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RELIABILITY *for real life®*

REAL LIFE WARRANTY

We build our dualpane, tripane, LowE and LowE-R with Argon insulating glass units to ensure lasting performance. With energy efficient designs approved by ENERGY STAR® and an industry leading warranty from JELD-WEN, you can be sure you're making a good investment in your home. Our wide range of windows and doors also carry their own warranty.

For details on your coverage refer to jeld-wen.ca or check your JELD-WEN Windows and Doors — Willmar Collection Warranty (01C-701A).



THE POWER OF CHOICE

This guide outlines the advantages of our various glazing options and provides basic information about sizing windows and doors. It is meant as an aid in the selection of appropriate windows and doors for your new building or remodeling project. ■



PERFORMANCE RESULTS

Total Window Performance

Total window performance measures the centre of glass, the largest area for heat gain and loss, as well as the edge of the glass and the window's frame to provide an overall u-factor, solar heat gain coefficient and condensation resistance rating.

Our all-season LowE argon, available in dualpane and tripane, combined with Super Spacer for superior edge performance, and our low conductivity window designs provide improved comfort, condensation resistance and energy savings.

ES7000	Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
Casement	.41	.52	45	.29	.28	60	.27	.28	60	.31	.43	56	.29	.43	58
Fixed	.43	.61	44	.30	.33	56	.27	.33	59	.31	.51	55	.29	.51	57
Picture	.45	.68	45	.30	.36	57	.27	.36	59	.30	.56	55	.30	.56	58
Awning	.41	.52	47	.29	.28	58	.27	.28	60	.31	.43	54	.29	.43	57
ES7000	Tripane			Tripane LowE			Tripane LowE w/ Argon			Tripane 2LowE			Tripane 2LowE w/ Argon		
	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
Casement	.29	.48	60	.24	.26	67	.22	.26	69	.20	.24	74	.18	.24	77
Fixed	.30	.56	60	.23	.30	67	.21	.30	69	.19	.28	73	.17	.28	76
Picture	.31	.62	60	.23	.33	67	.21	.33	69	.18	.31	74	.16	.31	76
Awning	.29	.48	60	.23	.26	68	.22	.26	69	.19	.24	73	.18	.24	76
ES7000				Tripane LowE-R			Tripane LowE-R w/ Argon			Tripane 2LowE-R			Tripane 2LowE-R w/ Argon		
				U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
Casement				.24	.40	66	.23	.40	68	.21	.38	72	.19	.38	74
Fixed				.24	.47	66	.23	.47	68	.20	.44	71	.18	.45	73
Picture				.24	.52	66	.22	.52	68	.19	.49	72	.17	.49	74
Awning				.24	.40	67	.23	.40	68	.21	.38	71	.19	.38	74

ES3500	Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
Slider	.46	.63	44	.32	.34	55	.29	.33	57	.33	.52	53	.31	.52	55
Single Hung	.46	.65	43	.32	.36	54	.29	.36	56	.33	.54	53	.31	.54	55
Picture	.46	.68	44	.31	.36	56	.28	.36	59	.33	.56	55	.30	.56	57

NOTE: U-factors are an imperial measurement (BTU/hr ft² O°).

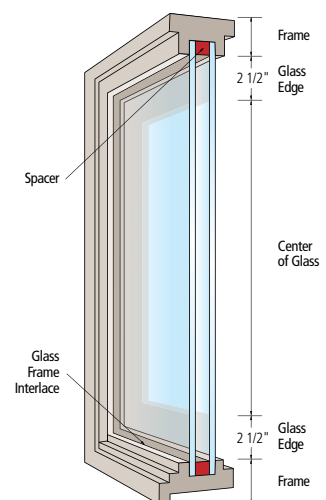
To convert to metric (W/m²K - watt per sq. metre kelvin) multiply by 5.678 (i.e. A .35 imperial U-factor converts to 2.00 metric U-value).

Numbers are total window performance without argon gas. All windows shipped into high elevation areas require capillary tubes and will not be argon gas filled.

Total Window U-factor – Measures the rate of heat transfer during winter nighttime conditions. (0° C outside, 22° C inside). The lower the u-factor the slower the heat transfer.

Total Window Solar Heat Gain Coefficient (SHGC) – Measures the fraction of incident solar heat transferred through a window - centre of glass, edge and frame. The lower the number, the better the window is at blocking heat.

Condensation Resistance (CR) – Measures how well a product will resist the formation of condensation and is expressed as a number between 1 and 100. The higher this number is the better the window will resist the formation of condensation. This rating is useful for the comparing of window products and is not meant to indicate when the condensation will actually occur.



CSA A440 Industry Test Results

The industry standard tests can be used to specify the appropriate window based on the building requirements and climate conditions. Generally speaking, the higher the numbers, the better the window performance. Choose a rating level that satisfies the environmental conditions of the home. Determine if any of the voluntary performance criteria are required for your windows and check to confirm that they meet the required standards.

ES7000	Air Leakage	Water Tightness	Wind Load	Air Infiltration	Forced Entry
Casement	A3	B5	C4	0.33	F10
Fixed	Fixed	B5	C5	0.05	F20
Picture	Fixed	B5	C5	0.05	F20
Awning	A3	B5	C5	0.17	F20

ES3500	Air Leakage	Water Tightness	Wind Load	Air Infiltration
Slider	A3	B5	C4	0.33
Single Hung	Fixed	B5	C5	0.05
Picture	Fixed	B5	C5	0.05

Centre of Glass – Performance Number

GLASS TYPE	R-value	SHGC	Visible Light	UV Blocked	Reflectance (out)
Dual	2.08	0.78	0.82	42%	15%
Dual LowE	3.33	0.41	0.72	84%	11%
Dual LowE w/ Argon	4.00	0.41	0.72	84%	11%
Dual LowE-R	3.13	0.65	0.79	76%	14%
Dual LowE-R w/ Argon	3.57	0.65	0.79	76%	14%
Tripane	3.23	0.70	0.76	51%	21%
Tripane LowE	4.55	0.38	0.66	86%	15%
Tripane LowE w/ Argon	5.26	0.38	0.66	86%	15%
Tripane LowE-R	4.35	0.60	0.72	79%	20%
Tripane LowE-R w/ Argon	5.00	0.60	0.72	79%	20%
Tripane 2LowE	6.25	0.35	0.58	94%	13%
Tripane 2LowE w/ Argon	7.69	0.35	0.58	94%	13%
Tripane 2LowE-R	5.56	0.57	0.69	90%	19%
Tripane 2LowE-R w/ Argon	7.14	0.57	0.69	90%	19%

R-value – Measures resistance of heat transfer, or insulative properties. The higher the r-value the better the insulating effect.

Solar Heat Gain Coefficient (SHGC) – The amount of solar radiation that enters a building as heat through a glazing. The lower the number, the better the glazing is at preventing solar heat gain.

Visible Light – % of visible light transmitted through glazing. The higher the %, the more light is transmitted.

UV Blocked – % of ultraviolet radiation blocked by glazing (300-380nm). The higher the %, the more UV radiation is blocked.

Glass Reflectance – Measured as a % of visible light, used to compare reflectance (such as when looking out from a lit room through windows at night).

U-factor / U-value – The U-factor (imperial), or U-value (metric) indicates the rate of heat transfer during winter nighttime conditions. The lower the U-factor the slower it transfers heat, resulting in a more comfortable living space and energy savings. Our tripane LowE argon windows provide our lowest U-factors. They also provide protection against solar heat gain and damaging ultraviolet light.

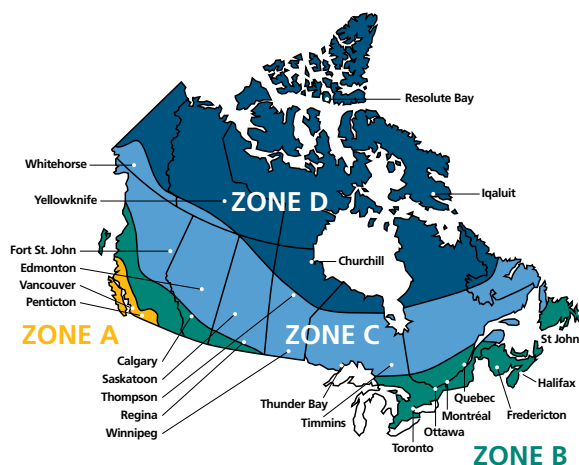
Energy Rating – The Energy Rating (ER) system is calculated using a formula that balances a product's U-factor with its potential solar gain and air tightness for operable and fixed windows. The higher the number, the more ability the window has to gather heat from the sun.

Qualifying Criteria

For ENERGY STAR®, windows are qualified for their energy efficiency by either a U-value or Energy Rating (ER) for each of the four Canadian zones. The better of the two criteria is used to determine the zone rating for the window.

Zone	Maximum U-value	or	Minimum Energy Rating (ER) Values (Max. U-value 2.00 W/m²·K)	
	U-value		Operable Windows	Fixed Windows
A	0.35	or	17	27
B	0.32	or	21	31
C	0.28	or	25	35
D	0.25	or	29	39

The above table outlines the U-value and Energy Rating required to be ENERGY STAR® qualified in each zone. Locate the zone you live in and select a product that is ENERGY STAR® qualified for that zone. Many Willmar® Collection windows qualify for more than one zone. The more zones a product qualifies for, the more energy efficient that window will be.



