



DOUBLE-HUNG

SECTION DIRECTORY

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SECTION DIRECTORY



Designer Series

Grille Types

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Pella ProLine 450

Grille Types

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General Notes:

Specifications subject to change without notice. Go to www.PellaADM.com for most current technical data.
For complete CSI Format Specifications browse online at www.PellaADM.com.

Abbreviations:

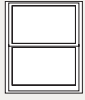
P = Pending. Data not available at time of publication. Go to www.PellaADM.com for most current technical data.

HGP = Hinged Glass Panel

PVB = Polyvinyl butyral. This is a laminate material used in Pella HurricaneShield® glazing and is the same material traditionally used in car windshield applications.

SGP = SentryGlas® Plus from DuPont®. This is a stiffer laminate material which is optional in select HurricaneShield impact-resistant glazing products.
SentryGlas Plus and DuPont are registered trademarks of E. I. DuPont De Nemours & Company.

HA = High Altitude Glass. See Wood / Clad Overview section for more information.



DOUBLE-HUNG

BRAND SUMMARY

Hung



Hung Windows (single-, simulated-, and double-hung) are traditional in every detail - with all the Pella innovations you demand. Pella's EnduraGuard protection formula, together with our immersion-treatment method, provides strong protection on every exterior wood surface of your windows and patio doors. This innovation provides advanced protection against the effects of moisture, decay, stains from mold and mildew - as well as termite damage. The exterior of the wood windows are protected by Pella's low-maintenance EnduraClad® protective finish, or EnduraClad Plus protective finish, aluminum-cladding system. Upper and Lower sash are fully operable on double-hung and balanced to open to virtually any position. Both sash tilt to the interior without removal for easy cleaning of outside glass. Sash corners are joined three ways (mortise and tenon, adhesive, and metal fasteners) for increased strength. Sash locks are factory installed. Our wide range of glazing options includes custom glazing and obscure glass. Pella maintains its high standards by taking the time to test virtually every vent unit for air infiltration, so you know you're getting a quality product.



English Rows, Naperville, IL. Styczynski Walker & Associates, Architects

ARCHITECT SERIES

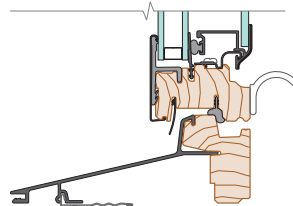
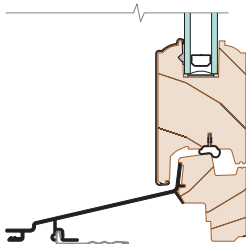
- A wide range of glazing options as well as HurricaneShield® impact-resistant glass
- Divided light options available in Integral Light Technology® Grilles, Grilles-Between-the-Glass or wood removable grilles in standard and custom patterns
- EnduraClad protective finish in standard and feature colors plus nearly unlimited custom colors
- InView™ screens or Vivid View® screens

DESIGNER SERIES

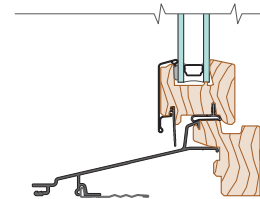
- Simplicity of insulated glass with the distinction of exclusive options
- Snap-in between-glass shades, and blinds as well as removable between-glass grilles
- EnduraClad Aluminum-Clad exteriors in standard and feature colors plus nearly unlimited custom colors
- InView™ screens or Vivid View® screens

PELLA PROLINE 450

- EnduraClad Aluminum-Clad exteriors in standard and feature colors
- Removable room side grilles, Grilles-Between-the-Glass or Simulated-Divided-Lite grilles
- Prefinished stain, prefinished White, Bright White, Linen White or factory primed interiors
- InView™ screens or Vivid View® screens



Triple-Pane Glazing System





DOUBLE-HUNG

PRODUCT SELECTION GUIDE

Size and Performance Data



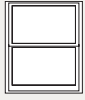
	ARCHITECT SERIES			DESIGNER SERIES	PELLA PROLINE 450
	Clad LX	Wood LX	Clad SE	Clad	Clad
SIZES					
Standard Double-Hung vent/fixed sizes	●	●	●	●	●
Transom sizes	●	●	●	●	●
Egress sizes	●	●	●	●	●
Single-Hung	●	●	–	–	–
Simulated-Hung	●	●	–	–	–
Single-Hung–arch head	●	●	–	–	–
Contemporary sash split	–	–	–	●	–
Cottage sash split	●	●	●	●	–
Variable sash split	●	●	–	–	–
Special sizes available	●	●	●	●	●
PERFORMANCE ¹					
Meets or Exceeds AAMA/WDMA Ratings	H-CW30-CW50 Hallmark Certified	H-CW30-CW45 Hallmark Certified	H-CW30-CW50 Hallmark Certified	H-R20-LC50 Hallmark Certified	H-LC30-LC50 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 1.57 psf wind pressure) ²	0.11	0.11	0.11	0.17	0.11
Water Resistance	4.6-7.5 psf	4.6-6.9 psf	4.6-7.5 psf	7.5 psf	7.5 psf
Design Pressure	30-50 psf	30-45 psf	30-50 psf	30-50 psf	30-50 psf
With HurricaneShield® Impact-Resistant Glass	H-LC55-60 Hallmark Certified	H-LC55 Hallmark Certified	H-LC55-60 Hallmark Certified	–	–
OTHER PERFORMANCE CRITERIA					
Forced Entry Resistance Level (Minimum Security Grade) ³	10	10	10	10	10
Maximum Operating Force (lb) Initiate Motion/Maintain Motion	40/45	40/45	40/45	40/40	40/40

(–) = Not Available

(1) Maximum performance for single unit when glazed with the appropriate glass thickness. See Design Data pages in this section for specific product performance class and grade values.

(2) Published performance data for air infiltration is determined by testing a minimum of four (4) products of NFRC model size. Testing is conducted in accordance with ASTM E283. Air infiltration ratings for products will differ by size. The performance data does not apply to combination assemblies unless noted. Actual product performance may vary for a number of reasons including installation and product care.

(3) The higher the level, the greater the product's ability to resist forced entry.



DOUBLE-HUNG

PRODUCT SELECTION GUIDE

Features and Options



	ARCHITECT SERIES		DESIGNER SERIES	PELLA PROLINE
	Clad	Wood		
GLAZING				
Glazing Type				
Dual-Pane Insulating Glass	S	S	-	S
Designer Series triple-pane glazing	-	-	S	-
Insulated Glass Options/Low-E Types				
Advanced Low-E	S	S	S	S
SunDefense™ Low-E	O	O	O	O
AdvancedComfort Low-E	O	O	O	O
NaturalSun Low-E	O	O	O	O
Insulating Glass with Clear Hinged Glass Panel	-	-	O	-
Clear (no Low-E coating)	O	O	O	-
Additional Glass Options				
Annealed Glass	S	S	S	S
Tempered Glass	O	O	O	O
Obscure Glass ₂	O	O	O	O
Tinted Glass (Bronze, Gray and Green)	O	O	O	-
HurricaneShield® Impact Resistant Products with Laminated Dual-Pane Insulating Glass _{5,6}	O	O	-	-
Gas Fill/High Altitude				
Argon	S	S	S	S
High altitude	O	O	O	O
EXTERIOR				
EnduraClad® Aluminum-Clad Wood	S	-	S	S
EnduraClad Plus aluminum-clad exterior	S	-	O	-
Factory primed wood exterior	-	S	-	-
Unfinished mahogany wood exterior	-	O	-	-
Cladding Colors				
White, Tan, Putty or Brown	S	-	S	S
23 feature colors ₁	O	-	O	O
Custom colors ₂	O	-	O	-
INTERIOR				
Unfinished wood	S	S	S	S
Factory primed	O	O	O	O
Factory prefinished paint ₂	O	O	O	O
Factory prefinished stain ₂	O	O	O	O
WOOD TYPES				
Pine	S	S	S	S
Mahogany (clad and wood LX only)	O	O	-	-
Alder (clad LX only)	O	-	-	-
Douglas Fir (clad LX only)	O	-	-	-

	ARCHITECT SERIES		DESIGNER SERIES	PELLA PROLINE
	Clad	Wood		
HARDWARE				
Sash lifts	O	O	S	O ₂
FINISHES				
Champagne, White or Brown	S	S	S	S
Bright Brass, Satin Nickel or Oil-Rubbed Bronze	O	O	O	O
SASH LOCKS				
Recessed	-	-	S	-
Surface-mounted	S	S	-	S
Spoon-shaped (surface-mounted)	O	O	-	-
TILT-WASH CLEANING				
Tilt to interior on both sashes	S	S	S	S
SCREENS				
Full-Size InView™ screens	O	O	O	O
Half-Size InView screens	O	O	O	-
Full-Size Vivid View® screens	O	O	O	O
Half-Size Vivid View screens	O	O	O	-
GRILLES				
Integral Light Technology® Grilles				
Traditional, Prairie, Diamond, New England, Top Row, Victorian, Custom	O	O	-	-
Removable Pine Wood Interior Grilles				
Traditional	O	O	-	O
Prairie, Custom	O	O	-	-
Removable Between-Glass Grilles				
Traditional, Prairie, Top Row, Cross, New England, Custom	-	-	O	-
Grilles-Between-the-Glass				
Traditional, Prairie, Cross, Top Row, Custom-Equally Divided	O	O	-	O
Simulated-Divided-Light₃ Grilles with optional spacer				
Traditional, 9-Lite Prairie, Cross, Top Row, Custom-Equally Divided	-	-	-	O
WINDOW FASHIONS₄				
Cellular Fabric Shades				
Between-glass bottom-up	-	-	O	-
Between-glass top-down	-	-	O	-
Slimshade® Blinds				
Between-glass bottom-up	-	-	O	-
Between-glass tilt-only	-	-	O	-

S = Standard; O = Optional; (-) = Not Available

(1) See the Clad/Wood Overview section for feature color options. Poplar White, Hartford Green, Black and Brick Red are the only feature color options available for Pella® Proline 450.

