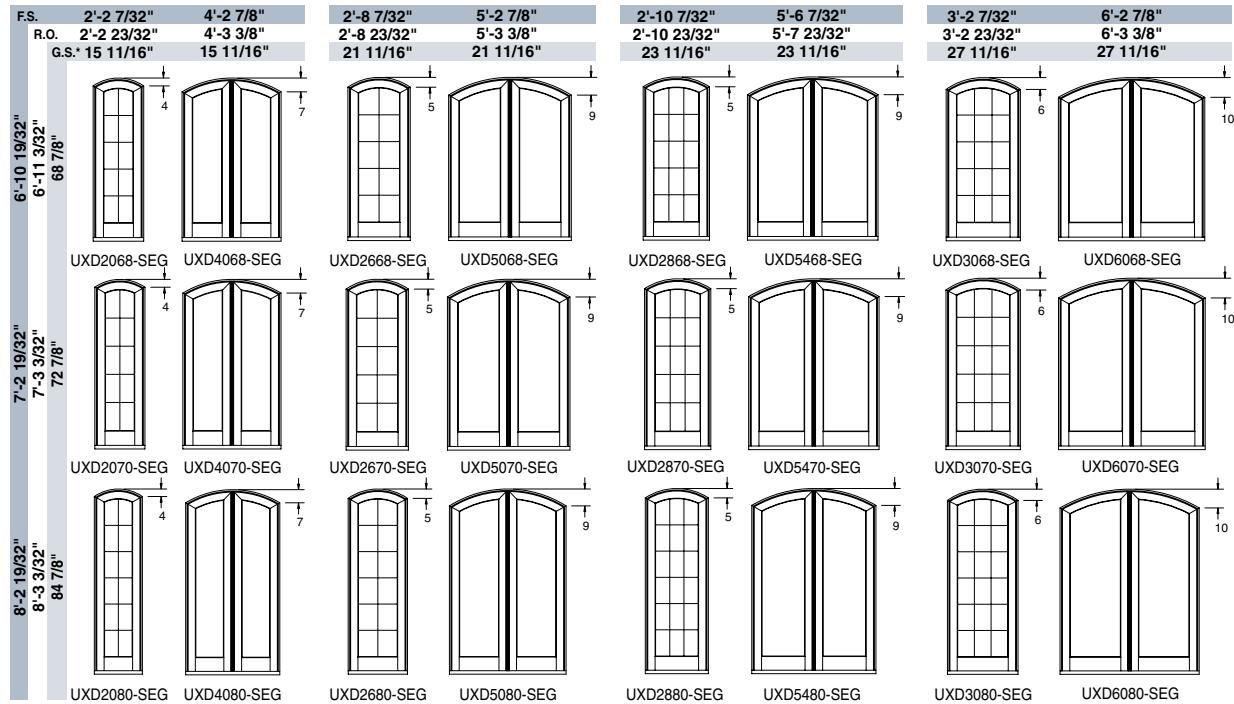
F.S. = Frame Size

R.O. = Rough Opening

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

ULTRA SERIES | OUTSWING ENTRANCE DOORS

SEGMENT HEAD OUTSWING ENTRANCE DOORS



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.

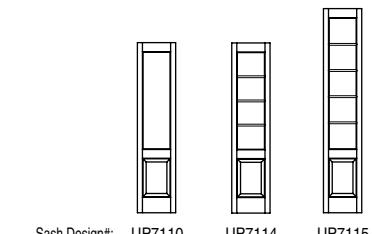
F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

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"				
68 7/8"				
	UXD1068S	UXD1268S	UXD1468S	UXD1668S
7'-2 19/32"				
7'-3 3/32"				
72 7/8"				
	UXD1070S	UXD1270S	UXD1470S	UXD1670S
8'-2 19/32"				
8'-3 3/32"				
84 7/8"				
	UXD1080S	UXD1280S	UXD1480S	UXD1680S

OUTSWING 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	✓

Product I.D. Code

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.

ES. = 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"
2'-5 1/2"	1'-11 1/2"	1'-7 1/2"	1'-5 1/2"	1'-3 1/2"	11 1/2"			
2'-6"	2'-0"	1'-8"	1'-6"	1'-4"	1'-4"			
22 7/8"	16 7/8"	12 7/8"	10 7/8"	8 7/8"	4 7/8"			
	UXDT2010	UXDT2610	UXDT2810	UXDT3010	UXDT4010	UXDT5010	UXDT5410	UXDT6010
	UXDT2014	UXDT2614	UXDT2814	UXDT3014	UXDT4014	UXDT5014	UXDT5414	UXDT6014
	UXDT2016	UXDT2616	UXDT2816	UXDT3016	UXDT4016	UXDT5016	UXDT5416	UXDT6016
	UXDT2018	UXDT2618	UXDT2818	UXDT3018	UXDT4018	UXDT5018	UXDT5418	UXDT6018
	UXDT2020	UXDT2620	UXDT2820	UXDT3020	UXDT4020	UXDT5020	UXDT5420	UXDT6020
	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"
2'-5 1/2"	1'-11 1/2"	1'-7 1/2"	1'-5 1/2"	1'-3 1/2"
2'-6"	2'-0"	1'-8"	1'-6"	1'-4"
22 7/8"	16 7/8"	12 7/8"	10 7/8"	8 7/8"
	SPUT2610	SPUT3010	SPUT4110	SPUT5110
	SPUT2614	SPUT3014	SPUT4114	SPUT5114
	SPUT2616	SPUT3016	SPUT4116	SPUT5116
	SPUT2618	SPUT3018	SPUT4118	SPUT5118
	SPUT2620	SPUT3020	SPUT4120	SPUT5120
	SPUT2626	SPUT3026	SPUT4126	SPUT5126

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.

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

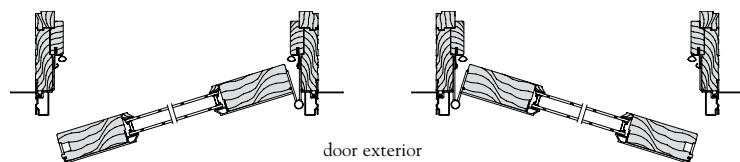
ULTRA SERIES | OUTSWING ENTRANCE DOORS

HINGING FOR OUTSWING ENTRANCE DOORS

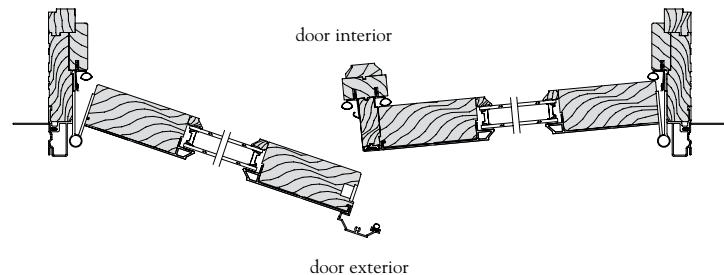
HR (Hinged Right)

HL (Hinged Left)

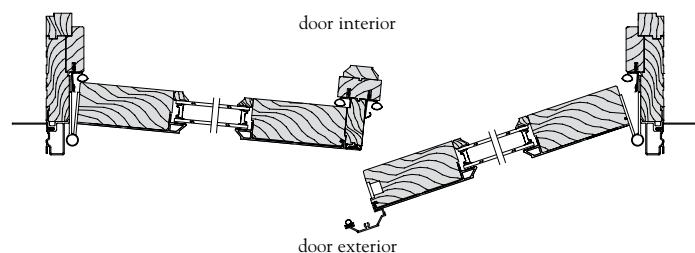
door interior



AL (French, Hinged Left, Active)



AR (French, Hinged Right, Active)



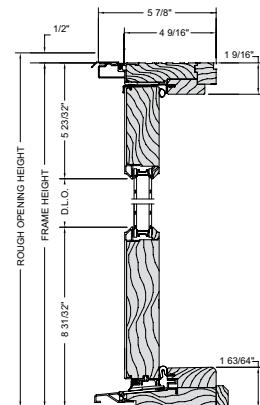
NOTE: Drawings are not to scale.

ULTRA SERIES | OUTSWING ENTRANCE DOORS

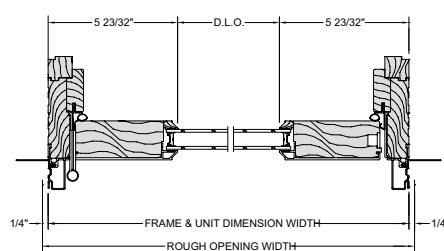
OUTSWING ENTRANCE DOOR CROSS SECTION DRAWINGS

Standard

Vertical Section

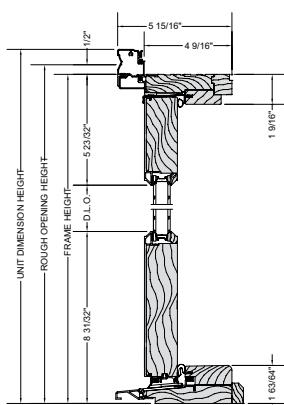


Horizontal Section

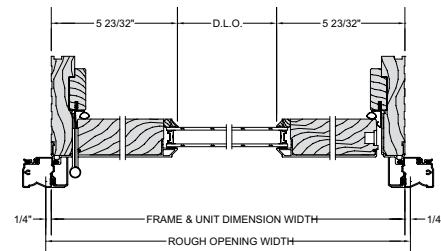


Outswing with 1-15/16" Brickmould

Vertical Section



Horizontal Section



RECTANGULAR TRANSOM STACKED OVER OUTSWING ENTRANCE DOOR

NOTES:

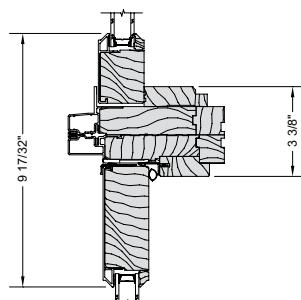
Drawings are not to scale.

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.