Glazing Legend

D	Dualpane	LE	LowE	2LE	2 LowE
T	Tripane	LE-R	LowE-R	2LE-R	2 LowE-R
A	Argon				

ENERGY STAR® Qualifying Vinyl Windows

ES7000	Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
Casement	DLEA	0.27	1.53	21	C	U
Fixed	DLEA	0.27	1.53	22	C	U
Picture	DLEA	0.27	1.53	22	C	U
Awning	DLEA	0.27	1.53	22	C	U
Casement	DLE-RA	0.29	1.65	28	C	E-R
Fixed	DLE-RA	0.29	1.65	33	B	U/E-R
Picture	DLE-RA	0.30	1.70	35	C	E-R
Awning	DLE-RA	0.29	1.65	29	D	E-R
Casement	T	0.29	1.65	30	D	E-R
Fixed	T	0.30	1.70	30	B	U
Picture	T	0.31	1.76	29	B	U
Awning	T	0.29	1.65	31	D	E-R
Casement	TLEA	0.22	1.25	27	D	U
Fixed	TLEA	0.21	1.19	27	D	U
Picture	TLEA	0.21	1.19	27	D	U
Awning	TLEA	0.22	1.25	26	D	U
Casement	TLE-RA	0.23	1.31	34	D	U/E-R
Fixed	TLE-RA	0.23	1.31	38	D	U
Picture	TLE-RA	0.22	1.25	42	D	U/E-R
Awning	TLE-RA	0.23	1.31	34	D	U/E-R
Casement	T2LEA	0.18	1.02	30	D	U/E-R
Fixed	T2LEA	0.17	0.97	34	D	U
Picture	T2LEA	0.16	0.91	35	D	U
Awning	T2LEA	0.18	1.02	32	D	U/E-R
Casement	T2LE-RA	0.19	1.08	38	D	U/E-R
Fixed	T2LE-RA	0.18	1.02	43	D	U/E-R
Picture	T2LE-RA	0.17	0.97	47	D	U/E-R
Awning	T2LE-RA	0.19	1.08	38	D	U/E-R

ES3500	Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
Slider	DLEA	0.29	1.65	22	B	U/E-R
Single Hung	DLEA	0.29	1.65	24	B	U/E-R
Picture	DLEA	0.28	1.59	26	C	U/E-R
Slider	DLE-RA	0.31	1.76	31	D	E-R
Single Hung	DLE-RA	0.31	1.76	32	D	E-R
Picture	DLE-RA	0.30	1.70	35	C	E-R

Qualifying Vinyl Windows w/Internal Grilles

ES7000	Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
Casement	DLEA	0.29	1.60	18	B	U
Fixed	DLEA	0.30	1.70	20	B	U
Picture	DLEA	0.30	1.70	21	B	U
Awning	DLEA	0.29	1.60	18	B	U
Casement	DLE-RA	0.30	1.70	25	C	E-R
Fixed	DLE-RA	0.30	1.70	29	B	U
Picture	DLE-RA	0.31	1.80	31	B	U/E-R
Awning	DLE-RA	0.30	1.70	25	C	E-R
Casement	T	0.30	1.70	27	C	E-R
Fixed	T	0.30	1.70	32	B	U/E-R
Picture	T	0.31	1.80	34	B	U/E-R
Awning	T	0.29	1.60	28	C	E-R
Casement	TLEA	0.23	1.30	24	D	U
Fixed	TLEA	0.23	1.30	27	D	U
Picture	TLEA	0.23	1.30	29	D	U
Awning	TLEA	0.23	1.30	25	D	U
Casement	TLE-RA	0.24	1.40	30	D	U/E-R
Fixed	TLE-RA	0.23	1.30	36	D	U
Picture	TLE-RA	0.23	1.30	38	D	U
Awning	TLE-RA	0.23	1.30	32	D	U/E-R
Casement	T2LEA	0.20	1.10	27	D	U
Fixed	T2LEA	0.20	1.10	30	D	U
Picture	T2LEA	0.19	1.10	32	D	U
Awning	T2LEA	0.20	1.10	27	D	U
Casement	T2LE-RA	0.20	1.10	34	D	U/E-R
Fixed	T2LE-RA	0.19	1.10	39	D	U/E-R
Picture	T2LE-RA	0.19	1.10	42	D	U/E-R
Awning	T2LE-RA	0.20	1.10	35	D	U/E-R

ES3500	Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
Slider	DLEA	0.29	1.60	21	B	U/E-R
Single Hung	DLEA	0.29	1.60	22	B	U/E-R
Picture	DLEA	0.28	1.60	24	C	U
Slider	DLE-RA	0.31	1.80	28	C	E-R
Single Hung	DLE-RA	0.31	1.80	29	D	E-R
Picture	DLE-RA	0.30	1.70	32	D	E-R

The above windows listed are based on our standard glazing configurations utilizing our all-seasons LowE argon.

For a more comprehensive search of all JELD-WEN ENERGY STAR® qualified windows, go online at:

<http://oee.nrcan.gc.ca/energystar/english/consumers/windows-search.cfm>

INSULATING GLASS OPTIONS

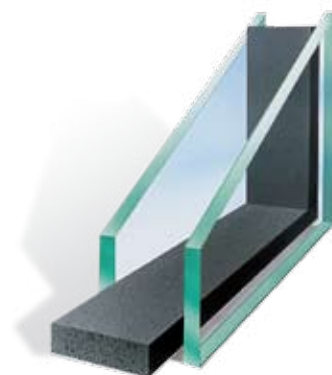
The Willmar Collection of windows offers insulating glass options that respond to different kinds of environmental conditions, regardless of your home's location or architecture.

Our insulating glass is available in dualpane (two glass panels separated by a sealed airspace) and tripane (three glass panels separated by two sealed airspaces). Tripane are especially appropriate for extreme climates since they provide additional glass and airspace for improved insulation. Note that some window and door products are not available with tripane due to functional limitations.



Edgetech Super Spacer®

Working in tandem with JELD-WEN window technology, Edgetech Super Spacer® creates a full seal of protection between each pane of glass, ensuring more efficient heating and cooling throughout the seasons. Super Spacer's no-metal formula provides incredible thermal protection and reduced condensation allowing for a more comfortable humidity level in your home.



JELD-WEN adds LowE-R

Improved ENERGY STAR® performance

JELD-WEN Willmar Collection introduces LowE-R, a great choice when you need to boost your ENERGY STAR® performance for vinyl slider and single hung windows using the Energy Rating (ER) compliance path.

LowE-R combines a low u-factor (or high r-value) to reduce heat transfer and a high solar heat gain coefficient to capture free energy from the sun. Our existing LowE combines a low u-factor with a low solar heat gain coefficient making it ideal for areas where you want to shield heat from entering your home.

LowE with Argon

An all-seasons solution

Whether it's escaping the cold of winter or the heat of summer, JELD-WEN Willmar Collection has the right LowE for your windows. This intelligent coating on the glass, kept inside the airspace, is formulated to reduce heat loss in the winter and resist heat gain in the summer – resulting in a more constant temperature in your home year-round, not to mention reduced heating and cooling bills. All our LowE windows come standard with argon gas for added thermal efficiency.

STARTING OUT SMART

Windows are Ordered Using Metric Sizing

Metric sizing has been used by Canadian window manufacturers for many years and is easily converted to imperial measurement using the following formula:

$$\frac{\text{mm}}{25.4} = \text{inches}$$

i.e. $\frac{600 \text{ mm}}{25.4} = 23.622 \text{ or } 23 \frac{5}{8}"$

By simply adding up your box widths and heights and dividing by 25.4 you can arrive at your overall outside frame measurement (OSM). Add $\frac{7}{8}"$ for your rough opening (R.O.). Once you determine the size of window required, the OSM frame is converted to metric.

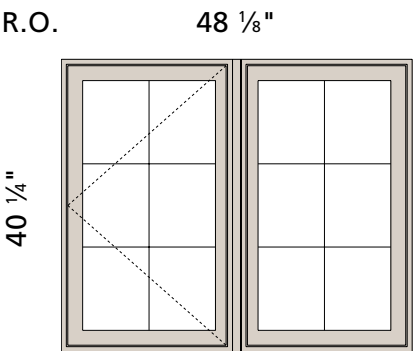


What is R.O.?

R.O. or rough opening is the framed opening required to install the window. The R.O. is approximately $\frac{7}{8}"$ larger than the outside measurement of the window frame. This leaves a $\frac{7}{16}"$ space around the entire window.

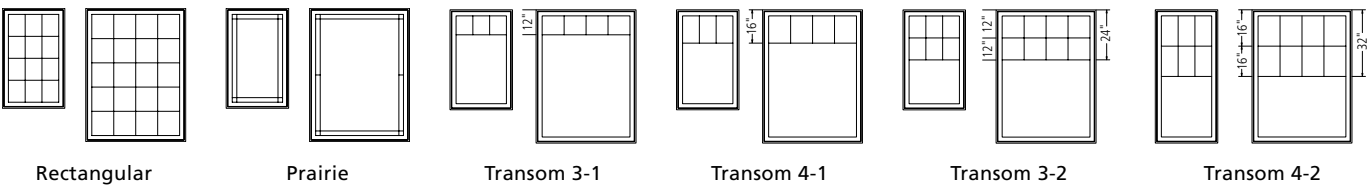
What is OSM Frame Measurement?

OSM frame is the outside measurement of the window frame. This measurement is required when measuring for a full replacement window unit.



Standard Grille Patterns

Patterns available include standard Rectangular, Prairie and Transom, or a custom pattern of your choice.



NOTE: Prairie grille pattern windows taller or wider than 56" receive an additional grille bar.

Window Measuring Overview

Before you select your windows, take a few measurements to ensure the proper fit.

The four basic steps

1. Determine if the existing window frames are square, level and plumb. If they are not, contact a professional to provide some assistance.

Square: Measure the diagonals of the window frame.

Level and plumb: Place a level against the window opening jambs and determine if it is level horizontally and plumb. (See Fig. 1) The window should not be more than $\frac{1}{8}$ " out-of-level or plumb.

2. Take three measurements for both height and width (See Fig. 2)
3. Report the smallest measurement when ordering.
All three measurements should be within $\frac{1}{8}$ ". If they are not, contact a professional to provide some assistance.
4. Provide a jamb width measurement.

Getting the measurement right

To ensure your new windows are weathertight, it's crucial to obtain the correct measurements. Therefore, you may want to consider professional assistance.

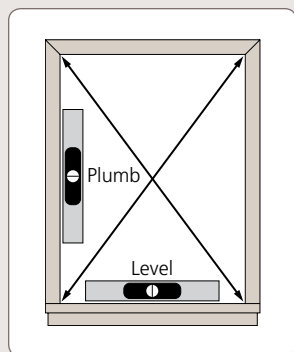


Fig. 1

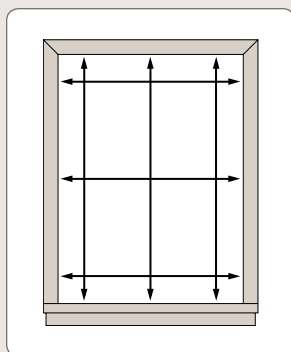


Fig. 2

NOTE: Always report measurements width by height.

Full replacement of existing windows

- From the inside, remove the casing and measure width and height from the outside of the window frame, 6" from the corners and at the centre. This is your outside frame measurement, or OSM frame.
- From the outside, measure the width (brickmould to brickmould) and height (brickmould to sill) of the outside of the windows, 6" from the corners and at the centre. This is your outside brickmould measure measurement, or OSM brickmould.