(2) Contact your local Pella sales representative for current color options.

(3) Available with Low-E argon-insulated glass only.

(4) For detailed information see the Between-the-Glass Options in the Clad/Wood Overview section.

(5) Low-E coatings are limited on Laminated Glass, see detailed product description or glazing performance for full details.

(6) Not available on Wood Exterior Monumental Hung products.



DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad



Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown								
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ₂				
										Zone				ER	Zone			
VENT											N	NC	SC	S				
11/16"	Clear IG	PEL-N-179-01101-00001	2.5	2.5	air	0.46	0.60	63	44									
	with grilles-between-the-glass	PEL-N-179-01102-00001				0.46	0.54	56	44									
	with integral grilles	PEL-N-179-01103-00001				0.46	0.54	56	44									
11/16"	Advanced Low-E IG	PEL-N-179-01137-00001	2.5	2.5	argon	0.29	0.28	53	60									
	with grilles-between-the-glass	PEL-N-179-01138-00001				0.29	0.25	47	60									
	with integral grilles	PEL-N-179-01139-00001				0.30	0.25	47	60									
11/16"	SunDefense™ Low-E IG	PEL-N-179-01185-00001	2.5	2.5	argon	0.29	0.21	49	60									
	with grilles-between-the-glass	PEL-N-179-01186-00001				0.29	0.19	44	60									
	with integral grilles	PEL-N-179-01187-00001				0.29	0.19	44	60									
11/16"	AdvancedComfort Low-E IG	PEL-N-179-01161-00001	2.5	2.5	argon	0.25	0.28	52	49					25				
	with grilles-between-the-glass	PEL-N-179-01162-00001				0.25	0.25	46	49					23				
	with integral grilles	PEL-N-179-01163-00001				0.26	0.25	46	48					22				
11/16"	NaturalSun Low-E IG	PEL-N-179-01113-00001	2.5	2.5	argon	0.30	0.53	60	59					33				
	with grilles-between-the-glass	PEL-N-179-01114-00001				0.30	0.47	54	59					30				
	with integral grilles	PEL-N-179-01115-00001				0.30	0.47	54	59					30				
TINTED GLAZING																		
11/16"	Bronze Advanced Low-E IG	PEL-N-179-01209-00001	5	3	argon	0.30	0.25	34	58									
	with grilles-between-the-glass	PEL-N-179-01210-00001				0.31	0.23	30	58									
	with integral grilles	PEL-N-179-01211-00001				0.31	0.23	30	58									
11/16"	Gray Advanced Low-E IG	PEL-N-179-01217-00001	5	3	argon	0.30	0.23	29	58									
	with grilles-between-the-glass	PEL-N-179-01218-00001				0.31	0.21	26	58									
	with integral grilles	PEL-N-179-01219-00001				0.31	0.21	26	58									
11/16"	Green Advanced Low-E IG	PEL-N-179-01225-00001	5	3	argon	0.30	0.28	46	58									
	with grilles-between-the-glass	PEL-N-179-01226-00001				0.31	0.26	41	58									
	with integral grilles	PEL-N-179-01227-00001				0.31	0.26	41	58									
HIGH ALTITUDE GLAZING																		
11/16"	Advanced Low-E IG	PEL-N-179-01149-00001	2.5	2.5	air	0.32	0.28	53	56									
	with grilles-between-the-glass	PEL-N-179-01150-00001				0.32	0.26	47	56									
	with integral grilles	PEL-N-179-01151-00001				0.33	0.26	47	56									
11/16"	SunDefense Low-E IG	PEL-N-179-01197-00001	2.5	2.5	air	0.32	0.21	49	56									
	with grilles-between-the-glass	PEL-N-179-01198-00001				0.32	0.19	44	56									
	with integral grilles	PEL-N-179-01199-00001				0.33	0.19	44	56									
11/16"	AdvancedComfort Low-E IG	PEL-N-179-01173-00001	2.5	2.5	air	0.28	0.28	52	44					21				
	with grilles-between-the-glass	PEL-N-179-01174-00001				0.28	0.25	46	44					19				
	with integral grilles	PEL-N-179-01175-00001				0.28	0.25	46	44					19				
11/16"	NaturalSun Low-E IG	PEL-N-179-01125-00001	2.5	2.5	air	0.33	0.53	60	56					29				
	with grilles-between-the-glass	PEL-N-179-01126-00001				0.33	0.47	54	56					26				
	with integral grilles	PEL-N-179-01127-00001				0.34	0.47	54	56					25				

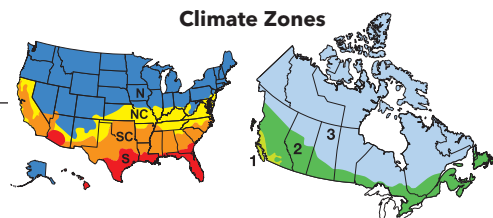
R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2015 (Version 6) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2015 initiative.

See the Product Performance section for more detailed information or visit www.energystar.gov for Energy Star guidelines.

Non Rectangular Unit thermal values will vary slightly.





DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

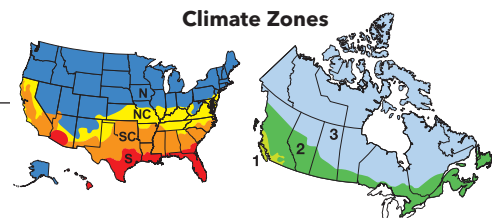
Wood



Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown							
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ²			
										Zone		ER	Zone				
										N	NC	SC	S	1	2	3	
VENT																	
11/16"	Clear IG	PEL-N-177-01101-00001	2.5	2.5	air	0.45	0.60	63	44								
	with grilles-between-the-glass	PEL-N-177-01102-00001				0.45	0.54	56	44								
	with integral grilles	PEL-N-177-01103-00001				0.46	0.54	56	44								
11/16"	Advanced Low-E IG	PEL-N-177-01137-00001	2.5	2.5	argon	0.28	0.28	54	59					21			
	with grilles-between-the-glass	PEL-N-177-01138-00001				0.28	0.26	48	59					20			
	with integral grilles	PEL-N-177-01139-00001				0.29	0.26	48	59								
11/16"	SunDefense™ Low-E IG	PEL-N-177-01185-00001	2.5	2.5	argon	0.28	0.21	50	60					17			
	with grilles-between-the-glass	PEL-N-177-01186-00001				0.28	0.19	44	60					16			
	with integral grilles	PEL-N-177-01187-00001				0.29	0.19	44	60								
11/16"	AdvancedComfort Low-E IG	PEL-N-177-01161-00001	2.5	2.5	argon	0.25	0.28	52	49					25			
	with grilles-between-the-glass	PEL-N-177-01162-00001				0.25	0.25	47	49					23			
	with integral grilles	PEL-N-177-01163-00001				0.25	0.25	47	49					23			
11/16"	NaturalSun Low-E IG	PEL-N-177-01113-00001	2.5	2.5	argon	0.29	0.53	61	59					34			
	with grilles-between-the-glass	PEL-N-177-01114-00001				0.29	0.48	54	59					31			
	with integral grilles	PEL-N-177-01115-00001				0.30	0.48	54	59					30			
TINTED GLAZING																	
11/16"	Bronze Advanced Low-E IG	PEL-N-177-01209-00001	5	3	argon	0.29	0.25	34	54								
	with grilles-between-the-glass	PEL-N-177-01210-00001				0.30	0.23	31	54								
	with integral grilles	PEL-N-177-01211-00001				0.30	0.23	31	54								
11/16"	Gray Advanced Low-E IG	PEL-N-177-01217-00001	5	3	argon	0.29	0.23	30	58								
	with grilles-between-the-glass	PEL-N-177-01218-00001				0.30	0.21	26	58								
	with integral grilles	PEL-N-177-01219-00001				0.30	0.21	26	58								
11/16"	Green Advanced Low-E IG	PEL-N-177-01225-00001	5	3	argon	0.29	0.28	47	58								
	with grilles-between-the-glass	PEL-N-177-01226-00001				0.30	0.26	42	58								
	with integral grilles	PEL-N-177-01227-00001				0.30	0.26	42	58								
HIGH ALTITUDE GLAZING																	
11/16"	Advanced Low-E IG	PEL-N-177-01149-00001	2.5	2.5	air	0.32	0.29	54	56								
	with grilles-between-the-glass	PEL-N-177-01150-00001				0.32	0.26	48	56								
	with integral grilles	PEL-N-177-01151-00001				0.33	0.26	48	56								
11/16"	SunDefense™ Low-E IG	PEL-N-177-01197-00001	2.5	2.5	air	0.31	0.21	50	56								
	with grilles-between-the-glass	PEL-N-177-01198-00001				0.31	0.19	44	56								
	with integral grilles	PEL-N-177-01199-00001				0.32	0.19	44	56								
11/16"	AdvancedComfort Low-E IG	PEL-N-177-01173-00001	2.5	2.5	air	0.27	0.28	52	45					22			
	with grilles-between-the-glass	PEL-N-177-01174-00001				0.27	0.25	47	45					20			
	with integral grilles	PEL-N-177-01175-00001				0.28	0.25	47	44					19			
11/16"	NaturalSun Low-E IG	PEL-N-177-01125-00001	2.5	2.5	air	0.33	0.53	61	55					29			
	with grilles-between-the-glass	PEL-N-177-01126-00001				0.33	0.48	54	55					26			
	with integral grilles	PEL-N-177-01127-00001				0.33	0.48	54	55					26			