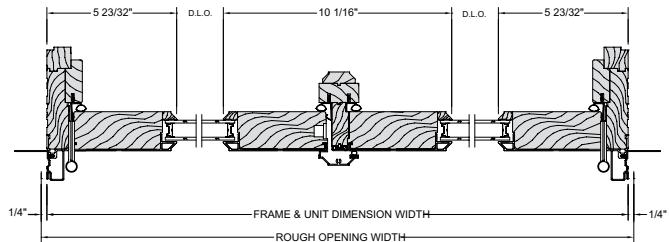
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

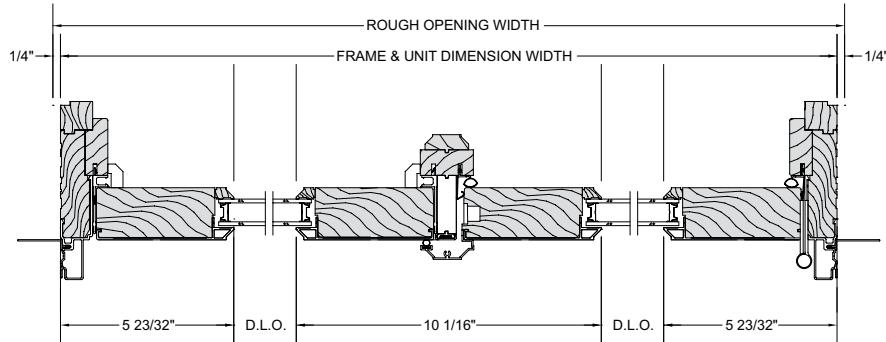


ULTRA SERIES | OUTSWING ENTRANCE DOORS

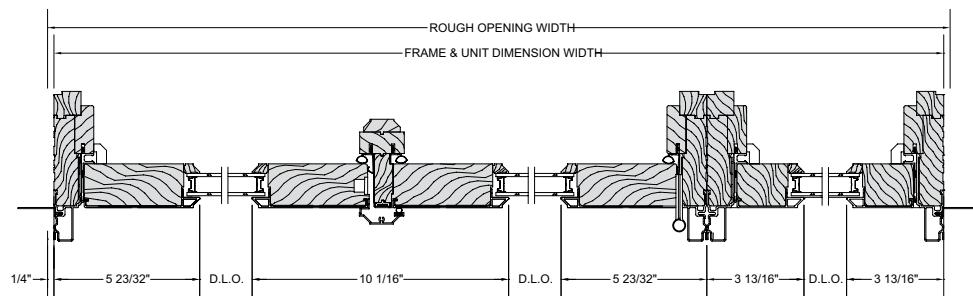
TWO-WIDE OUTSWING FRENCH DOOR



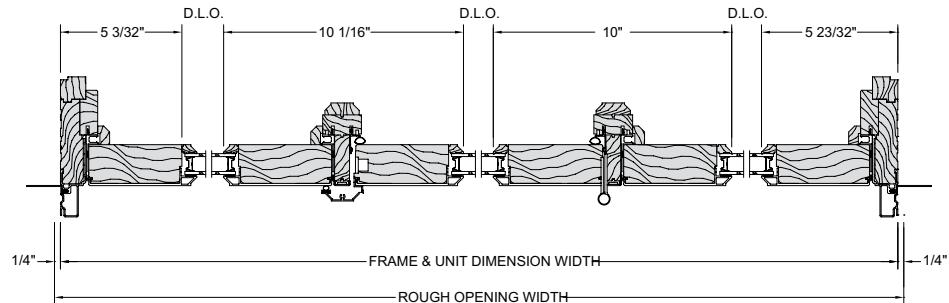
TWO-WIDE OUTSWING ENTRANCE DOOR - STATIONARY/ACTIVE



TWO-WIDE OUTSWING ENTRANCE DOOR WITH SIDELITE



THREE-WIDE OUTSWING ENTRANCE DOOR



NOTE: Drawings are not to scale.



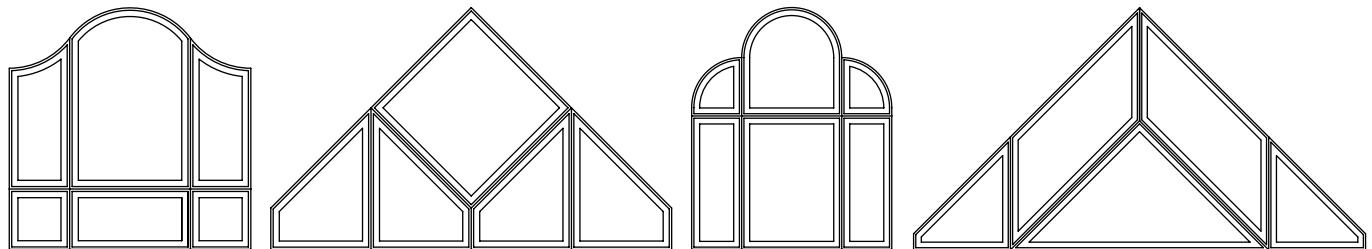
ULTRA SERIES | COMPLEMENTARY

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



Vinyl nailing fin applied as standard to units without brickmould



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 mulled units
- 7/8" LoE²-270 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.





RADIUS OPTIONAL FEATURES

GLASS (pgs. 6-7):

- LoE²-240*
- LoE³-366*
- 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.





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.

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 mulled units
- 7/8" LoE²-270 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):

- LoE²-240*
- LoE³-366*
- 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 mulled units
- 7/8" LoE²-270 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**

Beveled Direct Set profile



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 OPTIONAL FEATURES

GLASS (pgs. 6-7):

- LoE²-240*
- LoE³-366*
- 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)

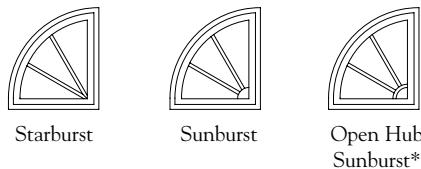
NOTES:

All measurements are nominal.

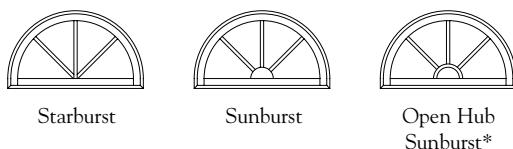
* Argon gas may not be included with units to be installed in or shipped through high altitude areas.

RADIUS DIVIDED LITE PATTERNS

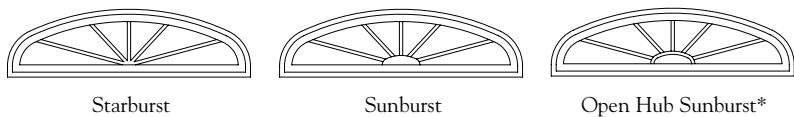
QUARTER-CIRCLES



HALF-CIRCLES



ELLIPTICALS



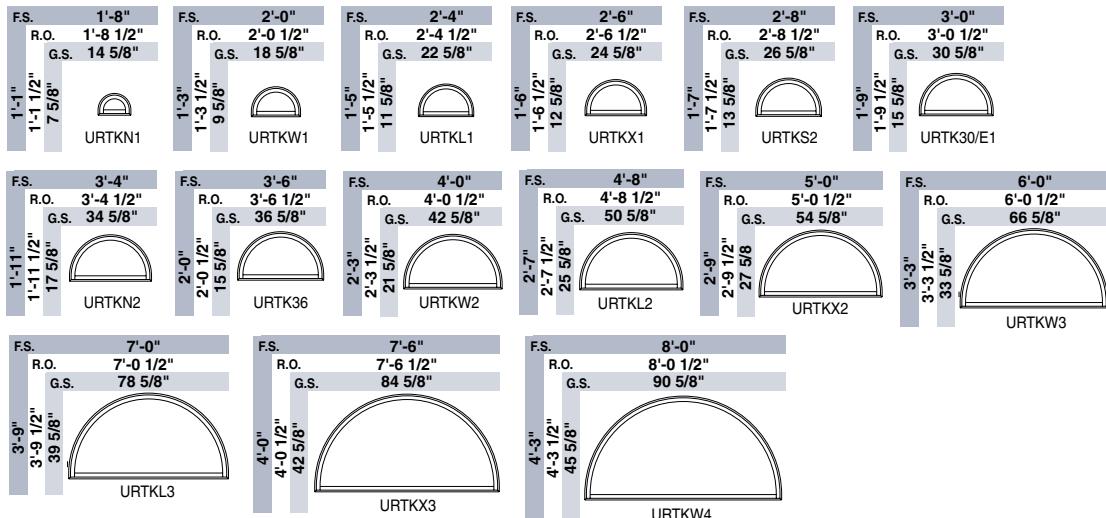
* Open Hub Sunburst is available with grilles-in-the-airspace with limitations; however, 2-1/4" PDL bars are not available. Consult your supplier for details.

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.