Report the smallest measurements here:

OSM frame measurement: width _____ height _____

OSM brickmould measurement: width _____ height _____
jamb width _____

R.O. measurement: width _____ height _____
(Add $\frac{7}{8}$ " to OSM width and height.)

Box unit replacement of existing windows

- Measure width and height from the inside of the window frame (where the existing window sash are located), 6" from the corners and at the centre. This is your inside frame measurement, or ISM frame.

Report the smallest measurements here:

ISM frame measurement: width _____ height _____

Door Measuring Overview

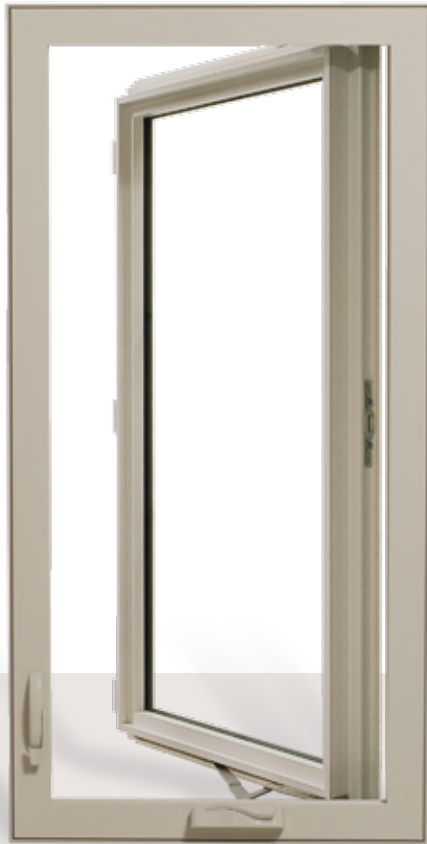
- Remove the interior casing and measure the height and width of the existing door frame.
- Measure the door slab.
- Measure the thickness of the wall to determine the jamb width needed.
- Determine the door swing you need. Door swing refers to the swing of the door based on the location of the hinges, viewed from the outside. (See page 29)

Report the measurements here:

Door frame measurement: width _____ height _____

Door slab measurement: width _____ height _____
jamb width _____
Swing _____

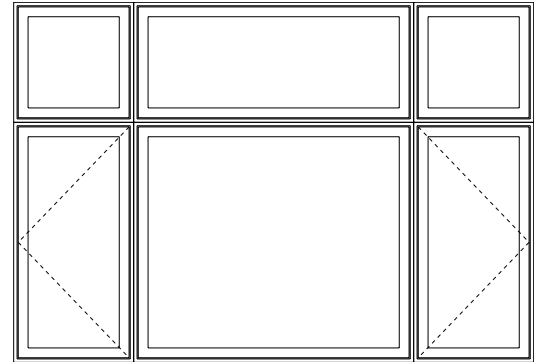
Willmar® Collection – Vinyl ES7000 (7E)



Our ES7000 vinyl casement windows open wide and outward like a door. They are easy to clean, provide good air circulation and close tightly against harsh weather. For smooth and secure operation, Truth® Encore® hardware is sealed to the vinyl frame to minimize air leakage and infiltration.

Various combinations can be specified using casement windows with fixed and picture windows. Our fixed windows have identical glass sitalines as our casement windows. Picture windows provide a larger glass area compared to fixed windows because the insulating glass unit is directly glazed to the frame.

Unique combinations can also be created by mulling and stacking individual single boxes.



ES7000 Casement Windows Sizing Chart

Sizing Chart Legend

- R.O. Rough Opening
- E Meets egress with standard hinge
- E* Requires egress hinge to meet egress

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"										
	16 5/8"		■	■				■		■	■
	20 1/2"		■	■	■			■		■	■
	24 1/2"		■	■	■	■		■		■	■
	28 3/8"		■	■	■	■	■	■		■	■
	30 3/8"		■	■	■	■	■ E*	■ ■ E*		■	■
	32 3/8"		■	■	■	■	■ E*	■ ■ E	■ E	■	■
	36 1/4"		■	■	■	■ E*	■ E	■ ■ E	■ E	■	■
	40 1/4"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	48 1/8"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	56"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	59 7/8"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	63 7/8"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	71 3/4"		■	■	■ E*	■ E	■ E	■ ■ E	■ E	■	■
	79 5/8"										
	83 1/2"										
	95 3/8"										

Total Window Performance

Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.41	.52	45	.29	.28	60	.27	.28	60	.31	.43	56	.29	.43	58
Tripane			Tripane LowE			Tripane LowE w/ Argon			Tripane 2LowE			Tripane 2LowE w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.29	.48	60	.24	.26	67	.22	.26	69	.20	.24	74	.18	.24	77
			Tripane LowE-R			Tripane LowE-R w/ Argon			Tripane 2LowE-R			Tripane 2LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
			.24	.40	66	.23	.40	68	.21	.38	72	.19	.38	74

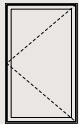
CASEMENT WINDOWS

Standard Features

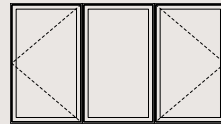
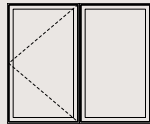
- Available in White or Desert Sand
- 3¼" frame with integral nailing fin
- 2¼" jamb depth
- Dualpane
- Insulating clear glazing
- Truth® Encore® hardware with dual arm operator and folding/nesting handle available in White or Desert Sand
- Multi-point locking system
- Fibreglass mesh screen with White or Desert Sand frame colour

Optional Features

- Full exterior and exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black (White interior)
- Brickmould with sill nosing available in 1⅝", 2" and 3½"
- Additional frame options include 3¼" extender, 1¼" J-trim, exterior casing, U-channel, drip edge, and sill expander
- Tripane
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- Hardware options include egress, motorized operator, restrictor hinge, and Coastal-Stainless Steel hinge finish
- Insulating Glass Unit (IGU) Grilles are available ⅝" wide or ⅜" narrow (see page 6 for grille patterns)
- SDL (Simulated Divided Lites) are available ⅞", 1⅞", and 2¼" wide (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3¼", 4½", 6½", and up to 12½" deep



Can be left (shown) or right opening



■ 1 Wide Casement

■ 2 Wide Casement

■ 3 Wide Casement

2 and 3 wide units can be any combination of casement and fixed or picture windows.

		R.O. Width									
		56"	59 ⅞"	63 ⅞"	71 ¾"	79 ⅞"	83 ½"	89 ⅞"	95 ⅞"	107 ⅞"	111 ⅞"
R.O. Height	12 ⅝"										
	16 ⅝"		■								
	20 ½"		■		■						
	24 ½"	■	■		■		■				
	28 ⅜"	■	■ ■		■		■	■			
	30 ⅜"	■	■ ■	■	■		■	■	■		
	32 ⅜"	■	■ ■	■	■ ■		■	■	■	■	
	36 ¼"	■	■ ■	■	■ ■		■	■	■	■	
	40 ¼"	■	■ ■	■	■ ■		■	■	■	■	
	48 ⅞"	■	■ ■	■	■ ■		■	■	■	■	
	56"	■	■ ■	■	■ ■		■	■	■	■	
	59 ⅞"	■	■ ■	■	■ ■		■	■	■	■	
	63 ⅞"	■	■ ■	■	■ ■		■	■	■	■	
	71 ¾"	■	■ ■	■	■ ■		■	■	■	■	
	79 ⅞"										
	83 ½"										
95 ⅞"											

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.27	1.53	21	C	U
DLE-RA	0.29	1.65	28	C	E-R
T	0.29	1.65	30	D	E-R
TLEA	0.22	1.25	27	D	U
TLE-RA	0.23	1.31	34	D	U/E-R
T2LEA	0.18	1.02	30	D	U/E-R
T2LE-RA	0.19	1.08	38	D	U/E-R

Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.60	18	B	U
DLE-RA	0.30	1.70	25	C	E-R
T	0.30	1.70	27	C	E-R
TLEA	0.23	1.30	24	D	U
TLE-RA	0.24	1.40	30	D	U/E-R
T2LEA	0.20	1.10	27	D	U
T2LE-RA	0.20	1.10	34	D	U/E-R

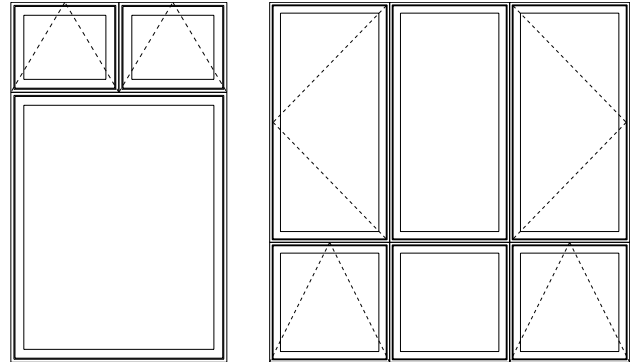
Willmar® Collection – Vinyl ES7000 (7E)



Our vinyl fixed windows look like operating windows, but remain fixed, while providing maximum glass for enhanced view and light. Available in many sizes and shapes, they offer even sightlines and correspond in appearance to our ES7000 line of casement and awning windows.

Our fixed windows have identical glass sightlines as our casement and awning windows, making various combinations possible.

Angle individual units to create a bay or a bow window.
(See page 26-27)



ES7000 Fixed Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening

		R.O. Width									
		12 ⅝"	16 ⅝"	20 ½"	24 ½"	28 ⅜"	30 ⅜"	32 ⅜"	36 ¼"	40 ¼"	48 ⅙"
R.O. Height	12 ⅝"		■	■	■	■	■	■ ■	■	■ ■	■ ■
	16 ⅝"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	20 ½"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	24 ½"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	28 ⅜"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	30 ⅜"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	32 ⅜"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	36 ¼"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	40 ¼"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	48 ⅙"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	56"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	59 ⅞"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	63 ⅞"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	71 ¾"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	79 ⅝"		■	■	■	■	■	■	■	■	■
83 ½"		■	■	■	■	■	■	■	■	■	
95 ⅜"			■	■	■	■	■	■	■	■	

Total Window Performance

Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.43	.61	44	.30	.33	56	.27	.33	59	.31	.51	55	.29	.51	57
Tripane			Tripane LowE			Tripane LowE w/ Argon			Tripane 2LowE			Tripane 2LowE w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.30	.56	60	.23	.30	67	.21	.30	69	.19	.28	73	.17	.28	76
			Tripane LowE-R			Tripane LowE-R w/ Argon			Tripane 2LowE-R			Tripane 2LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
			.24	.47	66	.23	.47	68	.20	.44	71	.18	.45	73

Standard Features

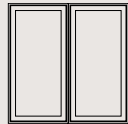
- Available in White or Desert Sand
- 3¼" frame with integral nailing fin
- 2¼" jamb depth
- Dualpane
- Insulating clear glazing

Optional Features

- Full exterior and exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black (White interior)
- Brickmould with sill nosing available in 1⅝", 2" and 3½"
- Additional frame options include 3¼" extender, 1¼" J-trim, exterior casing, U-channel, drip edge, and sill expander
- Tripane
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- Insulating Glass Unit (IGU) Grilles are available ⅝" wide or ⅝" narrow (see page 6 for grille patterns)
- SDL (Simulated Divided Lites) are available ⅞", 1⅞", and 2¼" wide (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3¼", 4½", 6½", and up to 12½" deep



■ 1 Wide Fixed



■ 2 Wide Fixed



■ 3 Wide Fixed

2 and 3 wide units can be any combination of fixed and operating windows.