R-Value = 1/U-Factor
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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad

HurricaneShield® Impact-Resistant



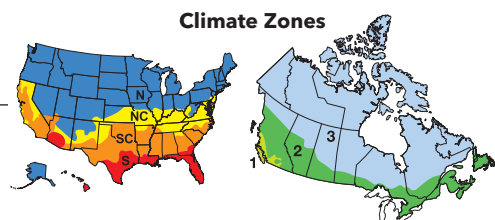
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown								
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ²				
										Zone				ER	Zone			
HURRICANESHIELD® LAMINATED IMPACT-RESISTANT										N	NC	SC	S		1	2	3	
13/16"	Clear IG	PEL-N-226-01193-00001	3	7.6	air	0.43	0.51	55	44						14			
	with grilles-between-the-glass	PEL-N-226-01194-00001				0.44	0.45	45	44						9			
	with integral grilles	PEL-N-226-01195-00001				0.43	0.45	45	44						11			
13/16"	Advanced Low-E IG	PEL-N-226-00997-00001	3	7.6	argon	0.28	0.25	47	59						18			
	with grilles-between-the-glass	PEL-N-226-00998-00001				0.29	0.23	42	58						15			
	with integral grilles	PEL-N-226-00999-00001				0.29	0.23	42	58						15			
13/16"	SunDefense™ Low-E IG	PEL-N-226-01069-00001	3	7.6	argon	0.28	0.19	43	59						14			
	with grilles-between-the-glass	PEL-N-226-01070-00001				0.28	0.17	38	59						13			
	with integral grilles	PEL-N-226-01071-00001				0.28	0.17	38	59						13			
TINTED GLAZING										N	NC	SC	S		1	2	3	
13/16"	Bronze Advanced Low-E IG	PEL-N-226-01157-00001	5	7.6	argon	0.30	0.23	19	56						14			
	with grilles-between-the-glass	PEL-N-226-01158-00001				0.32	0.21	16	56						10			
	with integral grilles	PEL-N-226-01159-00001				0.32	0.21	16	56						10			
13/16"	Gray Advanced Low-E IG	PEL-N-226-01181-00001	5	7.6	argon	0.30	0.24	24	56						15			
	with grilles-between-the-glass	PEL-N-226-01182-00001				0.32	0.21	21	56						10			
	with integral grilles	PEL-N-226-01183-00001				0.32	0.21	21	56						10			
13/16"	Green Advanced Low-E IG	PEL-N-226-01189-00001	5	7.6	argon	0.30	0.25	38	56						15			
	with grilles-between-the-glass	PEL-N-226-01190-00001				0.32	0.22	34	56						11			
	with integral grilles	PEL-N-226-01191-00001				0.32	0.22	34	56						11			

R-Value = 1/U-Factor
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 VLT % = Visible Light Transmission
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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

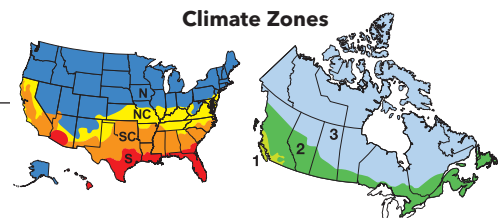
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Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)			Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown						
			Ext.	Mid.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ₂		
											Zone				ER	Zone	
TRIPLE-PANE GLAZING WITH CLEAR HGP											N	NC	SC	S	1	2	3
5/8"	Clear IG	PEL-N-121-01038-00001	2.5	2.5	2.5	air	0.35	0.52	55	57					25		
5/8"	Advanced Low-E IG	PEL-N-121-01104-00001	2.5	2.5	2.5	argon	0.26	0.25	47	60					20		
5/8"	Advanced Low-E IG	PEL-N-121-01111-00001	3	3	3	argon	0.27	0.25	46	60					19		
5/8"	SunDefense™ Low-E IG	PEL-N-121-01056-00001	2.5	2.5	2.5	argon	0.26	0.19	43	60					17		
5/8"	SunDefense™ Low-E IG	PEL-N-121-01063-00001	3	3	3	argon	0.26	0.19	42	60					17		
5/8"	SunDefense™ Low-E IG	PEL-N-121-01070-00001	4	4	4	argon	0.28	0.19	42	60							
5/8"	AdvancedComfort Low-E IG	PEL-N-121-01260-00001	2.5	2.5	2.5	argon	0.23	0.25	46	61					24		
5/8"	AdvancedComfort Low-E IG	PEL-N-121-01267-00001	3	3	3	argon	0.24	0.24	45	61					22		
5/8"	NaturalSun Low-E IG	PEL-N-121-01392-00001	2.5	2.5	2.5	argon	0.27	0.44	53	60					30		
5/8"	NaturalSun Low-E IG	PEL-N-121-01399-00001	3	3	3	argon	0.27	0.43	52	60					29		
TINTED GLAZING WITH CLEAR HGP											N	NC	SC	S	1	2	3
5/8"	Bronze Advanced Low-E IG	PEL-N-121-01141-00001	5	3	3	argon	0.28	0.22	30	59					16		
5/8"	Gray Advanced Low-E IG	PEL-N-121-01165-00001	5	3	3	argon	0.28	0.20	26	59							
5/8"	Green Advanced Low-E IG	PEL-N-121-01189-00001	5	3	3	argon	0.28	0.21	36	59							
HIGH ALTITUDE GLAZING WITH CLEAR HGP											N	NC	SC	S	1	2	3
5/8"	Advanced Low-E IG	PEL-N-121-01122-00001	2.5	2.5	2.5	air	0.28	0.25	47	59					18		
5/8"	AdvancedComfort Low-E IG	PEL-N-121-01278-00001	2.5	2.5	2.5	air	0.25	0.25	46	60					21		
5/8"	NaturalSun Low-E IG	PEL-N-121-01410-00001	2.5	2.5	2.5	air	0.29	0.44	53	59					27		

R-Value = 1/U-Factor
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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad
Vent Units



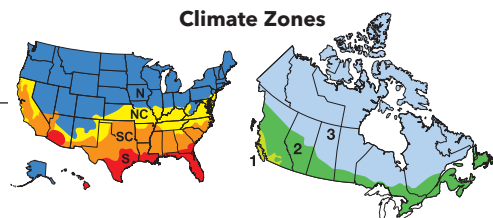
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown								
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.								
										Zone		ER	Zone					
VENT UNITS											N	NC	SC	S				
11/16"	Advanced Low-E IG	PEL-N-35-00254-00001	2.5	2.5	argon	0.30	0.30	57	54									
	with grilles-between-the-glass	PEL-N-35-00255-00001				0.30	0.27	51	54									
	with Simulated Divided Light	PEL-N-35-00256-00001				0.30	0.27	51	54									
11/16"	Advanced Low-E IG	PEL-N-35-00257-00001	3	3	argon	0.30	0.30	56	53									
	with grilles-between-the-glass	PEL-N-35-00258-00001				0.30	0.27	50	53									
	with Simulated Divided Light	PEL-N-35-00259-00001				0.30	0.27	50	53									
11/16"	SunDefense™ Low-E IG	PEL-N-35-00260-00001	2.5	2.5	argon	0.30	0.22	52	54									
	with grilles-between-the-glass	PEL-N-35-00261-00001				0.30	0.20	47	54									
	with Simulated Divided Light	PEL-N-35-00262-00001				0.30	0.20	47	54									
11/16"	SunDefense Low-E IG	PEL-N-35-00263-00001	3	3	argon	0.30	0.22	52	54									
	with grilles-between-the-glass	PEL-N-35-00264-00001				0.30	0.20	46	54									
	with Simulated Divided Light	PEL-N-35-00265-00001				0.30	0.20	46	54									
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00320-00001	2.5	2.5	argon	0.26	0.29	55	44					22				
	with grilles-between-the-glass	PEL-N-35-00321-00001				0.26	0.27	49	44					21				
	with Simulated Divided Light	PEL-N-35-00322-00001				0.26	0.27	49	44					21				
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00323-00001	3	3	argon	0.26	0.29	55	43					22				
	with grilles-between-the-glass	PEL-N-35-00324-00001				0.26	0.26	49	43					21				
	with Simulated Divided Light	PEL-N-35-00325-00001				0.26	0.26	49	43					21				
11/16"	NaturalSun Low-E IG	PEL-N-35-00272-00001	2.5	2.5	argon	0.30	0.56	64	56					33				
	with grilles-between-the-glass	PEL-N-35-00273-00001				0.30	0.50	57	56					30				
	with Simulated Divided Light	PEL-N-35-00274-00001				0.30	0.50	57	56					30				
11/16"	NaturalSun Low-E IG	PEL-N-35-00275-00001	3	3	argon	0.30	0.55	63	56					32				
	with grilles-between-the-glass	PEL-N-35-00276-00001				0.30	0.50	57	56					30				
	with Simulated Divided Light	PEL-N-35-00277-00001				0.30	0.50	57	56					30				