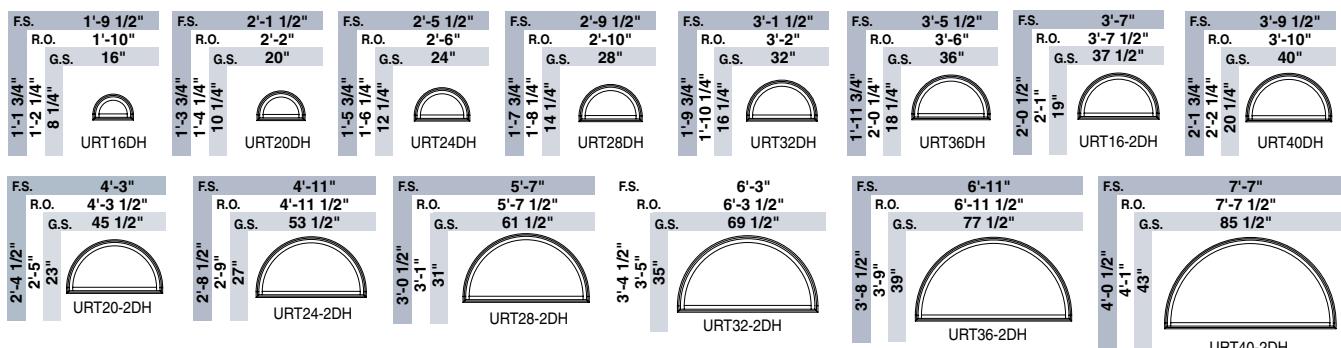
DIMENSION CALCULATIONS

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

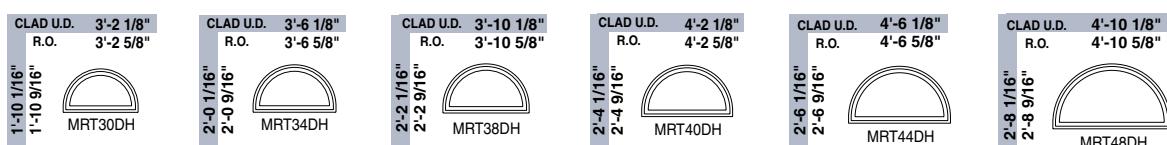
HALF-CIRCLE UNITS | CASEMENT



HALF-CIRCLE UNITS | DOUBLE HUNG



HALF-CIRCLE UNITS | MAGNUM DOUBLE HUNG



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.

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

ULTRA SERIES | RADIUS

HALF-CIRCLE UNITS | GARDEN-AIRE SLIDING PATIO DOOR

<p>F.S. 4'-11" R.O. 4'-11 1/2" G.S. 51 13/16"</p> <p>2'-9 1/2" 2'-9" 25 5/16"</p> <p>URTG411</p>	<p>F.S. 5'-0" R.O. 5'-0 1/2" G.S. 52 13/16"</p> <p>2'-9" 25 13/16"</p> <p>URTG50</p>	<p>F.S. 5'-11" R.O. 5'-11 1/2" G.S. 63 13/16"</p> <p>3'-2 1/2" 3'-3" 31 5/16"</p> <p>URTG511</p>	<p>F.S. 6'-0" R.O. 6'-0 1/2" G.S. 64 13/16"</p> <p>3'-3" 31 13/16"</p> <p>URTG60</p>
<p>F.S. 6'-6" R.O. 6'-6 1/2" G.S. 70 13/16"</p> <p>3'-6" 3'-6 1/2" 34 13/16"</p> <p>URTG66</p>	<p>F.S. 7'-11" R.O. 7'-11 1/2" G.S. 87 13/16"</p> <p>4'-2 1/2" 4'-3" 43 5/16"</p> <p>URTG711</p>	<p>F.S. 8'-0" R.O. 8'-0 1/2" G.S. 88 13/16"</p> <p>4'-3" 4'-3 1/2" 43 13/16"</p> <p>URTG80</p>	

HALF-CIRCLE UNITS | INSWING PATIO DOOR

<p>F.S. 2'-6 1/4" R.O. 2'-6 3/4" G.S. 24 3/4"</p> <p>1'-6 1/8" 1'-6 5/8" 12 5/8"</p> <p>URTS26</p>	<p>F.S. 3'-0 1/4" R.O. 3'-0 3/4" G.S. 30 3/4"</p> <p>1'-9 1/8" 1'-9 5/8" 15 5/8"</p> <p>URTS30</p>	<p>F.S. 4'-11 7/16" R.O. 4'-11 15/16" G.S. 53 15/16"</p> <p>2'-8 23/32" 2'-9 7/32" 27 9/32"</p> <p>URTS411</p>	<p>F.S. 5'-11 7/16" R.O. 5'-11 15/16" G.S. 65 15/16"</p> <p>3'-2 23/32" 3'-3 7/32" 33 7/32"</p> <p>URTS511</p>
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HALF-CIRCLE UNITS | INSWING ENTRANCE DOOR

<p>F.S. 2'-1 5/8" R.O. 2'-2 1/8" G.S. 20 1/8"</p> <p>1'-3 13/16" 1'-4 5/16" 10 5/16"</p> <p>URTXD20</p>	<p>F.S. 2'-7 5/8" R.O. 2'-8 1/8" G.S. 26 1/8"</p> <p>1'-6 13/16" 1'-7 5/16" 13 5/16"</p> <p>URTXD26</p>	<p>F.S. 2'-9 5/8" R.O. 2'-10 1/8" G.S. 28 1/8"</p> <p>1'-7 13/16" 1'-8 5/16" 14 5/16"</p> <p>URTXD28</p>	<p>F.S. 3'-1 5/8" R.O. 3'-2 1/8" G.S. 32 1/8"</p> <p>1'-9 13/16" 1'-10 5/16" 16 5/16"</p> <p>URTXD30</p>	<p>F.S. 4'-2 3/16" R.O. 4'-2 11/16" G.S. 44 11/16"</p> <p>2'-4 3/32" 2'-4 19/32" 22 19/32"</p> <p>URTXD40</p>
<p>F.S. 5'-2 3/16" R.O. 5'-2 11/16" G.S. 56 11/16"</p> <p>2'-10 3/32" 2'-10 19/32" 28 19/32"</p> <p>URTXD50</p>	<p>F.S. 5'-6 3/16" R.O. 5'-6 11/16" G.S. 60 11/16"</p> <p>3'-0 3/32" 3'-0 19/32" 38 19/32"</p> <p>URTXD54</p>	<p>F.S. 6'-2 3/16" R.O. 6'-2 11/16" G.S. 68 11/16"</p> <p>3'-4 3/32" 3'-4 19/32" 34 19/32"</p> <p>URTXD60</p>		

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.

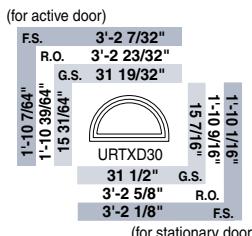
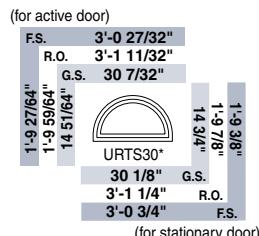
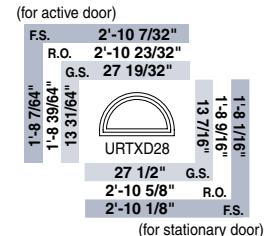
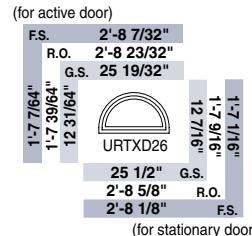
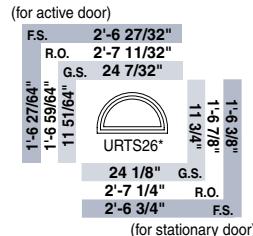
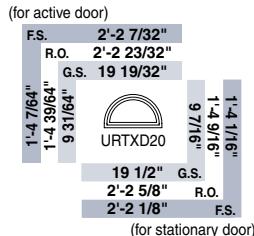
Divided lites are optional. Standard divided lite patterns are shown on pg. 164.

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.

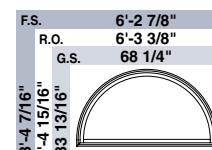
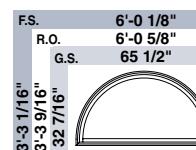
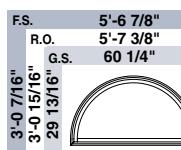
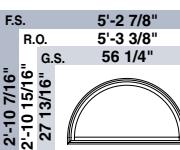
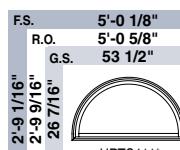
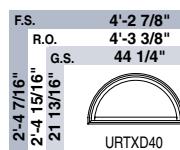
For rough opening recommendations, see pg. 188.

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

HALF-CIRCLE UNITS | ONE-WIDE OUTSWING ENTRANCE 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"	1'-6 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"
R.O.	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"	1'-6 5/8"						

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"
R.O.	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"	1'-6 5/8"			

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"	1'-6 5/8"		

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"	1'-6 5/8"			

UEHG66

UEHG711

UEHG80

NOTES:

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Radius units are sash set as standard. Direct set units are available but glass sizes differ from chart shown. Contact your supplier for details.

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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.

ES. = 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.

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

ULTRA SERIES | RADIUS

QUARTER-CIRCLE UNITS | CASEMENT

F.S. 1'-11" R.O. 1'-8 1/2" G.S. 14 5/8"	1'-8" 2'-3" 2'-3 1/2" 21 5/8"	URTQRN1
F.S. 2'-3" R.O. 2'-0 1/2" G.S. 18 5/8"	2'-0" 2'-3 1/2" 21 5/8"	URTQRW1
F.S. 2'-9" R.O. 2'-6 1/2" G.S. 24 5/8"	2'-6" 2'-9 1/2" 27 5/8"	URTQRX1
F.S. 3'-3" R.O. 3'-0 1/2" G.S. 30 5/8"	3'-0" 3'-3 1/2" 33 5/8"	URTQRK30
F.S. 4'-3" R.O. 4'-0 1/2" G.S. 42 5/8"	4'-0" 4'-3 1/2" 45 5/8"	URTQRW2

QUARTER-CIRCLE UNITS | DOUBLE HUNG

F.S. 2'-4 1/2" R.O. 2'-1 1/2" G.S. 20"	F.S. 2'-8 1/2" R.O. 2'-5 1/2" G.S. 24"	F.S. 3'-0 1/2" R.O. 2'-9 1/2" G.S. 28"	F.S. 3'-4 1/2" R.O. 3'-1 1/2" G.S. 32"
URTQR20DH	URTQR24DH	URTQR28DH	URTQR32DH

FULL CIRCLE UNITS | CASEMENT

F.S. 2'-0" R.O. 2'-0 1/2" G.S. 18 5/8"	F.S. 2'-6" R.O. 2'-6 1/2" G.S. 24 5/8"	F.S. 3'-0" R.O. 3'-0 1/2" G.S. 30 5/8"	F.S. 3'-6" R.O. 3'-6 1/2" G.S. 36 5/8"	F.S. 4'-0" R.O. 4'-0 1/2" G.S. 42 5/8"	F.S. 6'-0" R.O. 6'-0 1/2" G.S. 66 5/8"
UFC2-0	UFC2-6	UFC3-0	UFC3-6	UFC4-0	UFC6-0

OVUL UNITS | CASEMENT

F.S. 2'-6" R.O. 1'-8 1/2" G.S. 14 5/8"	1'-8" 2'-0" R.O. 1'-8 1/2" G.S. 18 5/8"	3'-0" 3'-0 1/2" R.O. 1'-8 1/2" G.S. 18 5/8"
UOV1-8	UOV2-0	UOV3-0
4'-6" 4'-6 1/2" 48 5/8"		

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.