		R.O. Width									
		56"	59 ⅞"	63 ⅞"	71 ¾"	79 ⅞"	83 ½"	89 ⅞"	95 ⅞"	107 ⅞"	111 ⅞"
R.O. Height	12 ⅝"	■	■	■	■	■	■				
	16 ⅝"	■	■	■	■	■	■				
	20 ½"	■	■	■	■	■	■		■		
	24 ½"	■	■	■	■	■	■		■		
	28 ⅜"	■	■	■	■	■	■	■	■		
	30 ⅜"	■	■	■	■	■	■	■	■		
	32 ⅜"	■	■	■	■	■	■	■	■	■	
	36 ¼"	■	■	■	■	■	■	■	■	■	■
	40 ¼"	■	■	■	■	■	■	■	■	■	■
	48 ⅞"	■	■	■	■	■	■	■	■	■	■
	56"	■	■	■	■	■	■	■	■	■	■
	59 ⅞"	■	■	■	■	■	■	■	■	■	■
	63 ⅞"	■	■	■	■	■	■	■	■	■	■
	71 ¾"	■	■	■	■	■	■	■	■	■	■
	79 ⅞"	■	■	■	■	■	■				
	83 ½"	■	■	■	■	■	■				
95 ⅞"	■	■	■	■							

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.27	1.53	22	C	U
DLE-RA	0.29	1.65	33	B	U/E-R
T	0.30	1.70	30	B	U
TLEA	0.21	1.19	27	D	U
TLE-RA	0.23	1.31	38	D	U
T2LEA	0.17	0.97	34	D	U
T2LE-RA	0.18	1.02	43	D	U/E-R

Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.30	1.70	20	B	U
DLE-RA	0.30	1.70	29	B	U
T	0.30	1.70	32	B	U/E-R
TLEA	0.23	1.30	27	D	U
TLE-RA	0.23	1.30	36	D	U
T2LEA	0.20	1.10	30	D	U
T2LE-RA	0.19	1.10	39	D	U/E-R

Willmar® Collection – Vinyl ES7000 (7E)



Our picture windows are non-operating stationary window units designed to correspond in appearance to our ES7000 line of casement and awning windows. Available in virtually any size or shape, our picture windows are directly glazed into their frames in order to provide you with large and uninterrupted views.

Our picture windows are designed to work in combination with our casement and awning windows, making various combinations possible.

Angle individual units to create a bay or a bow window. (See page 26-27)

Picture windows are also ideal for transoms.

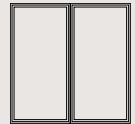
ES7000 Picture Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening



■ 1 Wide Picture



■ 2 Wide Picture

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■
	16 5/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	20 1/2"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	24 1/2"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	28 3/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	30 3/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	32 3/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	36 1/4"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	40 1/4"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	48 1/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	56"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	59 7/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	63 7/8"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	71 3/4"		■	■	■	■	■	■ ■	■	■ ■	■ ■ ■
	79 5/8"		■	■	■	■	■	■	■	■	■
	83 1/2"		■	■	■	■	■	■	■	■	■
	95 3/8"			■	■	■	■	■	■	■	■

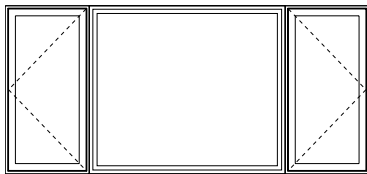
Total Window Performance

Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.45	.68	45	.30	.36	57	.27	.36	59	.30	.56	55	.30	.56	58
Tripane			Tripane LowE			Tripane LowE w/ Argon			Tripane 2LowE			Tripane 2LowE w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.31	.62	60	.23	.33	67	.21	.33	69	.18	.31	74	.16	.31	76
			Tripane LowE-R			Tripane LowE-R w/ Argon			Tripane 2LowE-R			Tripane 2LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
			.24	.52	66	.22	.52	68	.19	.49	72	.17	.49	74

PICTURE WINDOWS

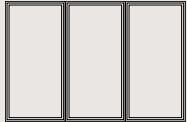
Standard Features

- Available in White or Desert Sand
- 3¼" frame with integral nailing fin
- 2¼" jamb depth
- Dualpane
- Insulating clear glazing



Optional Features

- Full exterior and exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black (White interior)
- Brickmould with sill nosing available in 1⅝", 2" and 3½"
- Additional frame options include 3¼" extender, 1¼" J-trim, exterior casing, U-channel, drip edge, and sill expander
- Tripane
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- Insulating Glass Unit (IGU) Grilles are available ⅝" wide or ⅝" narrow (see page 6 for grille patterns)
- SDL (Simulated Divided Lites) are available ⅞", 1⅞", and 2¼" wide (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3¼", 4½", 6½", and up to 12½" deep



2 and 3 wide units can be any combination of picture and operating windows.

■ 3 Wide Picture

		R.O. Width									
		56"	59 7⁄8"	63 7⁄8"	71 3⁄4"	79 5⁄8"	83 1⁄2"	89 3⁄8"	95 3⁄8"	107 1⁄8"	111 1⁄8"
R.O. Height	12 5⁄8"	■ ■	■ ■	■ ■	■ ■	■	■				
	16 5⁄8"	■ ■	■ ■ ■	■ ■	■ ■	■	■				
	20 1⁄2"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■		■		
	24 1⁄2"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■		■		
	28 3⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■		
	30 3⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■		
	32 3⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	36 1⁄4"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	40 1⁄4"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	48 1⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	56"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	59 7⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	63 7⁄8"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	71 3⁄4"	■ ■	■ ■ ■	■ ■	■ ■ ■	■	■ ■	■	■ ■	■	
	79 5⁄8"	■	■	■	■	■	■				
	83 1⁄2"	■	■	■	■	■	■				
95 3⁄8"	■	■	■	■							

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.27	1.53	22	C	U
DLE-RA	0.30	1.70	35	C	E-R
T	0.31	1.76	29	B	U
TLEA	0.21	1.19	27	D	U
TLE-RA	0.22	1.25	42	D	U/E-R
T2LEA	0.16	0.91	35	D	U
T2LE-RA	0.17	0.97	47	D	U/E-R

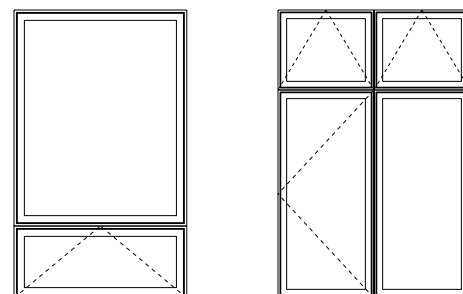
Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.30	1.70	21	B	U
DLE-RA	0.31	1.80	31	B	U/E-R
T	0.31	1.80	34	B	U/E-R
TLEA	0.23	1.30	29	D	U
TLE-RA	0.23	1.30	38	D	U
T2LEA	0.19	1.10	32	D	U
T2LE-RA	0.19	1.10	42	D	U/E-R

Willmar® Collection – Vinyl ES7000 (7E)



Versatile and design-friendly, awning windows work well under any architectural circumstances, including groupings with other windows. They open from the bottom using a top hinge, allowing for air circulation in any kind of weather, including rain.

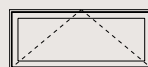


Various combinations can be specified using awning windows with fixed and picture windows. Our fixed windows have identical glass sitelines as our awning windows. Picture windows provide a larger glass area compared to fixed windows. Unique combinations can also be created by mulling and stacking awning windows with other window types.

ES7000 Awning Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening



■ 1 Wide Awning



■ 2 Wide Awning

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"				■	■	■	■	■	■	■ ■
	16 5/8"				■	■	■	■	■	■	■ ■
	20 1/2"				■	■	■	■	■	■	■ ■
	24 1/2"				■	■	■	■	■	■	■ ■
	28 3/8"				■	■	■	■	■	■	■ ■
	30 3/8"				■	■	■	■	■	■	■ ■
	32 3/8"				■	■	■	■	■	■	■ ■
	36 1/4"				■	■	■	■	■	■	■ ■
	40 1/4"				■	■	■	■	■	■	■ ■
	48 1/8"										
	56"						■	■	■	■	■
	59 7/8"						■	■	■	■	■
	63 7/8"						■	■	■	■	■
	71 3/4"						■	■	■	■	■
	79 5/8"										
	83 1/2"										
	95 3/8"										

Total Window Performance

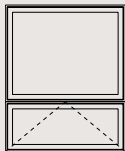
Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.41	.52	47	.29	.28	58	.27	.28	60	.31	.43	54	.29	.43	57
Tripane			Tripane LowE			Tripane LowE w/ Argon			Tripane 2LowE			Tripane 2LowE w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.29	.48	60	.23	.26	68	.22	.26	69	.19	.24	73	.18	.24	76
			Tripane LowE-R			Tripane LowE-R w/ Argon			Tripane 2LowE-R			Tripane 2LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
			.24	.40	67	.23	.40	68	.21	.38	71	.19	.38	74

Standard Features

- Available in White or Desert Sand
- 3¼" frame with integral nailing fin
- 2¼" jamb depth
- Dualpane
- Insulating clear glazing
- Truth® Encore® hardware with scissor operator and folding/nesting handle available in White or Desert Sand
- Dual locks
- Fibreglass mesh screen with White or Desert Sand frame colour

Optional Features

- Full exterior and exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black (White interior)
- Brickmould with sill nosing available in 1⅝", 2" and 3½"
- Additional frame options include 3¼" extender, 1¼" J-trim, exterior casing, U-channel, drip edge, and sill expander
- Tripane
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- Hardware options include motorized operator and Coastal-Stainless Steel hinge finish
- Insulating Glass Unit (IGU) Grilles are available ⅝" wide or ⅜" narrow (see page 6 for grille patterns)
- SDL (Simulated Divided Lites) are available ⅞", 1⅛", and 2¼" wide (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3¼", 4½", 6½", and up to 12½" deep



2 wide and 2 high units can be any combination of awning and fixed, picture, or other types of operating windows.