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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad

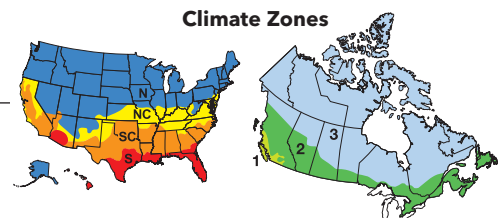
Vent High Altitude Units



Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown							
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.			Canada ²				
										Zone			ER	Zone			
HIGH ALTITUDE GLAZING										N	NC	SC	S	1	2	3	
11/16"	Advanced Low-E IG	PEL-N-35-00290-00001	2.5	2.5	air	0.34	0.30	57	51								
	with grilles-between-the-glass	PEL-N-35-00291-00001				0.34	0.27	51	51								
	with Simulated Divided Light	PEL-N-35-00292-00001				0.34	0.27	51	51								
11/16"	Advanced Low-E IG	PEL-N-35-00293-00001	3	3	air	0.34	0.30	56	50								
	with grilles-between-the-glass	PEL-N-35-00294-00001				0.34	0.27	50	50								
	with Simulated Divided Light	PEL-N-35-00295-00001				0.34	0.27	50	50								
11/16"	SunDefense™ Low-E IG	PEL-N-35-00296-00001	2.5	2.5	air	0.34	0.23	52	51								
	with grilles-between-the-glass	PEL-N-35-00297-00001				0.34	0.20	47	51								
	with Simulated Divided Light	PEL-N-35-00298-00001				0.34	0.20	47	51								
11/16"	SunDefense Low-E IG	PEL-N-35-00299-00001	3	3	air	0.34	0.23	52	51								
	with grilles-between-the-glass	PEL-N-35-00300-00001				0.34	0.21	46	51								
	with Simulated Divided Light	PEL-N-35-00301-00001				0.34	0.21	46	51								
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00326-00001	2.5	2.5	air	0.29	0.30	55	40								
	with grilles-between-the-glass	PEL-N-35-00327-00001				0.29	0.27	49	40								
	with Simulated Divided Light	PEL-N-35-00328-00001				0.29	0.27	49	40								
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00329-00001	3	3	air	0.29	0.29	55	39								
	with grilles-between-the-glass	PEL-N-35-00330-00001				0.29	0.27	49	39								
	with Simulated Divided Light	PEL-N-35-00331-00001				0.29	0.27	49	39								
11/16"	NaturalSun Low-E IG	PEL-N-35-00308-00001	2.5	2.5	air	0.34	0.56	64	52					28			
	with grilles-between-the-glass	PEL-N-35-00309-00001				0.34	0.50	57	52					25			
	with Simulated Divided Light	PEL-N-35-00310-00001				0.34	0.50	57	52					25			
11/16"	NaturalSun Low-E IG	PEL-N-35-00311-00001	3	3	air	0.34	0.55	63	51					28			
	with grilles-between-the-glass	PEL-N-35-00312-00001				0.34	0.49	57	51								
	with Simulated Divided Light	PEL-N-35-00313-00001				0.34	0.49	57	51								

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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad
Fixed Units



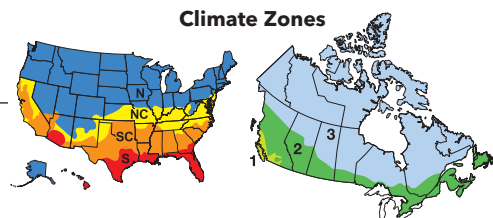
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown								
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ²				
										Zone				ER	Zone			
FIXED UNITS											N	NC	SC	S		1	2	3
11/16"	Advanced Low-E IG	PEL-N-22-00398-00001	2.5	2.5	argon	0.28	0.31	58	56						23			
	with grilles-between-the-glass	PEL-N-22-00399-00001				0.28	0.28	52	56						21			
	with Simulated Divided Light	PEL-N-22-00400-00001				0.28	0.28	52	56						21			
11/16"	Advanced Low-E IG	PEL-N-22-00401-00001	3	3	argon	0.28	0.31	58	55						23			
	with grilles-between-the-glass	PEL-N-22-00402-00001				0.28	0.28	52	55						21			
	with Simulated Divided Light	PEL-N-22-00403-00001				0.28	0.28	52	55						21			
11/16"	Advanced Low-E IG	PEL-N-22-00404-00001	4	4	argon	0.29	0.30	57	53									
	with grilles-between-the-glass	PEL-N-22-00405-00001				0.30	0.27	51	53									
	with Simulated Divided Light	PEL-N-22-00406-00001				0.29	0.27	51	53									
11/16"	SunDefense™ Low-E IG	PEL-N-22-00434-00001	2.5	2.5	argon	0.28	0.23	54	55						18			
	with grilles-between-the-glass	PEL-N-22-00435-00001				0.28	0.21	48	55						17			
	with Simulated Divided Light	PEL-N-22-00436-00001				0.28	0.21	48	55						17			
11/16"	SunDefense Low-E IG	PEL-N-22-00437-00001	3	3	argon	0.28	0.23	53	54						18			
	with grilles-between-the-glass	PEL-N-22-00438-00001				0.28	0.21	48	54						17			
	with Simulated Divided Light	PEL-N-22-00439-00001				0.28	0.21	48	54						17			
11/16"	SunDefense Low-E IG	PEL-N-22-00440-00001	4	4	argon	0.29	0.23	53	53									
	with grilles-between-the-glass	PEL-N-22-00441-00001				0.30	0.21	47	53									
	with Simulated Divided Light	PEL-N-22-00442-00001				0.29	0.21	47	53									
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00497-00001	2.5	2.5	argon	0.24	0.30	57	45						27			
	with grilles-between-the-glass	PEL-N-22-00498-00001				0.24	0.37	51	45						31			
	with Simulated Divided Light	PEL-N-22-00499-00001				0.24	0.27	51	45						26			
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00500-00001	3	3	argon	0.24	0.30	56	44						27			
	with grilles-between-the-glass	PEL-N-22-00501-00001				0.24	0.27	50	44						26			
	with Simulated Divided Light	PEL-N-22-00502-00001				0.24	0.27	50	44						26			
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00503-00001	4	4	argon	0.25	0.30	56	42						26			
	with grilles-between-the-glass	PEL-N-22-00504-00001				0.26	0.27	50	42						23			
	with Simulated Divided Light	PEL-N-22-00505-00001				0.25	0.27	50	42						24			
11/16"	NaturalSun Low-E IG	PEL-N-22-00416-00001	2.5	2.5	argon	0.31	0.59	66	55						35			
	with grilles-between-the-glass	PEL-N-22-00417-00001				0.31	0.53	59	55						32			
	with Simulated Divided Light	PEL-N-22-00418-00001				0.31	0.53	59	55						32			
11/16"	NaturalSun Low-E IG	PEL-N-22-00419-00001	3	3	argon	0.31	0.58	65	54						35			
	with grilles-between-the-glass	PEL-N-22-00420-00001				0.31	0.52	58	54						31			
	with Simulated Divided Light	PEL-N-22-00421-00001				0.31	0.52	58	54						31			
11/16"	NaturalSun Low-E IG	PEL-N-22-00422-00001	4	4	argon	0.32	0.56	64	52						32			
	with grilles-between-the-glass	PEL-N-22-00423-00001				0.33	0.50	58	52						28			
	with Simulated Divided Light	PEL-N-22-00424-00001				0.32	0.50	58	52						29			