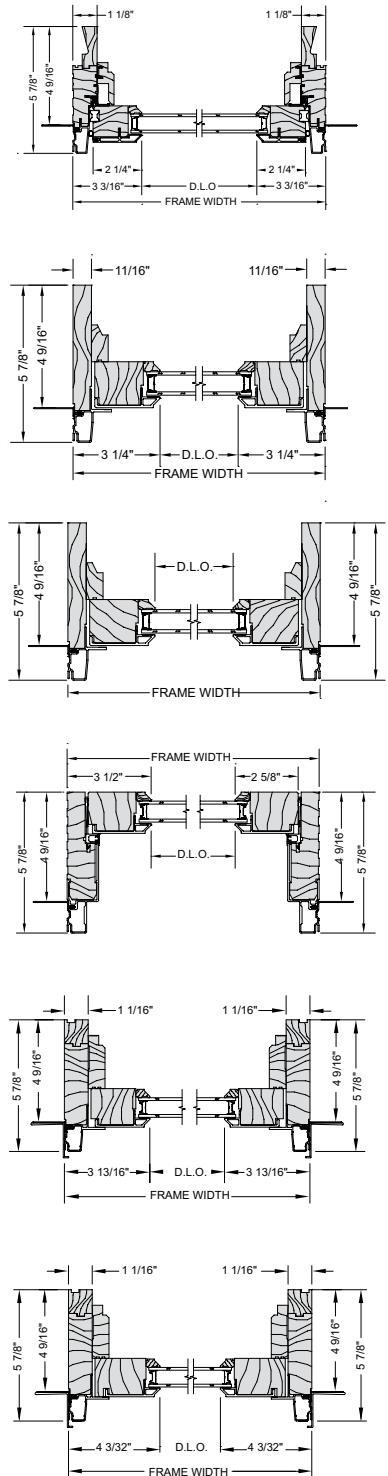
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good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

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

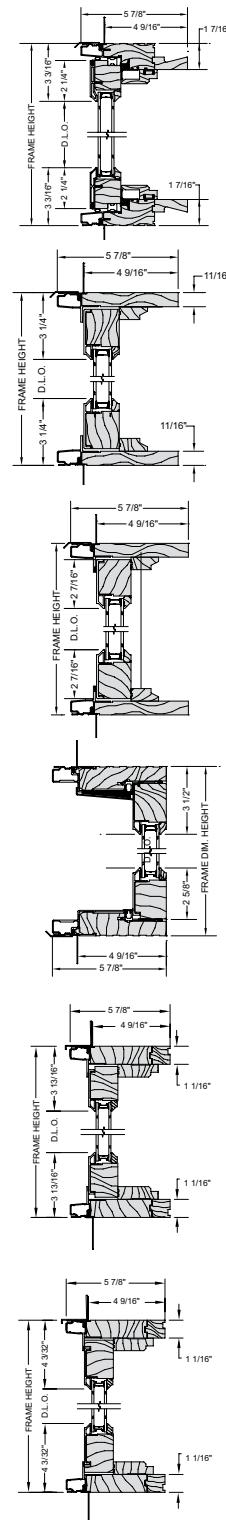
STANDARD SASH SET RADIUS UNIT CROSS SECTION DRAWINGS

- 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.

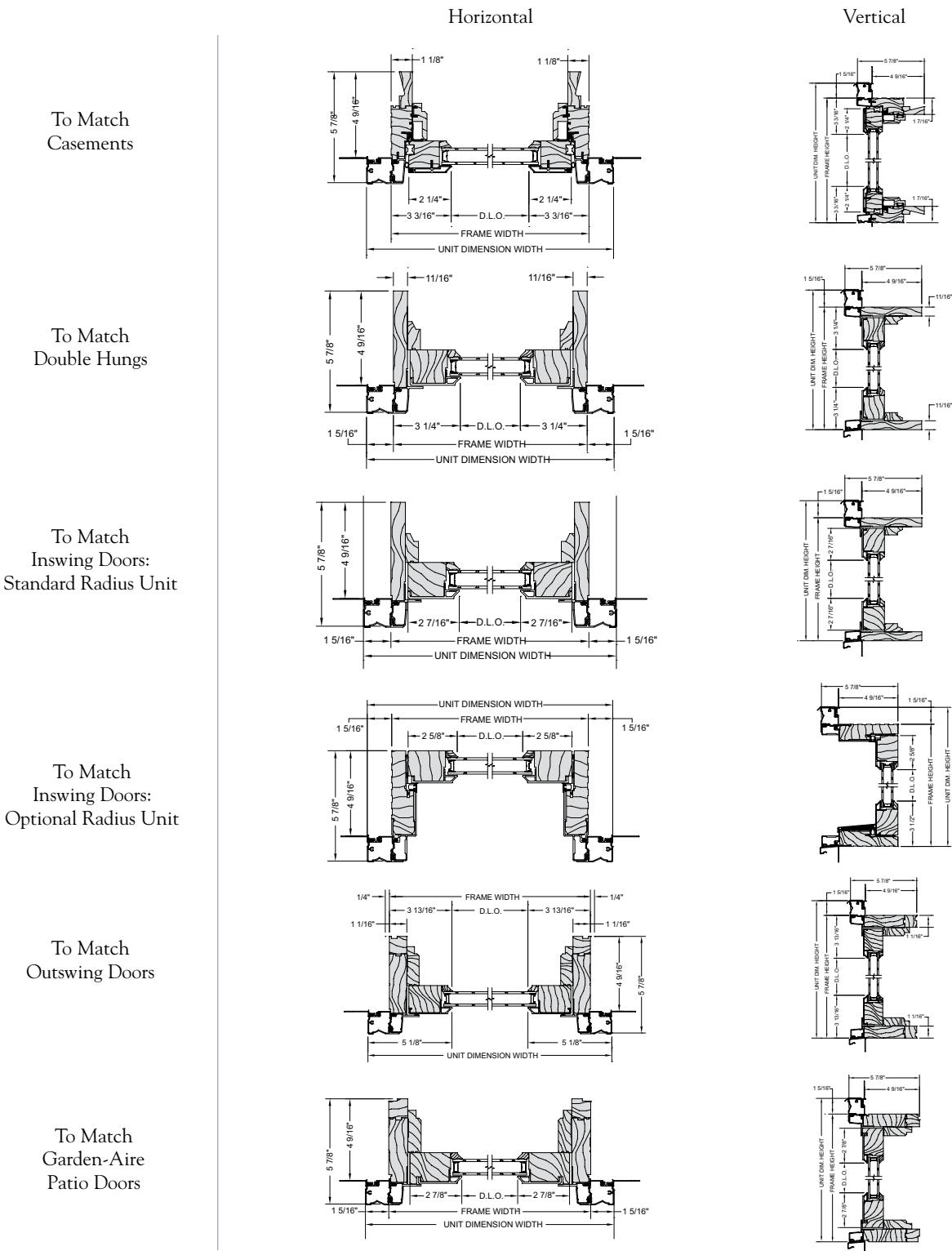
Some units are shown with optional drip cap or nailing fin.

Sash set radius units also available to match Magnum Double Hungs.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

ULTRA SERIES | RADIUS

SASH SET RADIUS UNIT WITH 1-15/16" BRICKMOULD CROSS SECTION DRAWINGS



NOTES:

Drawings are not to scale.

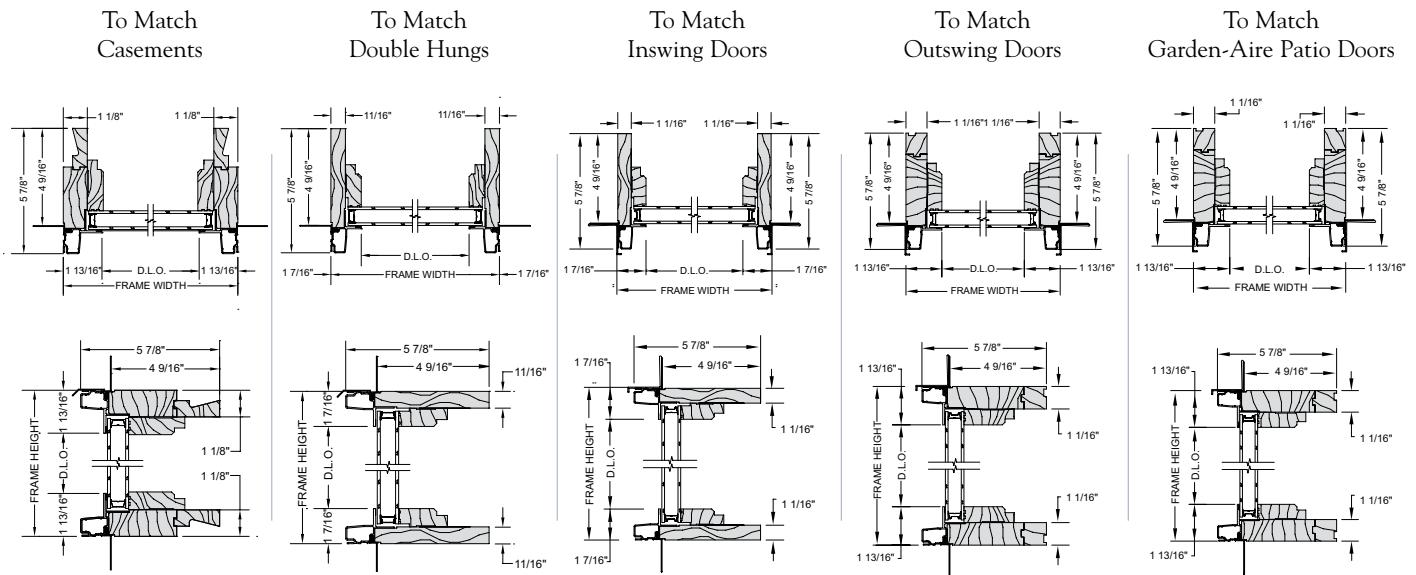
Brickmould is shown factory-applied and includes a PVC brickmould backer. Brickmould may be shipped loose for field application. The PVC brickmould backer cannot be field-applied.