■ 2 High Combination Awning

		R.O. Width									
		56"	59 7⁄8"	63 7⁄8"	71 3⁄4"	79 5⁄8"	83 1⁄2"	89 3⁄8"	95 3⁄8"	111 1⁄8"	119"
R.O. Height	12 5⁄8"										
	16 3⁄8"	■ ■	■ ■	■	■	■			■	■	■
	20 1⁄2"	■ ■	■ ■	■	■	■			■	■	■
	24 1⁄2"	■ ■	■ ■	■	■	■			■	■	■
	28 3⁄8"	■ ■	■ ■	■	■	■			■	■	■
	30 3⁄8"	■ ■	■ ■	■	■	■			■	■	■
	32 3⁄8"	■	■	■	■	■			■		
	36 1⁄4"	■	■	■	■	■			■		
	40 1⁄4"	■	■	■	■	■			■		
	48 1⁄8"										
	56"	■	■								
	59 7⁄8"	■	■								
	63 7⁄8"	■	■								
	71 3⁄4"	■	■								
	79 5⁄8"										
	83 1⁄2"										
	95 3⁄8"										

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.27	1.53	22	C	U
DLE-RA	0.29	1.65	29	D	E-R
T	0.29	1.65	31	D	E-R
TLEA	0.22	1.25	26	D	U
TLE-RA	0.23	1.31	34	D	U/E-R
T2LEA	0.18	1.02	32	D	U/E-R
T2LE-RA	0.19	1.08	38	D	U/E-R

Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.60	18	B	U
DLE-RA	0.30	1.70	25	C	E-R
T	0.29	1.60	28	C	E-R
TLEA	0.23	1.30	25	D	U
TLE-RA	0.23	1.30	32	D	U/E-R
T2LEA	0.20	1.10	27	D	U
T2LE-RA	0.20	1.10	35	D	U/E-R

Willmar® Collection – Vinyl ES7000 (7E)

ES7000 Specialty Windows Sizing Charts

Sizing Chart Legend

R.O. Rough Opening



■ Half Round



■ Segmental



■ Elliptical

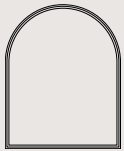


■ Quarter Round

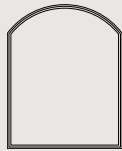


■ Quarter Segmental

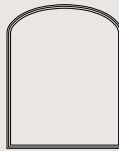
		R.O. Width									
		20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"	56"	59 7/8"
R.O. Height	10 3/4"	■			■	■	■	■			
	12 5/8"		■ ■	■	■				■	■	
	13 5/8"					■					
	14 5/8"			■	■	■	■ ■				■
	15 5/8"				■			■			
	16 5/8"					■		■	■		
	17 5/8"							■		■	
	18 5/8"						■		■		■
	20 1/2"	■						■		■	■
	22 1/2"										
	24 1/2"		■ ■ ■						■		
	28 3/8"			■ ■ ■						■	
	30 3/8"				■ ■ ■						■
	32 3/8"		■			■ ■ ■					
	36 1/4"		■				■ ■ ■				
	40 1/4"		■					■ ■ ■			
	42 1/8"								■ ■ ■		
	45 1/8"										
	48 1/8"		■			■	■		■ ■ ■		
	56"									■ ■	
	59 7/8"										■ ■
	63 7/8"										
	71 3/4"										



■ Extended Half Round



■ Extended Segmental



■ Extended Elliptical



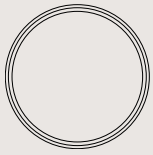
■ Extended Quarter Round



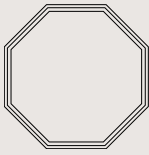
■ Extended Quarter Segmental

		R.O. Width							
		16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"
R.O. Height	16 5/8"	■	■	■	■	■	■	■	■
	20 1/2"	■ ■	■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	24 1/2"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	28 3/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	30 3/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	32 3/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	36 1/4"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	40 1/4"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	48 1/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	56"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	59 7/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	63 7/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	71 3/4"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	79 5/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	83 1/2"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	95 5/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■

SPECIALTY WINDOWS



● Round



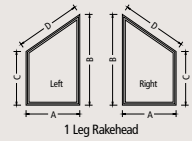
● Octagon



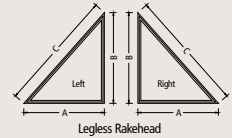
● Oval

Angled Windows

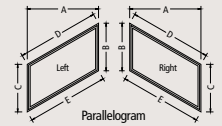
NOTE: Angled windows are available in fixed sash or picture frame. See pages 10-13 for sizes.



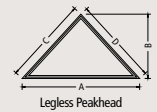
1 Leg Rakehead



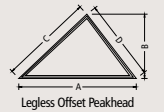
Legless Rakehead



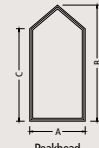
Parallelogram



Legless Peakhead



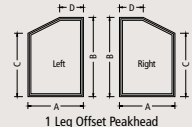
Legless Offset Peakhead



Peakhead



Offset Peakhead



1 Leg Offset Peakhead

		R.O. Width						
		63 ⅞"	71 ¾"	79 ⅝"	83 ½"	89 ⅜"	95 ⅜"	111 ⅛"
R.O. Height	10 ¾"							
	12 ⅝"							
	13 ⅝"							
	14 ⅝"	■	■					
	15 ⅝"							
	16 ⅝"			■	■	■		
	17 ⅝"							
	18 ⅝"	■					■	
	20 ½"		■	■				■
	22 ½"	■			■	■	■	
	24 ½"		■					■
	28 ⅜"							
	30 ⅜"							
	32 ⅜"	■						
	36 ¼"		■					
	40 ¼"			■				
	42 ⅙"				■			
	45 ⅙"					■		
	48 ⅙"						■	
	56"							■
	59 ⅞"							
	63 ⅞"	■ ●						
	71 ¾"		■ ●					

NOTE: For ES7000 specialty window performance test results see the ES7000 fixed window and picture window performance test results on pages 10-13.

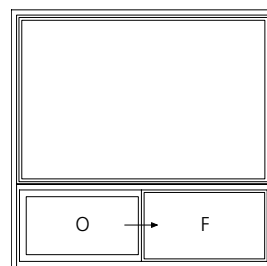
		R.O. Width								
		48 1⁄8"	56"	59 7⁄8"	63 7⁄8"	71 3⁄4"	79 5⁄8"	83 1⁄2"	89 3⁄8"	95 3⁄8"
R.O. Height	16 5⁄8"									
	20 1⁄2"	■ ■	■	■	■	■	■	■	■	
	24 1⁄2"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■	■	■
	28 3⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	30 3⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	32 3⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	36 1⁄4"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	40 1⁄4"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	48 1⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	56"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	59 7⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	63 7⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	71 3⁄4"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	■ ■
	79 5⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	
	83 1⁄2"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■	■ ■	
95 3⁄8"	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■					

Willmar® Collection – Vinyl ES3500 (35E)



Our popular slider windows combine durability with clean lines and good looks. With these units, one sash moves horizontally past a stationary sash on a track. Our line of vinyl sliding windows offers energy efficient technology and construction with a wide variety of insulating glass and design options.

NOTE: F = Fixed, O = Operating

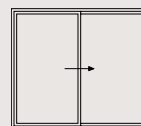


Slider windows are available as OFF, FFO, OFO, or as FO or OF. You can also combine them with our ES3500 line of picture windows.

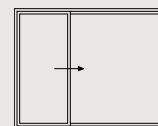
ES3500 Slider Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening
E Meets egress with standard hinge



■ 1 Slider



■ 2 Lite Offset Slider

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"										
	16 5/8"										
	20 1/2"				■	■	■	■	■	■	■
	24 1/2"				■	■	■	■	■	■	■
	28 3/8"				■	■	■	■	■	■	■
	30 3/8"				■	■	■	■	■	■	■
	32 3/8"				■	■	■	■	■	■	■
	36 1/4"						■	■	■	■	■ E
	40 1/4"							■	■	■ E	■ E
	48 1/8"								■	■ E	■ E
	56"							■	■	■	■ E
	59 7/8"							■	■	■	■ E
	63 7/8"							■	■	■	■
	71 3/4"							■	■	■	■
	79 5/8"										
	83 1/2"										
	95 3/8"										

Total Window Performance

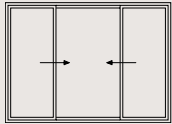
Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.46	.63	44	.32	.34	55	.29	.33	57	.33	.52	53	.31	.52	55

Standard Features

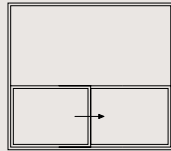
- Available in White or Desert Sand
- 3¼" frame with integral nailing fin
- 2¼" jamb depth
- Dualpane
- Insulating clear glazing
- Standard lock available in White or Desert Sand
- Fibreglass mesh screen with White or Desert Sand frame colour

Optional Features

- Full colour Desert Sand
- Exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black
- Additional frame options include brickmould with sill nosing, 3¼" extender, 1¼" J-trim, exterior casing, U-channel, drip edge, and sill expander
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- WEN-Lock™ automatic lock
- Insulating Glass Unit (IGU) Grilles are available ⅝" wide or ⅝" narrow (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3¼", 4½", 6½", and up to 12½" deep



■ 3 Lite Slider



■ 2 High Combination Slider

All slider window units can be ordered as operating / fixed, or as fixed / operating.