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DOUBLE-HUNG

GLAZING PERFORMANCE - TOTAL UNIT

Clad

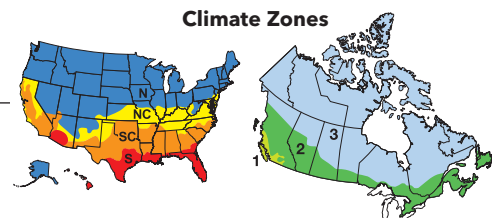
Fixed High Altitude Units



Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown							
			Ext.	Int.		U-Factor	SHGC	VLT %	CR	U. S.			Canada ²				
										Zone			ER	Zone			
FIXED UNITS - HIGH ALTITUDE GLAZING										N	NC	SC	S	1	2	3	
11/16"	Advanced Low-E IG	PEL-N-22-00407-00001	2.5	2.5	air	0.32	0.31	58	53								
	with grilles-between-the-glass	PEL-N-22-00408-00001				0.32	0.28	52	53								
	with Simulated Divided Light	PEL-N-22-00409-00001				0.32	0.28	52	53								
11/16"	Advanced Low-E IG	PEL-N-22-00410-00001	3	3	air	0.32	0.31	58	52								
	with grilles-between-the-glass	PEL-N-22-00411-00001				0.32	0.28	52	52								
	with Simulated Divided Light	PEL-N-22-00412-00001				0.32	0.28	52	52								
11/16"	Advanced Low-E IG	PEL-N-22-00413-00001	4	4	air	0.34	0.31	57	50								
	with grilles-between-the-glass	PEL-N-22-00414-00001				0.35	0.28	51	50								
	with Simulated Divided Light	PEL-N-22-00415-00001				0.34	0.28	51	50								
11/16"	SunDefense™ Low-E IG	PEL-N-22-00443-00001	2.5	2.5	air	0.32	0.23	54	53								
	with grilles-between-the-glass	PEL-N-22-00444-00001				0.32	0.21	48	53								
	with Simulated Divided Light	PEL-N-22-00445-00001				0.32	0.21	48	53								
11/16"	SunDefense Low-E IG	PEL-N-22-00446-00001	3	3	air	0.32	0.23	53	52								
	with grilles-between-the-glass	PEL-N-22-00447-00001				0.32	0.21	48	52								
	with Simulated Divided Light	PEL-N-22-00448-00001				0.32	0.21	48	52								
11/16"	SunDefense Low-E IG	PEL-N-22-00449-00001	4	4	air	0.34	0.24	53	50								
	with grilles-between-the-glass	PEL-N-22-00450-00001				0.35	0.21	47	50								
	with Simulated Divided Light	PEL-N-22-00451-00001				0.34	0.21	47	50								
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00506-00001	2.5	2.5	argon	0.27	0.30	57	42					24			
	with grilles-between-the-glass	PEL-N-22-00507-00001				0.27	0.27	51	42					22			
	with Simulated Divided Light	PEL-N-22-00508-00001				0.27	0.27	51	42					22			
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00509-00001	3	3	argon	0.27	0.30	56	40					24			
	with grilles-between-the-glass	PEL-N-22-00510-00001				0.27	0.27	50	40					22			
	with Simulated Divided Light	PEL-N-22-00511-00001				0.27	0.27	50	40					22			
11/16"	AdvancedComfort Low-E IG	PEL-N-22-00512-00001	4	4	argon	0.28	0.30	56	39					22			
	with grilles-between-the-glass	PEL-N-22-00513-00001				0.29	0.27	50	39					19			
	with Simulated Divided Light	PEL-N-22-00514-00001				0.28	0.27	50	39					21			
11/16"	NaturalSun Low-E IG	PEL-N-22-00425-00001	2.5	2.5	argon	0.34	0.58	66	52					31			
	with grilles-between-the-glass	PEL-N-22-00426-00001				0.34	0.53	59	52					28			
	with Simulated Divided Light	PEL-N-22-00427-00001				0.34	0.53	59	52					28			
11/16"	NaturalSun Low-E IG	PEL-N-22-00428-00001	3	3	argon	0.34	0.57	65	51					30			
	with grilles-between-the-glass	PEL-N-22-00429-00001				0.34	0.52	58	51					28			
	with Simulated Divided Light	PEL-N-22-00430-00001				0.34	0.52	58	51					28			
11/16"	NaturalSun Low-E IG	PEL-N-22-00431-00001	4	4	argon	0.36	0.56	64	49					27			
	with grilles-between-the-glass	PEL-N-22-00432-00001				0.37	0.50	58	49					23			
	with Simulated Divided Light	PEL-N-22-00433-00001				0.36	0.50	58	49					24			

R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2015 (Version 6) criteria.
 (2) The values shown are based on Canada's updated ENERGY STAR® 2015 initiative.
 See the Product Performance section for more detailed information or visit www.energystar.gov for Energy Star guidelines.





DOUBLE-HUNG

SOUND TRANSMISSION CLASS

Outdoor-Indoor Transmission Class



Product	Frame Size Tested ₁	Glazing System			STC Rating	OITC Rating	
		Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness			Third Pane Thickness (HGP)
ARCHITECT SERIES WOOD LX WINDOW	WITH INTEGRAL GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	27	24
	45" x 65"	11/16"	6.1mm Laminated	3mm	–	34	29
	WITH REMOVABLE OR NO GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	26	22
	45" x 65"	11/16"	3mm	3mm	–	29	24
ARCHITECT SERIES CLAD LX OR SE WINDOW	WITH INTEGRAL GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	27	25
	45" x 65"	11/16"	3mm	3mm	–	29	25
	45" x 65"	11/16"	5mm	3mm	–	31	27
	WITH REMOVABLE OR NO GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	26	22
	45" x 65"	11/16"	3mm	3mm	–	28	23
	45" x 65"	11/16"	5mm	3mm	–	30	26
ARCHITECT SERIES CLAD HURRICANESHIELD® IMPACT-RESISTANT DOUBLE-HUNG	WITH INTEGRAL GRILLES						
	48" x 60"	13/16"	3mm	7.6mm PVB	–	34	30
	WITH REMOVABLE, NO GRILLES, OR GBG						
48" x 60"	13/16"	3mm	7.6mm PVB	–	34	28	
DESIGNER SERIES CLAD DOUBLE-HUNG	TRIPLE-PANE GLAZING						
	45" x 65"	5/8"	2.5mm	2.5mm	2.5mm	31	24
	45" x 65"	5/8"	6.1mm Laminated	3mm	2.5mm	33	27
PELLA PROLINE 450 CLAD DOUBLE-HUNG	37" x 59"	11/16"	2.5mm	2.5mm	–	25	22

(-) = Not Available



DOUBLE-HUNG

COMBINATION ASSEMBLIES

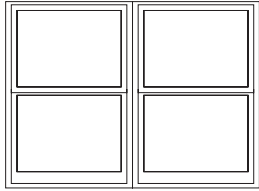
Rectangular Units



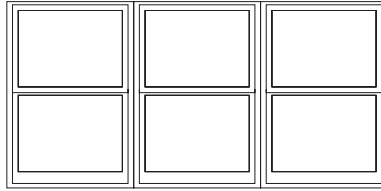
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullered together by a combination or reinforcing mullion.

Pella window combinations are available in an endless variety of arrangements. Below are available factory-assembled combinations. Some units can be fixed or vent depending on availability, and may vary between Architect Series®, Designer Series® and ProLine®. Refer to Clad/Wood Overview Section for typical combinations requirements, and limitations related to mulling various combinations.

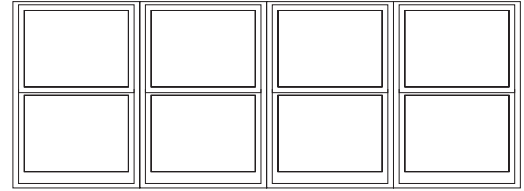
Contact your local Pella sales representative for more information.



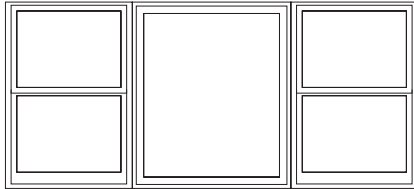
Two-Wide



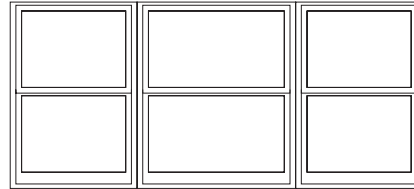
Three-Wide Equal



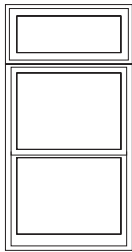
Four-Wide Equal



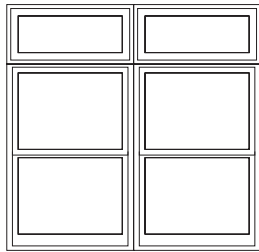
Center Fixed with Flankers



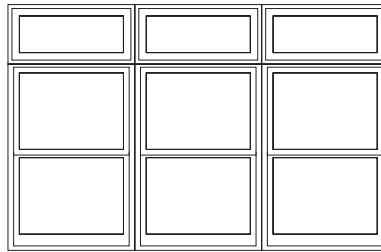
Three-Wide Unequal



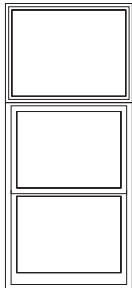
Transom over Single



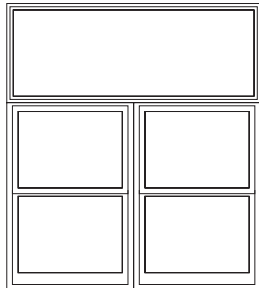
Two-Wide Transoms over Two-Wide



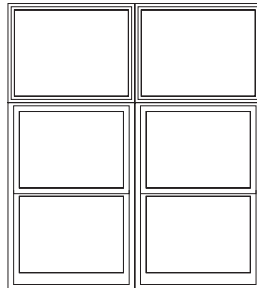
Three-Wide Transoms over Three-Wide



Clad Frame over Single



Single Clad Frame over Two-Wide



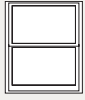
Two Wide Clad Frame over Two-Wide

Refer to Clad/Wood Overview Section for standard size range charts.