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

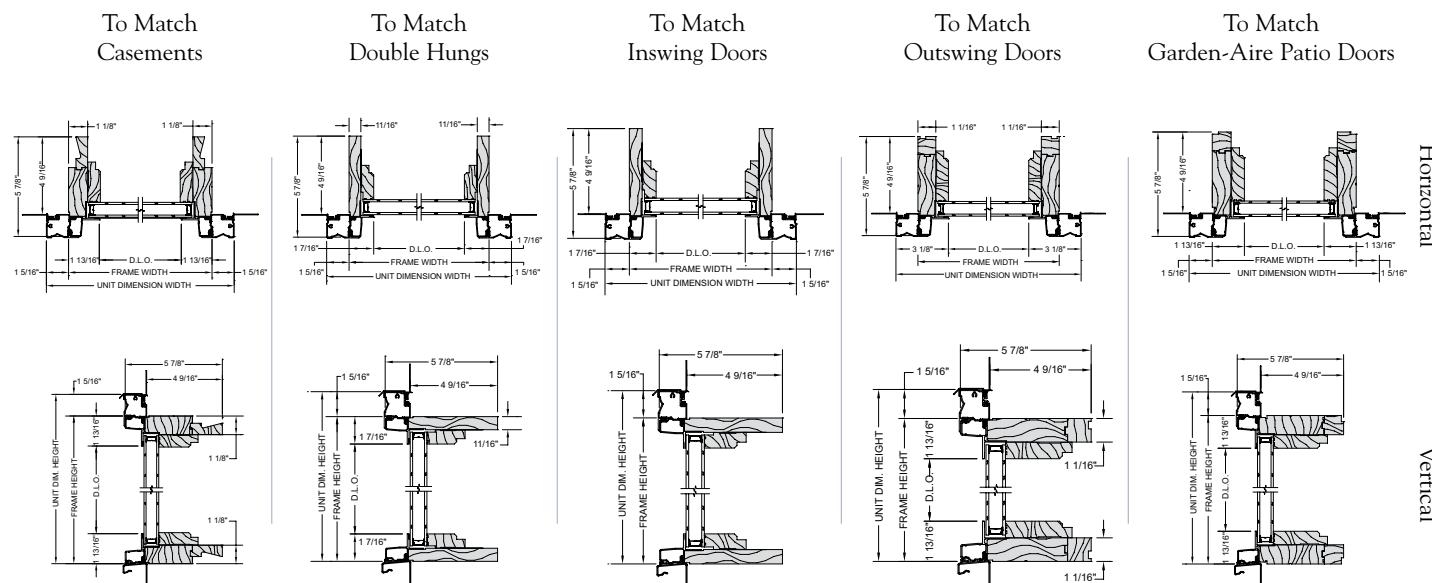
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at 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.

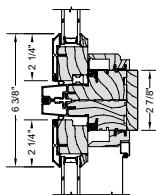
For Ultra accessory or application drawings, see pgs. 176-182.

Additional and the most current drawings are available at www.kolbe-kolbe.com.

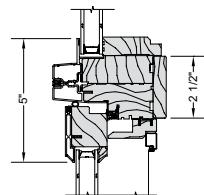
RADIUS UNIT STACKING DETAIL DRAWINGS

Stacked over Crank-Out Casements

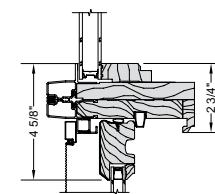
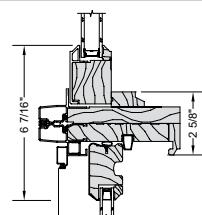
Sash Set



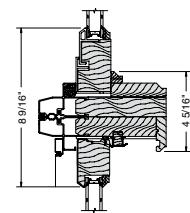
Direct Set



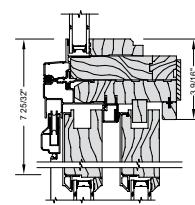
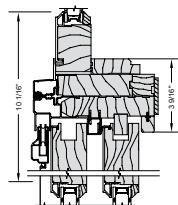
Stacked over Traditional Double Hungs



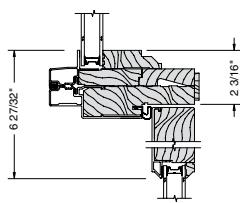
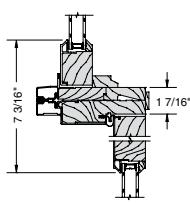
Stacked over Magnum Double Hungs



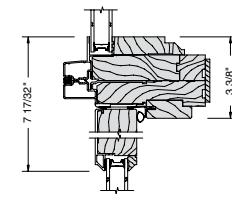
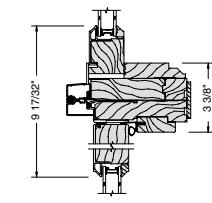
Stacked over Garden-Aire Sliding Patio Doors



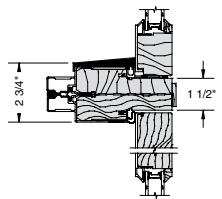
Stacked over Inswing Patio or Inswing Entrance Doors



Stacked over Outswing Entrance Doors



Optional Sash Set



NOTES:

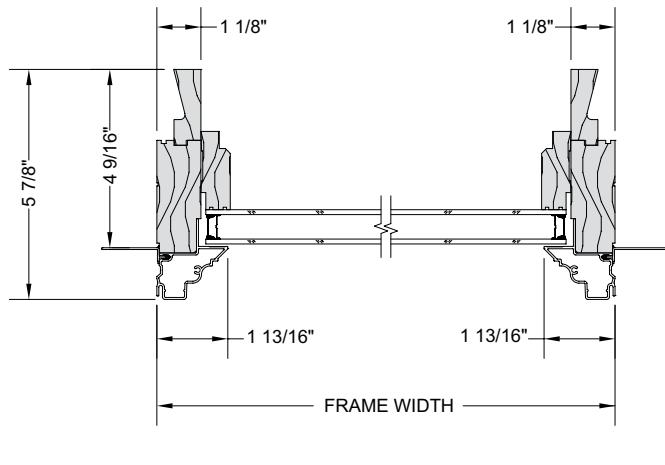
Drawings are not to scale.

More stacking details are available on the Kolbe website at www.kolbe-kolbe.com.

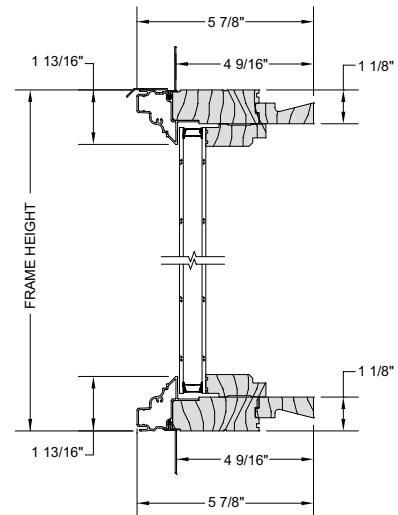
ULTRA SERIES | DIRECT SETS

OGEE DIRECT SET

Horizontal Section

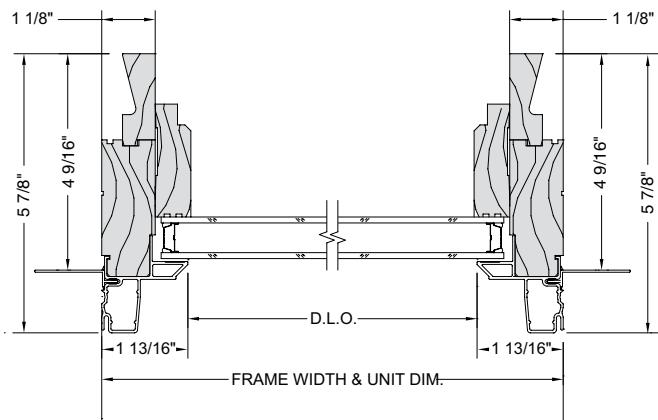


Vertical Section

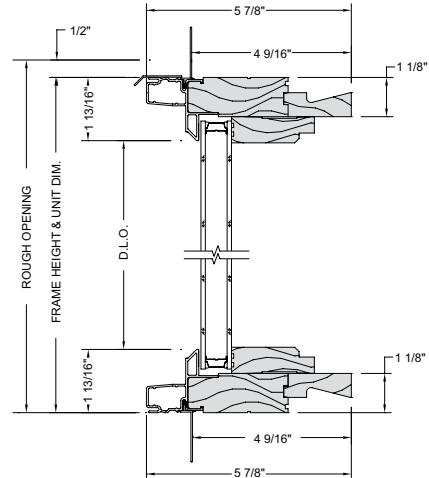


BEVELED DIRECT SET

Horizontal Section

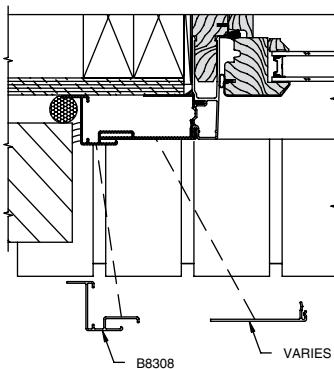


Vertical Section



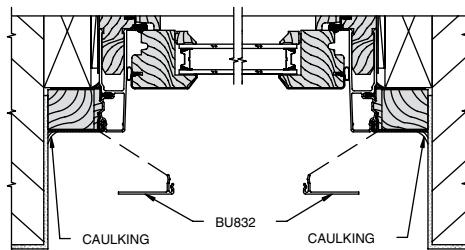
NOTE: Drawings are not to scale.