		R.O. Width									
		56"	59 7⁄8"	63 7⁄8"	71 3⁄4"	79 5⁄8"	83 1⁄2"	89 3⁄8"	95 3⁄8"	107 1⁄8"	111 1⁄8"
R.O. Height	12 5⁄8"	■	■	■	■						
	16 5⁄8"	■	■ ■	■	■ ■ ■		■ ■		■	■	
	20 1⁄2"	■	■ ■	■	■ ■ ■		■ ■		■	■	
	24 1⁄2"	■	■ ■	■ ■ E	■ ■ ■ E		■ ■		■	■	
	28 3⁄8"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	30 3⁄8"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	32 3⁄8"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	36 1⁄4"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	40 1⁄4"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	48 1⁄8"	■ E	■ ■ E	■ E	■ ■ ■ E		■ ■		■	■	
	56"	■ ■ E	■ ■ ■ E	■ ■ E	■ ■ ■ ■ E		■ ■		■	■	
	59 7⁄8"	■ ■ E	■ ■ ■ E	■ ■ E	■ ■ ■ ■ E		■ ■		■	■	
	63 7⁄8"	■	■	■	■						
	71 3⁄4"	■	■	■	■						
	79 5⁄8"										
83 1⁄2"											
95 3⁄8"											

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.65	22	B	U/E-R
DLE-RA	0.31	1.76	31	D	E-R

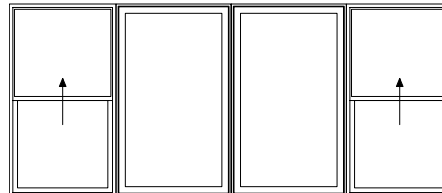
Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.60	21	B	U/E-R
DLE-RA	0.31	1.80	28	C	E-R

Willmar® Collection – Vinyl ES3500 (35E)



Single hung windows feature a stationary upper sash, and an operable lower sash which slides up or down in the frame for complete control of air movement. Our ES3500 line of vinyl sliding windows offer energy efficient technology and construction with a wide variety of insulating glass and design options.



Various combinations can be specified using ES3500 single hung windows with ES3500 picture windows. Individual units can be angled to create a bow or a bay window. (See page 26-27)

Single hung windows are also available as fixed single hung units to match operating units.

ES3500 Single Hung Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening
E Meets egress with standard hinge

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"										
	16 5/8"										
	20 1/2"										
	24 1/2"			■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	28 3/8"			■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	30 3/8"		■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	32 3/8"		■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	36 1/4"		■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	40 1/4"		■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	48 1/8"		■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■ E	■ ■ E	■ ■ E
	56"		■ ■	■ ■	■ ■	■ ■ E	■ ■ E	■ ■	■ ■ E	■ ■ E	■ ■ E
	59 7/8"		■ ■	■ ■	■ ■	■ ■ E	■ ■ E	■ ■	■ ■ E	■ ■ E	■ ■ E
	63 7/8"		■ ■	■ ■	■ ■ E	■ ■ E	■ ■ E	■ ■	■ ■ E	■ ■ E	■ ■ E
	71 3/4"		■ ■	■ ■	■ ■ E	■ ■ E	■ ■ E	■ ■	■ ■ E	■ ■ E	■ ■ E
	79 5/8"										
	83 1/2"										
	95 3/8"										

Total Window Performance

Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.46	.65	43	.32	.36	54	.29	.36	56	.33	.54	53	.31	.54	55

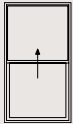
SINGLE HUNG WINDOWS

Standard Features

- Available in White or Desert Sand
- 16 $\frac{5}{8}$ " to 48 $\frac{5}{8}$ " wide x 24 $\frac{1}{2}$ " to 71 $\frac{3}{4}$ " high
- 3 $\frac{1}{4}$ " frame with integral nailing fin
- 2 $\frac{1}{4}$ " jamb depth
- Dualpane
- Insulating clear glazing
- Standard lock available in White or Desert Sand
- Fibreglass mesh screen with White or Desert Sand frame colour

Optional Features

- Full colour Desert Sand
- Exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black
- Additional frame options include brickmould with sill nosing, 3 $\frac{1}{4}$ " extender, 1 $\frac{1}{4}$ " J-trim, exterior casing, U-channel, drip edge, and sill expander
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- WEN-Lock™ automatic lock
- Insulating Glass Unit (IGU) Grilles are available $\frac{5}{8}$ " wide or $\frac{5}{16}$ " narrow (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3 $\frac{1}{4}$ ", 4 $\frac{1}{2}$ ", 6 $\frac{1}{2}$ ", and up to 12 $\frac{1}{2}$ " deep
- Single Hung windows are available as fixed units to match operating Single Hung windows. No hardware or screens come with fixed units.



■ 1 Single Hung



■ Fixed Single Hung

		R.O. Width									
		56"	59 7⁄8"	63 7⁄8"	71 ¾"	79 5⁄8"	83 ½"	89 3⁄8"	95 3⁄8"	107 1⁄8"	111 1⁄8"
R.O. Height	12 5⁄8"										
	16 5⁄8"										
	20 ½"										
	24 ½"										
	28 3⁄8"										
	30 3⁄8"										
	32 3⁄8"										
	36 ¼"										
	40 ¼"										
	48 1⁄8"										
	56"										
	59 7⁄8"										
	63 7⁄8"										
	71 ¾"										
	79 5⁄8"										
	83 ½"										
95 3⁄8"											

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.65	24	B	U/E-R
DLE-RA	0.31	1.76	32	D	E-R

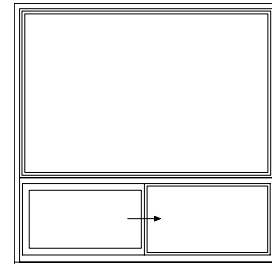
Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.29	1.60	22	B	U/E-R
DLE-RA	0.31	1.80	29	D	E-R

Willmar® Collection – Vinyl ES3500 (35E)



Our ES3500 picture windows are non-operating stationary window units designed to correspond in appearance to our ES3500 line of slider and single hung windows. Available in virtually any size or shape, our picture windows are directly glazed into their frames in order to provide you with large and uninterrupted views.



Various combinations can be specified using ES3500 picture windows with our ES3500 line of slider and single hung windows.

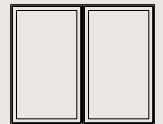
ES3500 Picture Windows Sizing Chart

Sizing Chart Legend

R.O. Rough Opening



■ 1 Wide Picture



■ 2 Wide Picture

		R.O. Width									
		12 5/8"	16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"
R.O. Height	12 5/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	16 5/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	20 1/2"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	24 1/2"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	28 3/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	30 3/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	32 3/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	36 1/4"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	40 1/4"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	48 1/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	56"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	59 7/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	63 7/8"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	71 3/4"	■	■	■	■	■	■	■ ■	■	■ ■	■ ■
	79 5/8"	■	■	■	■	■	■	■	■	■	■
	83 1/2"	■	■	■	■	■	■	■	■	■	■
	95 3/8"			■	■	■	■	■	■	■	■

Total Window Performance

Dual			Dual LowE			Dual LowE w/ Argon			Dual LowE-R			Dual LowE-R w/ Argon		
U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR	U-factor	SHGC	CR
.46	.68	44	.31	.36	56	.28	.36	59	.33	.56	55	.30	.56	57

Standard Features

- Available in White or Desert Sand
- 12 $\frac{5}{8}$ " to 95 $\frac{3}{8}$ " wide x 12 $\frac{5}{8}$ " to 95 $\frac{3}{8}$ " high
- 3 $\frac{1}{4}$ " frame with integral nailing fin
- 2 $\frac{1}{4}$ " jamb depth
- Dualpane
- Insulating clear glazing

Optional Features

- Full colour Desert Sand
- Exterior trim colours available in Desert Sand, Linen, Red, Green, Brown, Ivory, Mist Grey, Slate, Blue, Ivy, and Black
- Additional frame options include brickmould with sill nosing, 3 $\frac{1}{4}$ " extender, 1 $\frac{1}{4}$ " J-trim, exterior casing, U-channel, drip edge, and sill expander
- LowE with argon, LowE-R with argon
- Obscure glass available in Pinhead, Rainglass, Narrow Reed, Gluechip, Sandblasted, Bronze, Grey, and Laminated
- All glass is available tempered
- Insulating Glass Unit (IGU) Grilles are available $\frac{5}{8}$ " wide or $\frac{5}{16}$ " narrow (see page 6 for grille patterns)
- Vinyl jamb extensions are available 3 $\frac{1}{4}$ ", 4 $\frac{1}{2}$ ", 6 $\frac{1}{2}$ ", and up to 12 $\frac{1}{2}$ " deep

		R.O. Width									
		56"	59 7⁄8"	63 7⁄8"	71 ¾"	79 5⁄8"	83 ½"	89 3⁄8"	95 3⁄8"	107 1⁄8"	111 1⁄8"
R.O. Height	12 5⁄8"	■ ■	■ ■	■ ■	■ ■	■	■				
	16 5⁄8"	■ ■	■ ■	■ ■	■ ■	■	■				
	20 ½"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	24 ½"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	28 3⁄8"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	30 3⁄8"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	32 3⁄8"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	36 ¼"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	40 ¼"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	48 ⅛"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	56"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	59 7⁄8"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	63 7⁄8"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	71 ¾"	■ ■	■ ■	■ ■	■ ■	■	■		■		
	79 5⁄8"	■	■	■	■						
	83 ½"	■	■	■	■						
95 3⁄8"	■	■	■	■							

ENERGY STAR® Qualifying Vinyl Windows

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.28	1.59	26	C	U/E-R
DLE-RA	0.30	1.70	35	C	E-R

Qualifying Vinyl Windows w/Internal Grilles

Glazing	U-factor	U-Value	Energy Rating	Max Zone	Compliance Path
DLEA	0.28	1.60	24	C	U
DLE-RA	0.30	1.70	32	D	E-R

Willmar® Collection – Vinyl ES3500 (35E)

ES3500 Specialty Windows Sizing Charts

Sizing Chart Legend

R.O. Rough Opening



■ Half Round

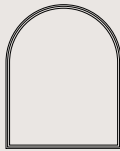


■ Segmental

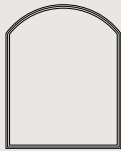


■ Quarter Round

		R.O. Width									
		20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"	48 1/8"	56"	59 7/8"
R.O. Height	10 3/4"				■	■	■	■			
	12 5/8"		■						■	■	
	13 5/8"										
	14 5/8"			■							■
	15 5/8"				■						
	16 5/8"					■					
	17 5/8"										
	18 5/8"						■				
	20 1/2"	■						■			
	22 1/2"										
	24 1/2"		■						■		
	28 3/8"			■						■	
	30 3/8"				■						■
	32 3/8"					■					
	36 1/4"						■				
	40 1/4"							■			
	42 1/8"										
	45 1/8"										
	48 1/8"								■		
	56"									■	
	59 7/8"										■