Click to view Clad-Wood Combinations Sections

- [Combination Recommendations Downloadable PDF.](#)
- [Combination Size Tables Downloadable PDF.](#)



DOUBLE-HUNG

COMBINATION ASSEMBLIES

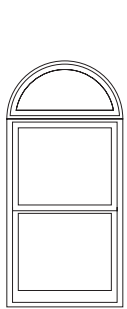
Arch Top Units



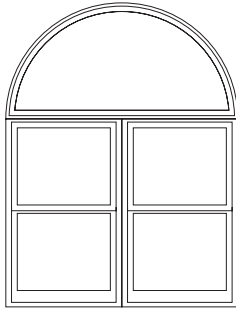
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullered together by a combination or reinforcing mullion.

Pella window combinations are available in an endless variety of arrangements. Below are available factory-assembled combinations. Some units can be fixed or vent depending on availability, and may vary between Architect Series®, Designer Series® and ProLine®. Refer to Clad/Wood Overview Section for typical combinations requirements, and limitations related to mulling various combinations.

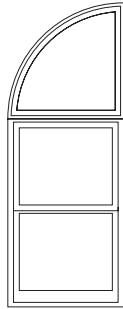
Contact your local Pella sales representative for more information.



Half Circle over Single



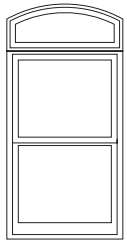
Half Circle over Two-Wide



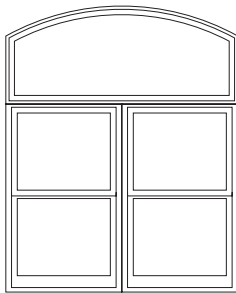
Left Quarter Circle over Single



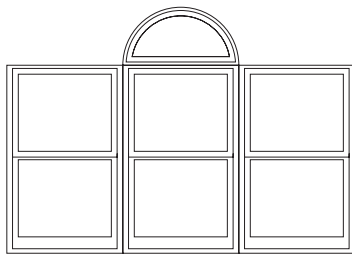
Right Quarter Circle over Single



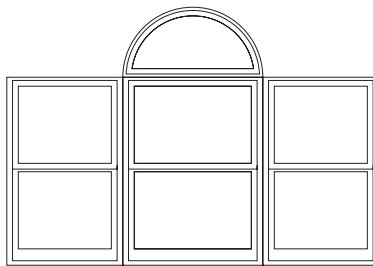
Arch Head over Single



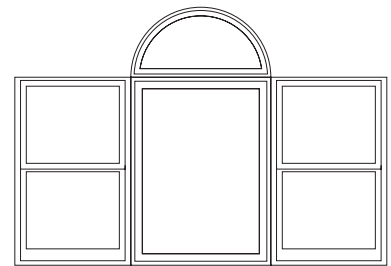
Arch Head over Two-Wide



Half Circle centered on Three-Wide Equal



Half Circle over Three-Wide Unequal



Half Circle over Center Fixed with Flankers

Refer to Clad/Wood Overview Section for standard size range charts.



Click to view Clad-Wood Combinations Sections

- [Combination Recommendations Downloadable PDF.](#)
- [Combination Size Tables Downloadable PDF.](#)



DOUBLE-HUNG

HURRICANESHIELD® IMPACT-RESISTANT GLAZING

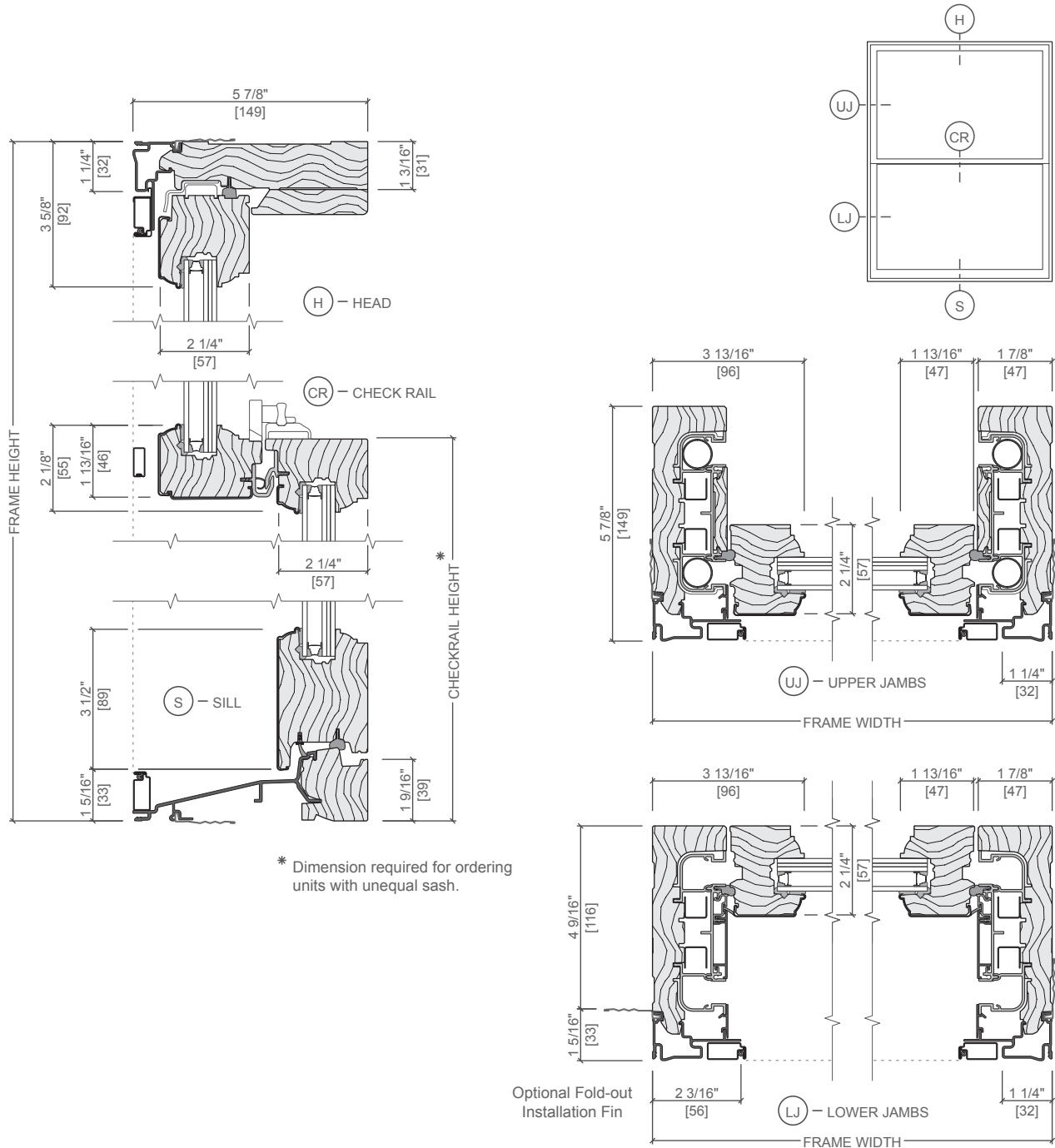
7/8" Laminated Insulated Glass

Aluminum-Clad Wood



For a complete list of the HurricaneShield Impact-Resistant Glazing ratings, refer to the Coastal and High Winds section.

Material	Design Pressure Large Missile Rating D		Hallmark Certified	Florida Product Approval System
	Minimum	Maximum		
PVB ₁				
Clad	+50/-50	+50/-50	411-H-979	FL11366

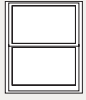


(1) All impact sizes and glass types are certified for wind zone 3, large missile rating D. Not approved for use in Miami-Dade County.