ULTRA ACCESSORY APPLICATION DETAILS



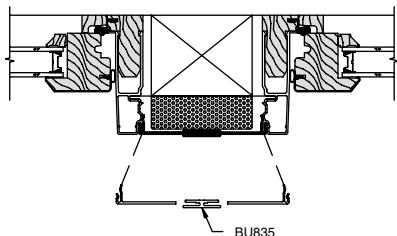
EXPANDER TRIM RECEIVER

Profile B8308 used in combination with any of the frame expanders achieves various casing widths. Field-applied only. Colored to match the unit.



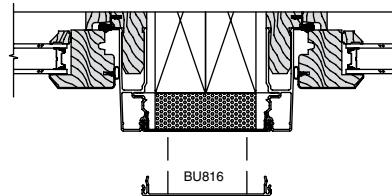
FRAME EXPANDERS

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.



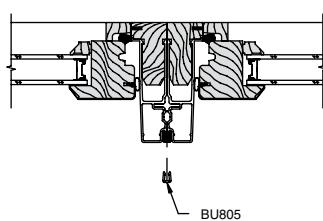
ADJUSTABLE MULL COVERS

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

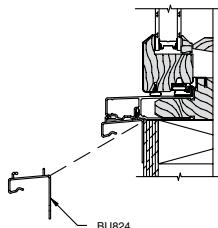


MULL "U" SPLICE

Profile BU805 is used to seal when two units are mulled directly to one another. Colored to match the unit.

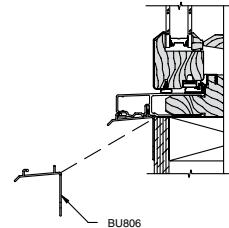
Used for standard spread mull widths from 1/4" to 6" wide. Colored to match the unit.

ULTRA ACCESSORY APPLICATION DETAILS



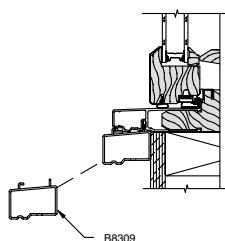
TRADITIONAL SILL NOSING (STANDARD)

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.



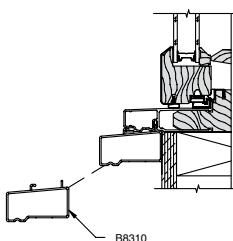
SILL DRIP

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.



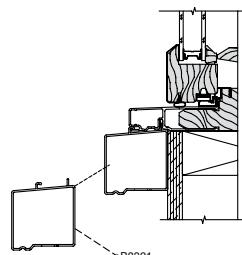
1-5/8" SILL NOSING

Optional Profile BU309 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.



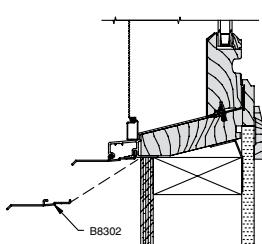
2-1/8" SILL NOSING

Profile B8310 is a standard application to units with backband, ogee casing and bullnose brickmould. Colored to match the unit.



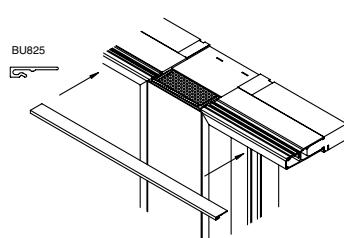
2-1/8" HISTORIC NOSING

Profile B8321 is a standard application to units with historic brickmould. Colored to match the unit.



SILL EXTENDER

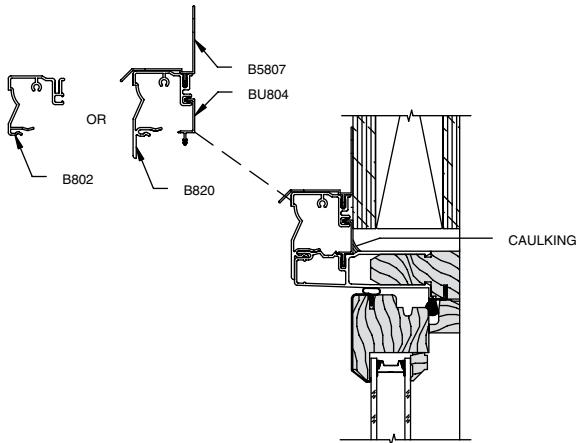
Optional Profile B8302 may be used with double hung and slider units only. Colored to match the unit. Field-applied only.



HEAD & SILL TRIM

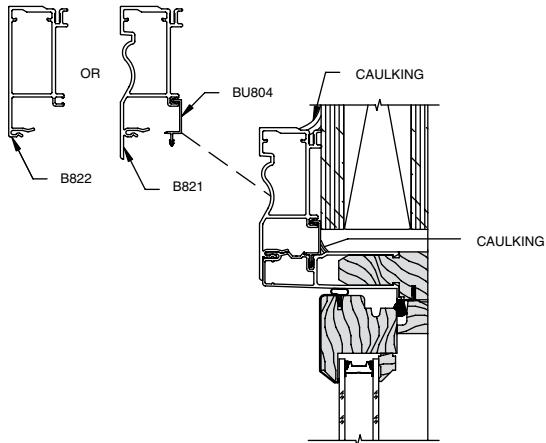
Profile BU825 may be used on spread mulls and stacked units without brickmould. Colored to match the unit.

ULTRA ACCESSORY APPLICATION DETAILS



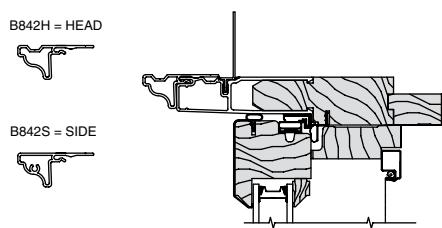
1-15/16" BRICKMOULD

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.



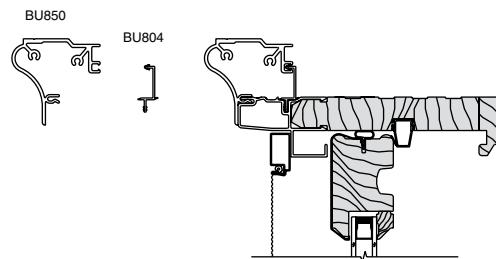
3-1/2" BRICKMOULD OR FLAT CASING

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.



OGEET CASING

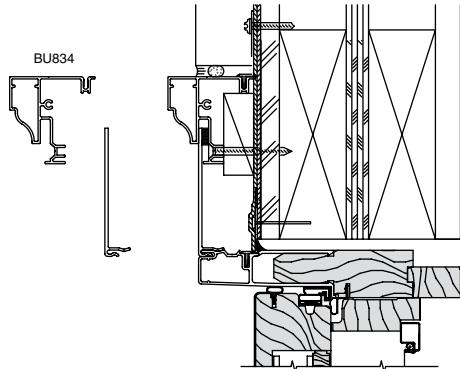
Profile B842H (head)
 Profile B842S (side)
 Ogee casing can be used on any Ultra unit as trim.
 Colored to match the unit. Nailing fin applied.



BULL NOSE BRICKMOULD

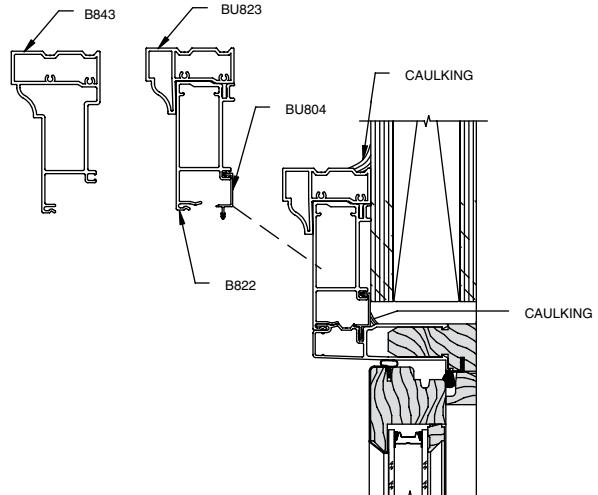
Profile BU865, used in conjunction with Profile BU804, make up the factory-applied bull nose brickmould. Colored to match the unit.

ULTRA ACCESSORY APPLICATION DETAILS



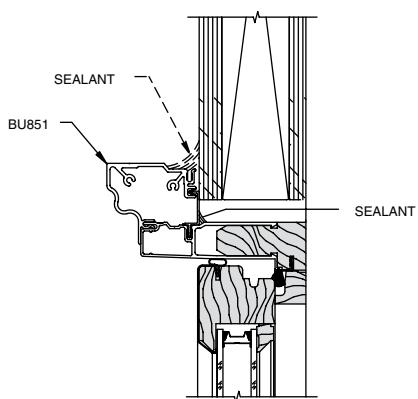
BACKBAND RECEIVER

Profile BU834 used in conjunction with any of the frame expanders achieves various casing widths. Field-applied only. Colored to match the unit.



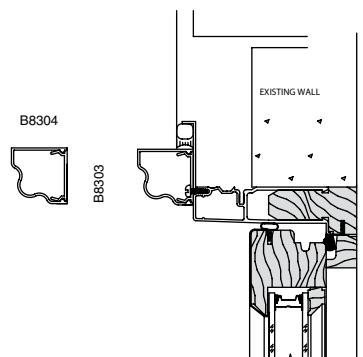
BACKBAND TRIM

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.