■ Extended Half Round



■ Extended Segmental



■ Extended Quarter Round

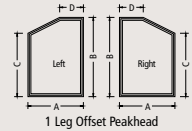
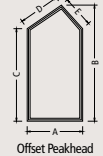
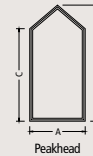
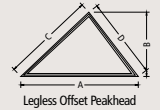
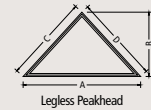
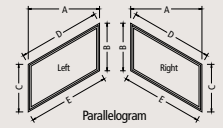
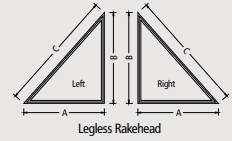
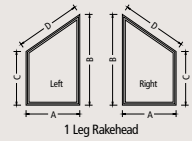


■ Extended Quarter Segmental

		R.O. Width							
		16 5/8"	20 1/2"	24 1/2"	28 3/8"	30 3/8"	32 3/8"	36 1/4"	40 1/4"
R.O. Height	16 5/8"					■	■	■	■
	20 1/2"			■	■	■	■	■	■
	24 1/2"	■ ■	■ ■	■	■	■ ■	■ ■	■ ■	■ ■
	28 3/8"	■ ■	■ ■	■ ■	■	■ ■	■ ■	■ ■	■ ■
	30 3/8"	■ ■	■ ■	■ ■	■	■ ■	■ ■	■ ■	■ ■
	32 3/8"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
	36 1/4"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■	■ ■
	40 1/4"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■
	48 1/8"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	56"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	59 7/8"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	63 7/8"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	71 3/4"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	79 5/8"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	83 1/2"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■
	95 5/8"	■ ■	■ ■	■ ■	■ ■	■ ■ ■	■ ■ ■	■ ■ ■	■ ■ ■

Angled Windows

NOTE: Angled windows are available as ES3500 picture windows. See pages 22-23 for sizes.

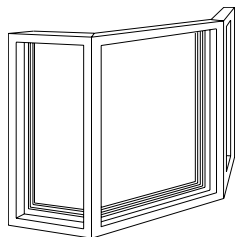


		R.O. Width						
		63 7⁄8"	71 3⁄4"	79 5⁄8"	83 1⁄2"	89 3⁄8"	95 3⁄8"	111 1⁄8"
R.O. Height	10 3⁄4"							
	12 5⁄8"							
	13 5⁄8"							
	14 5⁄8"	■	■					
	15 5⁄8"							
	16 5⁄8"			■	■	■		
	17 5⁄8"							
	18 5⁄8"						■	
	20 1⁄2"							
	22 1⁄2"							
	24 1⁄2"							
	28 3⁄8"							
	30 3⁄8"							
	32 3⁄8"	■						
	36 1⁄4"		■					
	40 1⁄4"			■				
	42 1⁄8"				■			
	45 1⁄8"					■		
	48 1⁄8"						■	
	56"							
	59 7⁄8"							
	63 7⁄8"	■						
	71 3⁄4"		■					

NOTE: For ES3500 specialty window performance test results see the ES3500 picture window performance test results on pages 22-23.

		R.O. Width								
		48 ⅛"	56"	59 ⅞"	63 ⅞"	71 ¾"	79 ⅝"	83 ½"	89 ⅞"	95 ⅜"
R.O. Height	16 ⅝"									
	20 ½"	■	■	■	■	■	■	■		
	24 ½"	■	■	■	■	■	■	■		
	28 ⅜"	■	■	■	■	■	■	■		
	30 ⅜"	■ ■	■	■	■	■	■	■		
	32 ⅜"	■ ■	■	■	■	■	■	■		
	36 ¼"	■ ■	■ ■	■ ■	■	■	■	■		
	40 ¼"	■ ■	■ ■	■ ■	■ ■	■	■	■		
	48 ⅛"	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■		
	56"	■ ■ ■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■		
	59 ⅞"	■ ■ ■ ■	■ ■ ■ ■	■ ■	■ ■	■ ■	■ ■	■ ■		
	63 ⅞"	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■	■ ■	■ ■	■ ■		
	71 ¾"	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■	■ ■	■ ■		
	79 ⅝"	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■				
	83 ½"	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■				
95 ⅜"	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■					

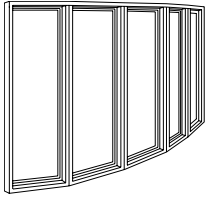
ES3500 AND ES7000 BAY WINDOWS



A bay window is made up of three or more windows. The side or flanker units project out from the building in 30 or 45 degree angles. The centre is parallel with the building wall and is made up of one or more windows.

Code Size (width)	Vinyl ES7000 and ES3500 Bay Windows							
	Framed Wall Bay				Straight Wall Bay			
	30° Bay		45° Bay		30° Bay		45° Bay	
	R.O.	Projection	R.O.	Projection	R.O.	Projection	R.O.	Projection
Kitchen Bay	n/a	n/a	n/a	n/a	n/a	n/a	46 7/16	10 13/16
Bay 4-6-4	55 7/8	9 1/16	50 15/16	13	53 3/16	9 7/8	48 3/16	13 3/8
Bay 4-7-4	59 13/16	9 1/16	54 7/8	13	57 1/8	9 7/8	52 1/8	13 3/8
Bay 4-75-4	61 3/4	9 1/16	56 7/8	13	59 1/16	9 7/8	54 1/16	13 3/8
Bay 4-8-4	63 3/4	9 1/16	58 13/16	13	61 1/16	9 7/8	56 1/16	13 3/8
Bay 4-9-4	67 11/16	9 1/16	62 3/4	13	65	9 7/8	60	13 3/8
Bay 4-10-4	71 5/8	9 1/16	66 11/16	13	68 15/16	9 7/8	63 15/16	13 3/8
Bay 4-12-4	79 1/2	9 1/16	74 9/16	13	76 13/16	9 7/8	71 13/16	13 3/8
Bay 4-14-4	87 3/8	9 1/16	82 7/16	13	84 11/16	9 7/8	79 11/16	13 3/8
Bay 4-15-4	91 5/16	9 1/16	86 3/8	13	88 5/8	9 7/8	83 5/8	13 3/8
Bay 4-16-4	95 1/4	9 1/16	90 3/16	13	92 3/16	9 7/8	87 3/16	13 3/8
Bay 4-18-4	103 1/8	9 1/16	98 3/16	13	100 7/16	9 7/8	95 7/16	13 3/8
Bay 4-21-4	114 13/16	9 1/16	110	13	112 1/4	9 7/8	107 1/4	13 3/8
Bay 5-6-5	62 11/16	11	56 1/2	15 13/16	60	11 7/8	53 3/4	16 7/16
Bay 5-7-5	66 5/8	11	60 7/16	15 13/16	63 15/16	11 7/8	57 11/16	16 7/16
Bay 5-75-5	68 9/16	11	62 7/16	15 13/16	65 15/16	11 7/8	59 3/8	16 7/16
Bay 5-8-5	70 9/16	11	64 3/8	15 13/16	67 7/8	11 7/8	61 5/8	16 7/16
Bay 5-9-5	74 1/2	11	68 3/16	15 13/16	71 13/16	11 7/8	65 9/16	16 7/16
Bay 5-10-5	78 7/16	11	72 1/4	15 13/16	75 3/4	11 7/8	69 1/2	16 7/16
Bay 5-12-5	86 5/16	11	80 1/8	15 13/16	83 5/8	11 7/8	77 3/8	16 7/16
Bay 5-14-5	94 3/16	11	88	15 13/16	91 1/2	11 7/8	85 1/4	16 7/16
Bay 5-15-5	98 1/8	11	91 15/16	15 13/16	95 7/16	11 7/8	89 3/16	16 7/16
Bay 5-16-5	102 1/16	11	95 14/16	15 13/16	99 3/8	11 7/8	93 1/8	16 7/16
Bay 5-18-5	109 15/16	11	103 3/4	15 13/16	107 1/4	11 7/8	101	16 7/16
Bay 5-21-5	121 3/4	11	115 9/16	15 13/16	119 1/16	11 7/8	112 13/16	16 7/16
Bay 6-7-6	73 7/16	13	66	18 5/8	70 3/4	13 13/16	63 1/4	19 3/16
Bay 6-75-6	75 3/8	13	68	18 5/8	72 3/4	13 13/16	65 1/4	19 3/16
Bay 6-8-6	77 3/8	13	69 15/16	18 5/8	74 11/16	13 13/16	67 3/16	19 3/16
Bay 6-9-6	81 5/16	13	73 7/8	18 5/8	78 5/8	13 13/16	71 7/16	19 3/16
Bay 6-10-6	85 1/4	13	77 13/16	18 5/8	82 9/16	13 13/16	75 1/16	19 3/16
Bay 6-12-6	93 1/8	13	85 11/16	18 5/8	90 7/16	13 13/16	82 15/16	19 3/16
Bay 6-14-6	101	13	93 9/16	18 5/8	98 5/16	13 13/16	90 13/16	19 3/16
Bay 6-15-6	104 15/16	13	97 1/2	18 5/8	102 1/4	13 13/16	94 3/4	19 3/16
Bay 6-16-6	108 7/8	13	101 7/16	18 5/8	106 3/16	13 13/16	98 11/16	19 3/16
Bay 6-18-6	116 3/4	13	109 3/16	18 5/8	114 1/16	13 13/16	106 9/16	19 3/16
Bay 6-21-6	128 3/16	13	121 1/8	18 5/8	125 7/8	13 13/16	118 5/8	19 3/16
Bay 7-7-7	80 1/4	14 15/16	71 9/16	21 3/8	77 9/16	15 13/16	68 13/16	22
Bay 7-75-7	82 1/4	14 15/16	73 9/16	21 3/8	79 9/16	15 13/16	70 13/16	22
Bay 7-8-7	84 3/16	14 15/16	75 1/2	21 3/8	81 1/2	15 13/16	72 3/4	22
Bay 7-9-7	88 1/8	14 15/16	79 7/16	21 3/8	85 1/16	15 13/16	76 11/16	22
Bay 7-10-7	92 1/16	14 15/16	83 3/8	21 3/8	89 3/8	15 13/16	80 5/8	22
Bay 7-12-7	99 15/16	14 15/16	91 1/4	21 3/8	97 1/4	15 13/16	88 1/2	22
Bay 7-14-7	107 13/16	14 15/16	99 1/8	21 3/8	105 1/8	15 13/16	96 3/8	22
Bay 7-15-7	111 3/4	14 15/16	103 7/16	21 3/8	109 1/16	15 13/16	100 7/16	22
Bay 7-16-7	115 11/16	14 15/16	107	21 3/8	113	15 13/16	104 1/4	22
Bay 7-18-7	123 9/16	14 15/16	114 7/8	21 3/8	120 7/8	15 13/16	112 7/8	22
Bay 7-21-7	135 3/8	14 15/16	126 11/16	21 3/8	132 11/16	15 13/16	123 15/16	22
Bay 75-9-75	91 9/16	15 15/16	82 1/4	22 3/4	88 7/8	16 3/4	79 1/2	23 3/8
Bay 75-10-75	95 1/2	15 15/16	86 3/16	22 3/4	92 13/16	16 3/4	83 7/16	23 3/8
Bay 75-12-75	103 3/8	15 15/16	94 1/16	22 3/4	100 11/16	16 3/4	91 3/16	23 3/8
Bay 75-14-75	111 1/4	15 15/16	101 15/16	22 3/4	108 9/16	16 3/4	99 3/16	23 3/8
Bay 75-15-75	115 5/16	15 15/16	105 5/8	22 3/4	112 1/2	16 3/4	103 1/8	23 3/8
Bay 75-16-75	119 1/8	15 15/16	109 13/16	22 3/4	116 7/16	16 3/4	107 7/16	23 3/8
Bay 75-18-75	127	15 15/16	117 11/16	22 3/4	124 1/16	16 3/4	114 15/16	23 3/8
Bay 75-21-75	138 3/4	15 15/16	129 1/2	22 3/4	136 1/8	16 3/4	129 3/4	23 3/8

ES3500 AND ES7000 BOW WINDOWS



A bow window is made up of a series of four or more adjoining window units, commonly five in number, installed on a radius from the wall of the building.