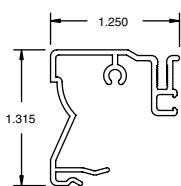


FIELD-APPLIED CASING

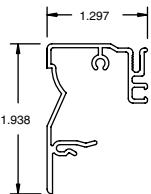
Profile B8304, coupled with Profile B8303, make up the field-applied casing. Colored to match the units. No nailing fin is applied.

ULTRA SERIES | ACCESSORIES

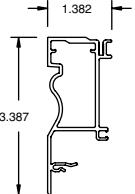
ULTRA ACCESSORY PROFILES



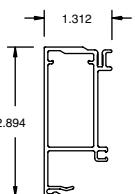
B802
2" Brickmould without Leg
head & side jamb
(all Ultra products)



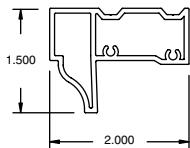
B820
1-15/16" Brickmould with Leg
head & side jamb
(all Ultra products)



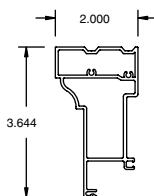
B821
3-1/2" Brickmould with Leg
head & side jamb
(all Ultra products)



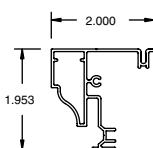
B822
3-1/2" Flat Casing without Leg
head & side jamb
(all Ultra products)



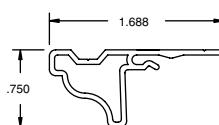
BU823
Backband
(all Ultra products)



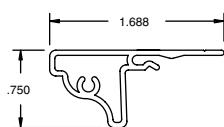
B843
3-1/2" Flat Casing with Backband
(all Ultra products)



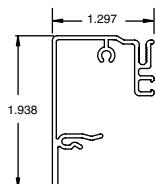
BU834
Receiver Trim Backband Profile
(all Ultra products)



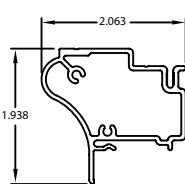
B842H
Ogee Trim - head
(all Ultra products)



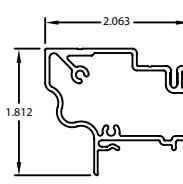
B842S
Ogee Trim - side
(all Ultra products)



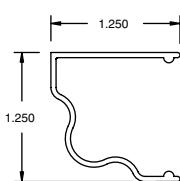
B860
2" Flat Casing
(all Ultra products)



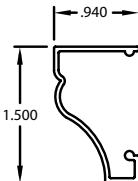
BU865
Bull Nose Casing
(all Ultra products)



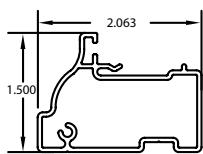
BU866
Historic Trim
(all Ultra products)



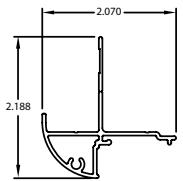
B8304
Chicago Brickmould head & side
(all Ultra products)



BU847
Snap-on Brickmould
(all Ultra products)



BU864
Pavilion Brickmould
(all Ultra products)

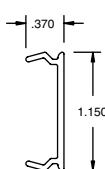


B8329
Stucco Casing
(all Ultra products)

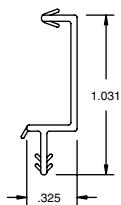
NOTE: Drawings are not to scale.

ULTRA SERIES | ACCESSORIES

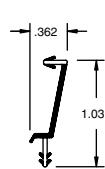
ULTRA ACCESSORY PROFILES



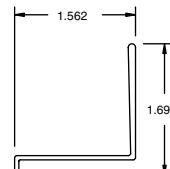
BU8303
Chicago Brickmould head & side clip
(all Ultra products)



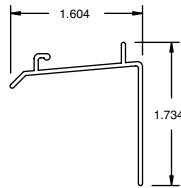
BU804
PVC Trim Holder
(all Ultra products)



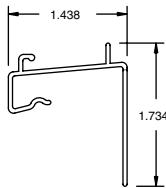
BU844
PVC Trim Holder
(Ultra half-circle radius units)



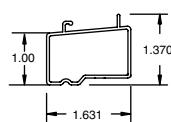
BU827
Radius Nailing Fin with Drip
(Ultra half-circle radius units)



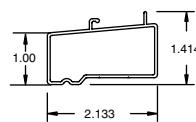
BU806
Sill Drip
(all Ultra products)



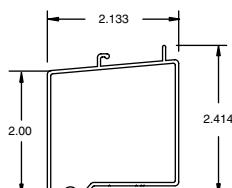
BU824
Traditional Sill Nosing
(all Ultra products)



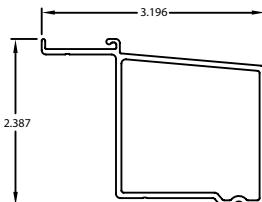
B8309
1-5/8" Projected Sill Nosing
(all Ultra products)



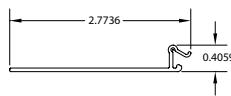
B8310
2-1/8" Projected Sill Nosing
(all Ultra products)



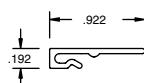
B8321
2-1/8" Historic Nosing
(all Ultra Products)



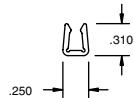
B8330
Stucco Trim Sill Nosing
(all Ultra products)



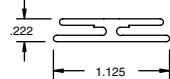
BU839
2-1/2" Sill Extender
(all Ultra products)



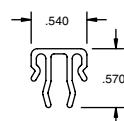
BU825
Head & Sill Trim
(Ultra bow & bay units)



BU805
Mullion & Transom Splice
(all Ultra products)



BU835
1-1/8" Stepped Mull "H" Splice
(all Ultra products)

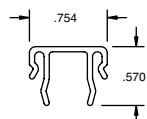


BU817
1/4" Mull Cover
(all Ultra products)

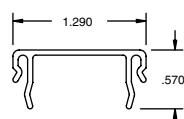
NOTE: Drawings are not to scale.

ULTRA SERIES | ACCESSORIES

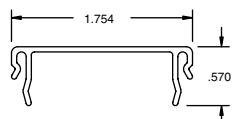
ULTRA ACCESSORY PROFILES



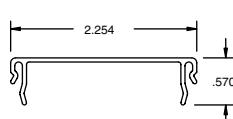
BU813
1/2" Mull Cover
(all Ultra products)



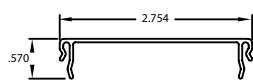
BU818
1" Mull Cover
(all Ultra products)



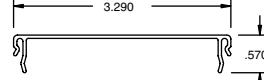
BU814
1-1/2" Mull Cover
(all Ultra products)



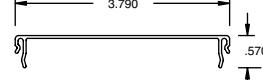
BU815
2" Mull Cover
(all Ultra products)



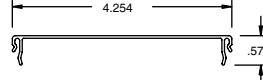
BU875
2.5" Mull Cover
(all Ultra products)



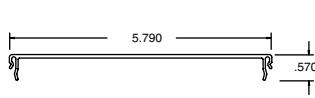
BU819
3" Mull Cover
(all Ultra products)



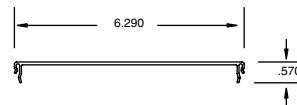
BU829
3-1/2" Mull Cover
(all Ultra products)



BU816
4" Mull Cover
(all Ultra products)



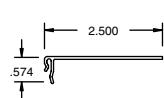
BU861
5-1/2" Mull Cover
(all Ultra products)



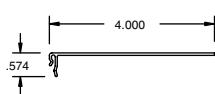
BU852
6" Mull Cover
(all Ultra products)



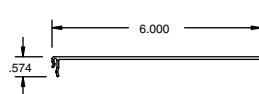
B836
1" Frame Expander
(all Ultra products)



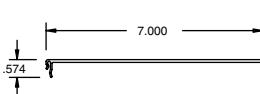
BU837
2-1/2" Frame Expander
(all Ultra products)



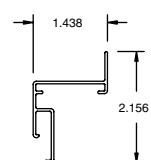
BU832
4" Frame Expander
(all Ultra products)



B831
6" Frame Expander
(all Ultra products)



BU833
7" Frame Expander
(all Ultra products)



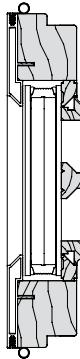
B8308
Wide Flat Receiver
perimeter expander trim
(all Ultra products)

NOTE: Drawings are not to scale.

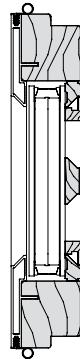


ULTRA SERIES | DIVIDED LITES

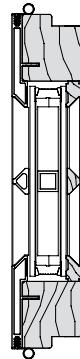
DIVIDED LITE CROSS SECTION DRAWINGS



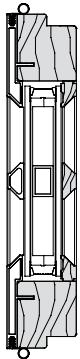
7/8" beveled removable grilles



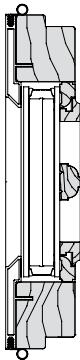
1-1/8" beveled removable grilles



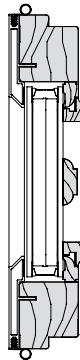
5/8" beveled PDL



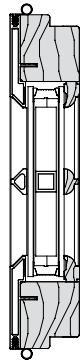
7/8" beveled PDL



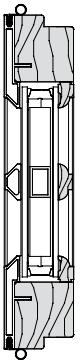
7/8" ovolو removable grilles



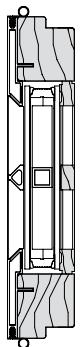
1-1/8" ovolو removable grilles



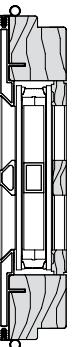
5/8" ovolو PDL



7/8" ovolو PDL



5/8" square PDL



7/8" square PDL

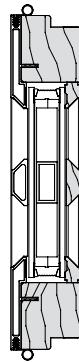
NOTES:

Drawings are not to scale.