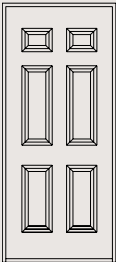
Code Size (width)	Vinyl ES7000 and ES3500 Bow Windows			
	4 Wide Framed Wall Bow		4 Wide Straight Wall Bow	
	15° Bow		15° Bow	
	R.O.	Projection	R.O.	Projection
Bow 4-4-4-4	65 ¹ / ₈	8 ¹⁵ / ₁₆	62 ³ / ₈	9 ⁷ / ₈
Bow 5-5-5-5	80 ³ / ₁₆	10 ¹⁵ / ₁₆	77 ¹¹ / ₁₆	11 ⁷ / ₈
Bow 6-6-6-6	95 ¹ / ₄	12 ¹⁵ / ₁₆	92 ³ / ₄	13 ⁷ / ₈
Bow 7-7-7-7	110 ³ / ₈	15	107 ⁷ / ₈	15 ¹⁵ / ₁₆
Bow 75-75-75-75	117 ⁷ / ₈	16	115 ³ / ₈	16 ¹⁵ / ₁₆

Code Size (width)	5 Wide Framed Wall Bow		5 Wide Straight Wall Bow	
	15° Bow		15° Bow	
	R.O.	Projection	R.O.	Projection
	R.O.	Projection	R.O.	Projection
Bow 4-4-4-4-4	78 ⁷ / ₁₆	13 ¹ / ₈	75 ⁵ / ₈	13 ¹⁵ / ₁₆
Bow 5-5-5-5-5	96 ³ / ₄	16 ¹ / ₈	94 ¹ / ₈	16 ¹⁵ / ₁₆
Bow 6-6-6-6-6	115 ¹ / ₈	19 ¹ / ₈	112 ⁷ / ₁₆	19 ¹⁵ / ₁₆
Bow 7-7-7-7-7	133 ¹ / ₂	22 ¹ / ₁₆	130 ¹³ / ₁₆	22 ¹⁵ / ₁₆
Bow 75-75-75-75-75	142 ¹¹ / ₁₆	23 ⁷ / ₁₆	140	24 ⁷ / ₁₆

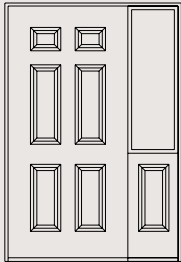
NOTE: Custom sizes and angles are also available for bay and bow windows.

PREMIUM FIBREGLOSS AND CONTOURS™ STEEL ENTRY AND GARDEN DOORS

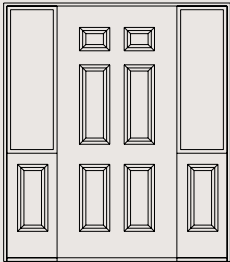
Entry Door Sizing Chart Legend R.O. Rough Opening



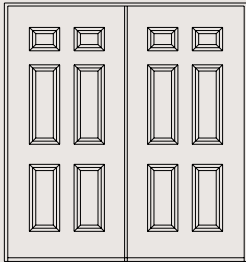
Door
(D)



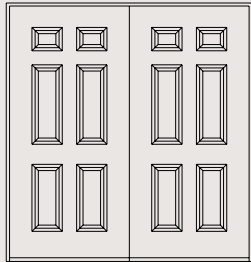
Door w/Sidelite
(D-S or S-D)



Door w/2-Sidelites
(S-D-S)

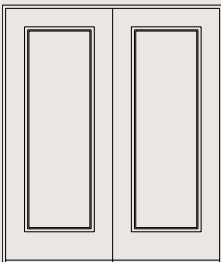


Double Door
(centre post remains when
doors are open)
(DD)



Double Door w/Astragal
(unobstructed opening
when doors are open)
(DDA)

Garden Door Sizing Chart Legend R.O. Rough Opening



■ Garden Doors

		R.O. Width			
		60 1/4"	67 3/4"	72 1/4"	75 3/4"
Height	2/8 - 2/8 Garden Doors 82 1/8"		■		
	3/0 - 3/0 Garden Doors 82 1/8"				■
	5068 Renovation Garden Doors 79 7/8"	■			
	6068 Renovation Garden Doors 79 7/8"			■	

NOTE: Renovation doors are not available in fibreglass.

SLIDING PATIO DOORS

		R.O. Width			
		60 1/8"	72 1/8"	89 1/2"	107 1/2"
Height	5068 Sliding Patio Doors 80"	■			
	6068 Sliding Patio Doors 80"		■		
	7668 Sliding Patio Doors 80"			■	
	9068 Sliding Patio Doors 80"				■

6/8 Rough Opening Chart (OSM Frame)

2/8 D	34 1/4" x 82 1/8"
2/8 D-S or S-D	49 3/4" x 82 1/8"
2/8 S-D-S	65 1/4" x 82 1/8"
2/8 DD	67 3/4" x 82 1/8"
2/8 DDA	66 3/4" x 82 1/8"
3/0 D	38 1/4" x 82 1/8"
3/0 D-S or S-D	53 3/4" x 82 1/8"
3/0 S-D-S	69 1/4" x 82 1/8"
3/0 DD	75 3/4" x 82 1/8"
3/0 DDA	74 3/4" x 82 1/8"
3/6 D	44 1/4" x 82 1/8"
3/6 D-S or S-D	59 3/4" x 82 1/8"
3/6 S-D-S	75 1/4" x 82 1/8"
3/6 DD	87 3/4" x 82 1/8"
3/6 DDA	86 3/4" x 82 1/8"

8/0 Rough Opening Chart (OSM Frame)

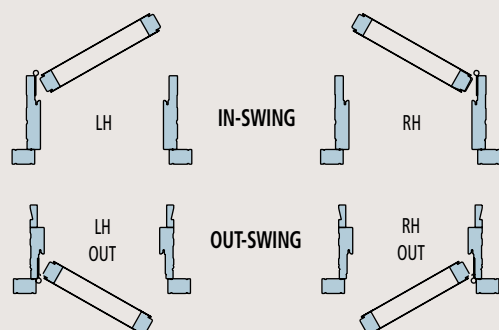
2/8 D	34 1/4" x 98 1/8"
2/8 D-S or S-D	49 3/4" x 98 1/8"
2/8 S-D-S	65 1/4" x 98 1/8"
2/8 DD	67 3/4" x 98 1/8"
2/8 DDA	66 3/4" x 98 1/8"
3/0 D	38 1/4" x 98 1/8"
3/0 D-S or S-D	53 3/4" x 98 1/8"
3/0 S-D-S	69 1/4" x 98 1/8"
3/0 DD	75 3/4" x 98 1/8"
3/0 DDA	74 3/4" x 98 1/8"

NOTE: Door w/Sidelite combination is available as DS or SD.

Sidelite rough openings include a 1/2 (15 1/2") sidelite. For a 1/0 (13 1/2") sidelite, deduct 2" from the rough opening width per sidelite.

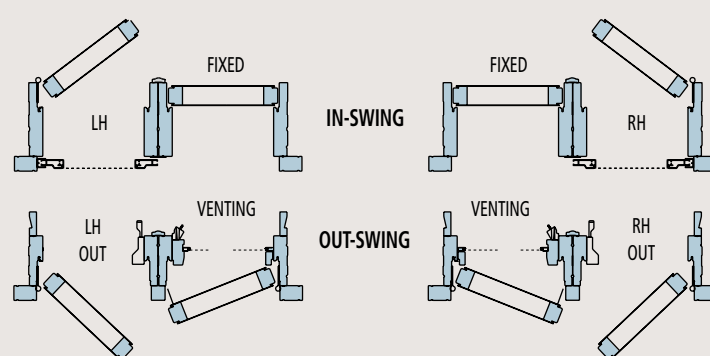
Rough opening height for a 6/8 door with a low profile sill is 81 3/8". Rough opening height for a 8/0 door with a low profile sill is 98 1/8".

Entry Door Swings



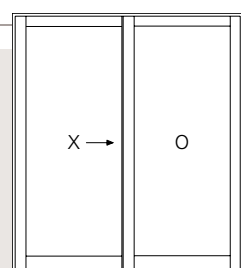
NOTE: Door swings are based on the location of the hinges viewed from the outside.

Garden Door Swings

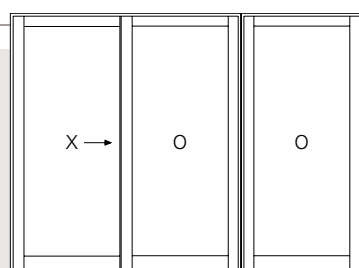


Sliding Patio Door Sizing Chart Legend

R.O. Rough Opening



■ Sliding Patio Doors (XO or OX)



■ Sliding Patio Doors w/Sidelite (XOO or OOX)

NOTE: X = Operating, O = Stationary

NOTES



The JELD-WEN® Web site is your ultimate resource for learning about our reliable windows and doors. It has all the product information and design advice you need. Visit us at www.jeld-wen.ca today.

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