Removable grilles are not available with a square profile.

ULTRA SERIES | DIVIDED LITES

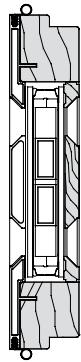
DIVIDED LITE CROSS SECTION DRAWINGS



1-1/8" beveled PDL



1-3/4" beveled PDL



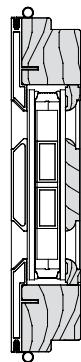
2-1/4" beveled PDL



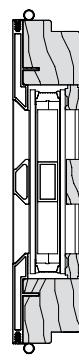
1-1/8" ovolo PDL



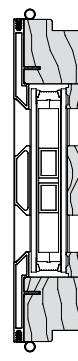
1-3/4" ovolo PDL



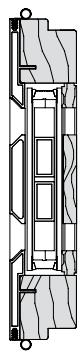
2-1/4" ovolo PDL



1-1/8" square PDL



1-3/4" square PDL



2-1/4" square PDL

NOTE: Drawings are not to scale.



TECHNICAL



TECHNICAL DATA

CLEAR OPENINGS

188

3D MODELS

200

ENERGY PERFORMANCE

202

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), "gress" 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 m²)

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	
	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 (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

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

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 Opg.	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 Opg.	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 Opg.	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 Opg.	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. 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. 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	67.75
4-12068	16.45	30.39	30-1/8"	55-21/32"	78-5/8"	49.64	30.39	80.34
4-16068	23.00	43.49	42-1/8"	79-21/32"	78-5/8"	72.12	43.49	107.82
4-10080	16.18	29.34	24-5/8"	44-21/32"	94-5/8"	48.67	29.34	80.90
4-12080	19.80	36.57	30-1/8"	55-21/32"	94-5/8"	61.42	36.57	95.94
4-16080	27.68	52.34	42-1/8"	79-21/32"	94-5/8"	89.23	52.34	128.75

TERRASPIN 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 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 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 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

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°

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°

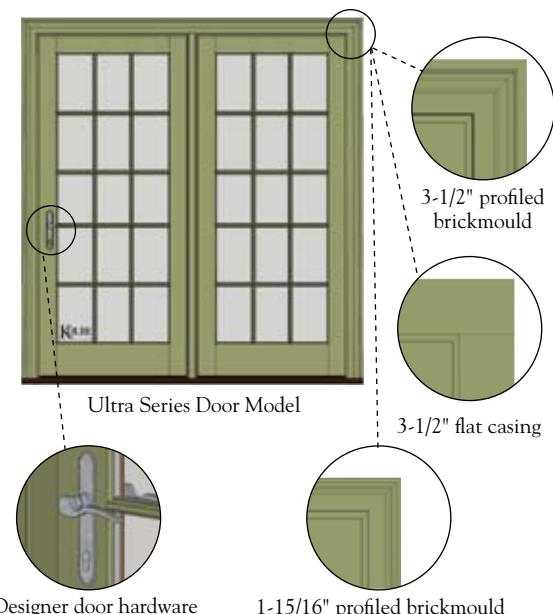
NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

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.

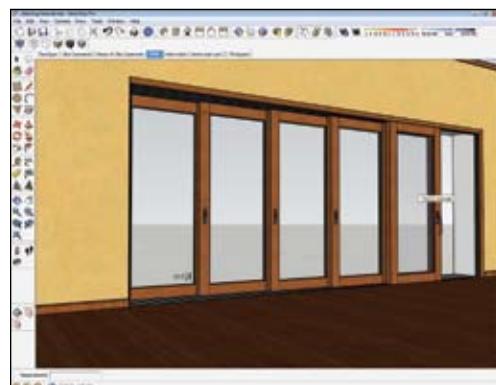
ULTRA SERIES SKETCHUP MODEL FEATURES

- 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



TERRASPAÑ® 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



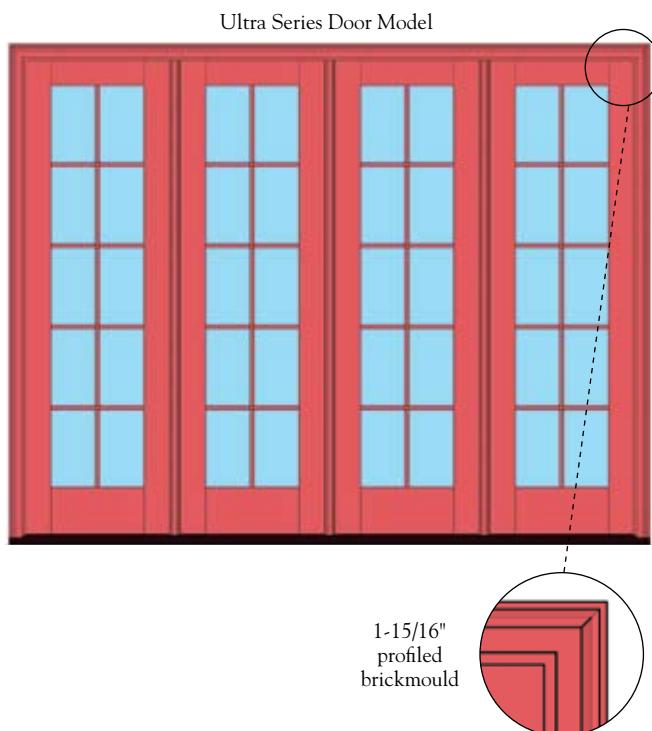
Step 1: click the first door panel to activate the door
 Step 2: click the panel again to open the first panel

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
In the Architect Library or on product pages, look for the SketchUp  or Revit icons
- seek.autodesk.com
- CADdetails.com

Another resource for Kolbe SketchUp Models:

- sketchup.google.com/3dwarehouse

ENERGY PERFORMANCE DATA

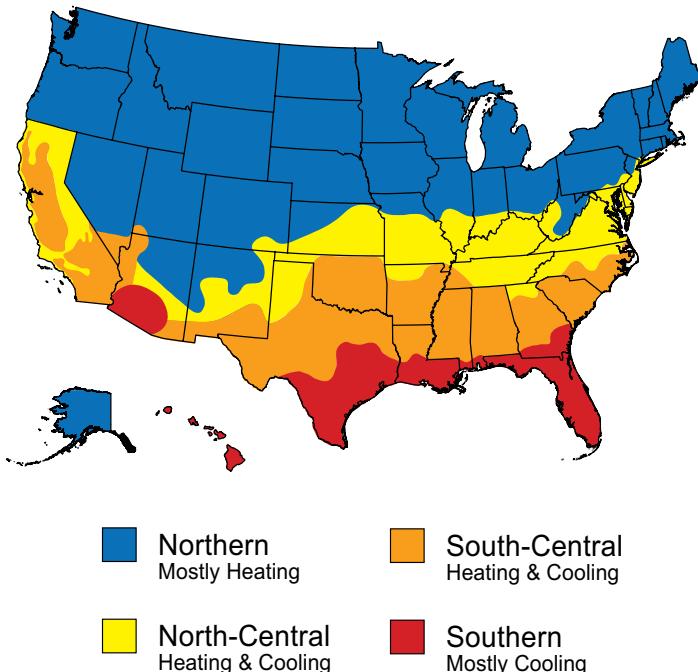
ENERGY STAR® – UNITED STATES



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.



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 or contact your local Kolbe dealer.

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**	≤ 0.30	Any
Northern	$= 0.31$	≥ 0.35
Northern	$= 0.32$	≥ 0.40
North-Central	≤ 0.32	≤ 0.40
South-Central	≤ 0.35	≤ 0.30
Southern	≤ 0.60	≤ 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[†]

Glazing	U-Factor	SHGC
Opaque	≤ 0.21	No rating
$\leq 1/2\text{-Lite}$	≤ 0.27	≤ 0.30
$> 1/2\text{-Lite}$	≤ 0.32	≤ 0.30

[†] Criteria shown applies to both sliding and hinged doors and in all four climate zones.

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.



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.

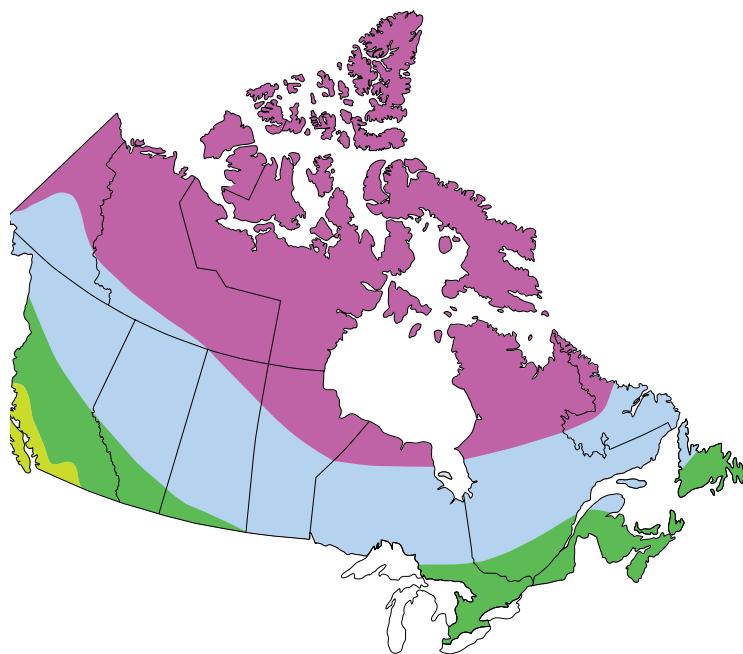
ENERGY STAR - Canada Qualification Criteria for Doors[†] after October 1, 2010

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



█ Zone A
Southwestern Canada/
British Columbia

█ Zone C
Central Canada

█ Zone B
Southern Canada

█ Zone D
Northern Canada

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 or contact your local Kolbe dealer.



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