Click to view Clad-Wood HurricaneShield Section

• [Double-Hung HurricaneShield Downloadable PDF.](#)



DOUBLE-HUNG

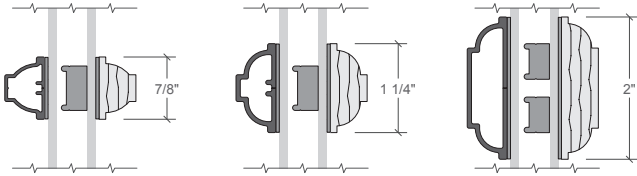
GRILLE TYPES

Typical Grille Profiles

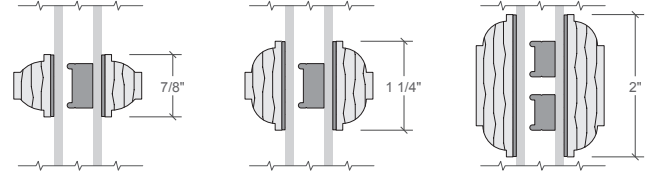


Integral Light Technology

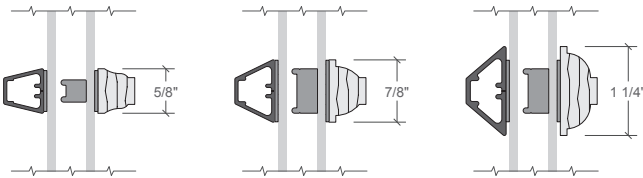
Ogee Grilles
Clad Exterior - Wood Interior₂



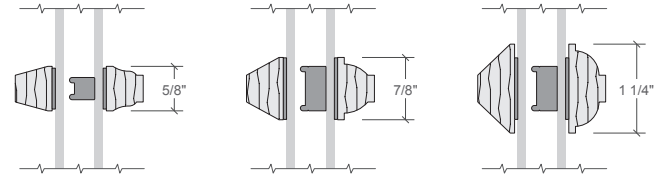
Ogee Grilles
Wood Exterior - Wood Interior₃



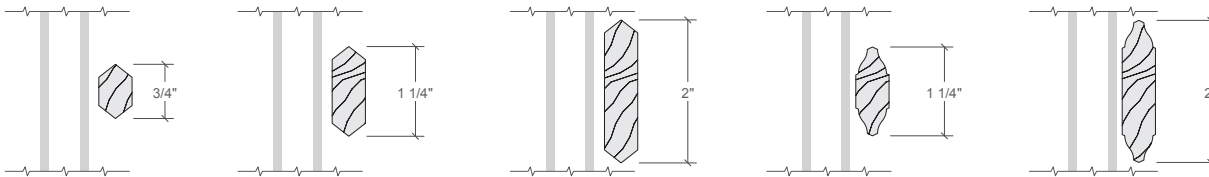
Putty Glaze and Ogee Grilles
Clad Exterior - Wood Interior_{1,2}



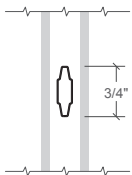
Putty Glaze and Ogee Grilles
Wood Exterior - Wood Interior_{1,3}



Removable Interior Pine Grilles



Grilles-Between-the-Glass



(1) Additional profile options Putty Exterior/Putty Interior, Ogee Exterior/Putty Interior are also available.

(2) Available in Pine, Mahogany, Alder or Douglas Fir to match complete unit.

(3) Available in Pine or Mahogany to match complete unit.



DOUBLE-HUNG

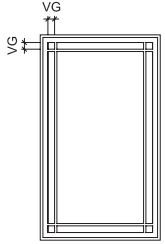
GRILLE TYPES

Typical Grille Patterns

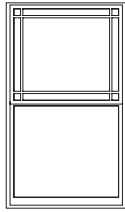


Integral light technology® Grilles and Removable Grille

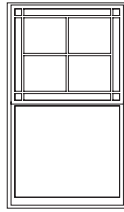
PRAIRIE LITE PATTERNS



9-Lite
(Fixed Units)



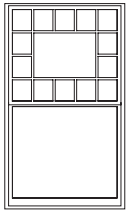
9-Lite



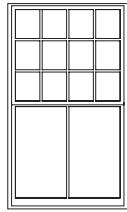
12-Lite

Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
Available in transoms ≥ 1'3" height and width.
Available in all standard and special sizes.

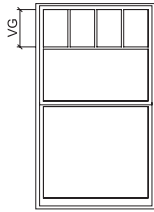
OTHER AVAILABLE PATTERNS



Victorian



New England



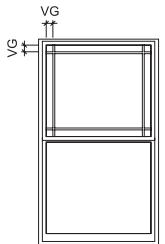
Top Row



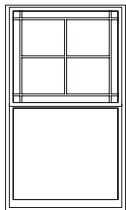
Traditional

VG = Visible Glass
Lite dimensions noted can vary.
For size and pattern availability contact your local Pella sales representative.

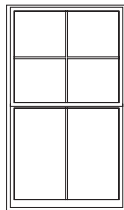
Grilles-Between-the-Glass



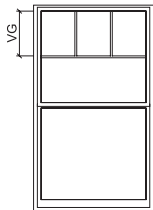
9-Lite
Prairie



12-Lite
Prairie



Cross



Top Row

Prairie

- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
- Available in transoms ≥ 1'3" height and width.

Cross

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

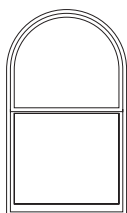
Top Row

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

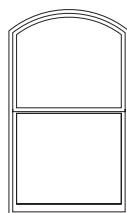
For traditional patterns, see size tables.

CUSTOM SHAPES

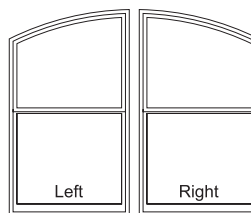
Pella Architect Series single-hung windows are available in custom shapes shown below, and additional shapes per drawing. For specifications, size limitations, and details on these units, contact your local Pella sales representative.



Springline



Arch Head



Partial Arch Head



DOUBLE-HUNG

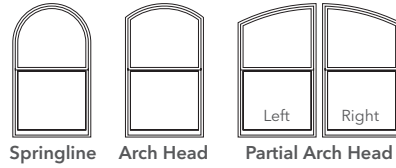
SIZE TABLES

Wood and Aluminum-Clad Wood
Single- and Double-Hung



Fixed Transoms

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"	3' 9 3/4"	4' 0 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(375) (356)								
(451) (432)								
(654) (635)								



Pella Architect Series single-hung windows are available in shapes shown above, and additional custom shapes per drawing. For specifications, size limitations, and details on these units, contact your local Pella sales representative.

Vent Units

(908) (889)								
(1 060) (1 041)								
(1 213) (1 194)								
(1 365) (1 346)								
(1 467) (1 448)								
(1 518) (1 499)								
(1 670) (1 651)								

Opening Dimensions

CLAD EXTERIOR UNITS:
Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:
Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY	
	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood
Single- and Double-Hung



Vent Units

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"	3' 9 3/4"	4' 0 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
Height	5' 11 3/4"							
	5' 11"							
	6' 5 3/4"							
Height	6' 5"							
	7' 0"							
Height	7' 0 3/4"							
	7' 0"							
Unit	2171	2571	2971	3371	3771	4171	4571	4871
Unit	2177	2577	2977	3377	3777	4177	4577	4877
Unit	2184	2584	2984	3384	3784	4184	4584	4884

Special Size Frame Dimensions*

SASH CONFIGURATION	VENT-EQUAL	COTTAGE	FIXED
SASH GLASS RATIO TOP % : BOTTOM %	50 : 50	40 : 60	NA
SHORTEST UNIT FRAME SIZE	24-3/8" (889)	42-1/4" (1 073)	17" (432)
TALLEST UNIT FRAME SIZE	96" (2 438)	81" (2 057)	71" (1 803)
UNIT FRAME WIDTH RANGE	14" to 48" (533 to 1 219)	21" to 48" (533 to 1 219)	17" to 59" (432 to 1 499)

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY	
	Width	Height	Width	Height
Brickmould				
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

* Available within size range shown.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood
Single- and Double-Hung Fixed



Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(908) (889)				
	4135	4735	5335	5935
(1 060) (1 041)				
	4141	4741	5341	5941
(1 213) (1 194)				
	4147	4747	5347	5947
(1 365) (1 346)				
	4153	4753	5353	5953
(1 467) (1 448)				
	4157	4757	5357	5957
(1 518) (1 499)				
	4159	4759	5359	5959
(1 670) (1 651)				
	4165	4765	5365	5965
(1 822) (1 803)				
	4171	4771	5371	5971

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY		
	Brickmould	Width	Height	Width	Height
STD		+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"		+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.

Grille patterns will align with companion hung window with equal sash split.

5-lite high grille patterns may be ordered in 5'5" fixed units to match cottage sash vent units.

Grilles are equally-divided on fixed units with odd-number lites high.



DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood Cottage Sash



VENT UNITS

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"	3' 9 3/4"	4' 0 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(1 060) (1 041)	VG2141	VG2541	VG2941	VG3341	VG3741	VG4141	VG4541	VG4841
(1 213) (1 194)	VG2147	VG2547	VG2947	VG3347	VG3747	VG4147	VG4547	VG4847
(1 365) (1 346)	VG2153	VG2553	VG2953	VG3353	VG3753	VG4153	VG4553	VG4853
(1 467) (1 448)	VG2157	VG2557	VG2957	VG3357	VG3757	VG4157	VG4557	VG4857
(1 518) (1 499)	VG2159	VG2559	VG2959	VG3359	VG3759	VG4159	VG4559	VG4859
(1 670) (1 651)	VG2165	VG2565	VG2965	VG3365	VG3765	VG4165	VG4565	VG4865
(1 822) (1 803)	VG2171	VG2571	VG2971	VG3371 E1	VG3771 E	VG4171 E	VG4571 E	VG4871 E
(1 822) (1 803)	VG2177	VG2577	VG2977	VG3377 E1	VG3777 E	VG4177 E	VG4577 E	VG4877 E

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY	
Brickmould	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.

Cottage units have unequal sash split. Sash glass ratio is 40% upper sash to 60% Lower sash.

Vent variable units have unequal sash split. Sash glass ratio is determined by checkrail heights. See unit sections for dimension requirements.



DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood
Replacement Double-Hung and Transoms



Transoms

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(375) (356)	23.5 x 14	27.5 x 14	29.5 x 14	31.5 x 14	35.5 x 14	39.5 x 14	41.5 x 14
(451) (432)	23.5 x 17	27.5 x 17	29.5 x 17	31.5 x 17	35.5 x 17	39.5 x 17	41.5 x 17
(654) (635)	23.5 x 25	27.5 x 25	29.5 x 25	31.5 x 25	35.5 x 25	39.5 x 25	41.5 x 25

Vent Units

(921) (902)	23.5 x 35.5	27.5 x 35.5	29.5 x 35.5	31.5 x 35.5	35.5 x 35.5	39.5 x 35.5	41.5 x 35.5
(972) (953)	23.5 x 37.5	27.5 x 37.5	29.5 x 37.5	31.5 x 37.5	35.5 x 37.5	39.5 x 37.5	41.5 x 37.5
(1 073) (1 054)	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156)	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206)	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 308)	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359)	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461)	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5	35.5 x 57.5 E	39.5 x 57.5 E	41.5 x 57.5 E

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY		
	Brickmould	Width	Height	Width	Height
STD		+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"		+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

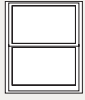
E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



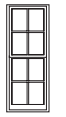
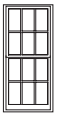
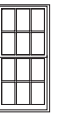
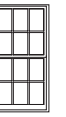
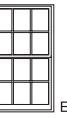
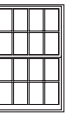
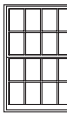
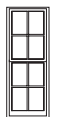
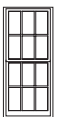
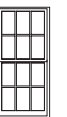
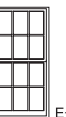
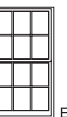
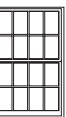
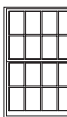
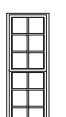
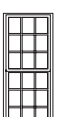
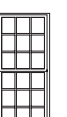
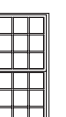
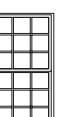
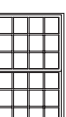
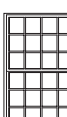




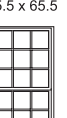
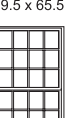
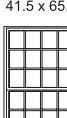
DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood Replacement Double-Hung



Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 530) (1 511) 5' 0 1/4"	 23.5 x 59.5	 27.5 x 59.5	 29.5 x 59.5	 31.5 x 59.5	 35.5 x 59.5 E ₁	 39.5 x 59.5 E	 41.5 x 59.5 E
(1 581) (1 562) 5' 2 1/4"	 23.5 x 61.5	 27.5 x 61.5	 29.5 x 61.5	 31.5 x 61.5 E ₁	 35.5 x 61.5 E	 39.5 x 61.5 E	 41.5 x 61.5 E
(1 683) (1 664) 5' 6 1/4"	 23.5 x 65.5	 27.5 x 65.5	 29.5 x 65.5	 31.5 x 65.5 E ₁	 35.5 x 65.5 E	 39.5 x 65.5 E	 41.5 x 65.5 E
(1 835) (1 816) 6' 0 1/4"	 23.5 x 71.5	 27.5 x 71.5 E ₁	 29.5 x 71.5 E ₁	 31.5 x 71.5 E	 35.5 x 71.5 E	 39.5 x 71.5 E	 41.5 x 71.5 E

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY	
Brickmould	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Wood and Aluminum-Clad Wood Replacement Cottage



Cottage Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 073) (1 054) 3' 6 1/4" 3' 5 1/2"	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156) 3' 10 1/4" 3' 9 1/2"	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206) 4' 0 1/4" 3' 11 1/2"	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 308) 4' 4 1/4" 4' 3 1/2"	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359) 4' 6 1/4" 4' 5 1/2"	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461) 4' 10 1/4" 4' 9 1/2"	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5	35.5 x 57.5	39.5 x 57.5	41.5 x 57.5
(1 530) (1 511) 5' 0 1/4" 4' 11 1/2"	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5	35.5 x 59.5	39.5 x 59.5	41.5 x 59.5
(1 581) (1 561.5) 5' 2 1/4" 5' 1 1/2"	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5	31.5 x 61.5	35.5 x 61.5	39.5 x 61.5	41.5 x 61.5
(1 683) (1 664) 5' 6 1/4" 5' 5 1/2"	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5	31.5 x 65.5	35.5 x 65.5	39.5 x 65.5	41.5 x 65.5
(1 835) (1 816) 6' 0 1/4" 5' 11 1/2"	23.5 x 71.5	27.5 x 71.5	29.5 x 71.5	31.5 x 71.5	35.5 x 71.5 E ₁	39.5 x 71.5 E	41.5 x 71.5 E

Opening Dimensions

CLAD EXTERIOR UNITS:

Dimensions shown in standard size tables are rough opening dimensions.

WOOD EXTERIOR UNITS:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

FRAME	ROUGH		MASONRY	
Brickmould	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with HurricaneShield® impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



































DOUBLE-HUNG

















SIZE TABLES

Wood and Aluminum-Clad Wood
Replacement Fixed Units



Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(921) (902)				
	41 x 35.5	47 x 35.5	53 x 35.5	59 x 35.5
(972) (953)				
	41 x 37.5	47 x 37.5	53 x 37.5	59 x 37.5
(1 073) (1 054)				
	41 x 41.5	47 x 41.5	53 x 41.5	59 x 41.5
(1 175) (1 156)				
	41 x 45.5	47 x 45.5	53 x 45.5	59 x 45.5
(1 226) (1 206)				
	41 x 47.5	47 x 47.5	53 x 47.5	59 x 47.5
(1 327) (1 308)				
	41 x 51.5	47 x 51.5	53 x 51.5	59 x 51.5
(1 378) (1 359)				
	41 x 53.5	47 x 53.5	53 x 53.5	59 x 53.5
(1 473) (1 461)				
	41 x 57.5	47 x 57.5	53 x 57.5	59 x 57.5

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 530) (1 511)				
	41 x 59.5	47 x 59.5	53 x 59.5	59 x 59.5
(1 581) (1 562)				
	41 x 61.5	47 x 61.5	53 x 61.5	59 x 61.5
(1 683) (1 664)				
	41 x 65.5	47 x 65.5	53 x 65.5	59 x 65.5
(1 835) (1 816)				
	41 x 71.5	47 x 71.5	53 x 71.5	59 x 71.5

Not to scale.
Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



DOUBLE-HUNG

DESIGN DATA

LX and SE Aluminum-Clad Wood

LX Wood Exterior



VENT EQUAL SASH UNITS FOR SINGLE- AND DOUBLE-HUNG

Unit	Egress	Clear Opening (Inches)			Vent Area Ft ²		Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width		Height	Clad	Wood		Annealed	Tempered	Clad	Wood
		Clad	Wood								
2135		17-9/16	17-11/16	13	1.5	1.5	2.8	2.5	3	CW50	CW45
2141		17-9/16	17-11/16	16	1.9	1.9	3.4	2.5	3	CW50	CW45
2147		17-9/16	17-11/16	19	2.3	2.3	4.0	2.5	3	CW50	CW45
2153		17-9/16	17-11/16	22	2.6	2.6	4.7	2.5	3	CW50	CW45
2157		17-9/16	17-11/16	24	2.9	2.9	5.1	2.5	3	CW50	CW45
2159		17-9/16	17-11/16	25	3	3	5.3	2.5	3	CW50	CW45
2165		17-9/16	17-11/16	28	3.4	3.4	5.9	2.5	3	CW50	CW45
2171		17-9/16	17-11/16	31	3.7	3.8	6.5	2.5	3	CW50	CW45
2177		17-9/16	17-11/16	34	4.1	4.1	7.2	2.5	3	CW50	CW45
2184		17-9/16	17-11/16	37.5	4.5	4.5	7.9	2.5	3	CW40	CW40
2535		21-9/16	21-11/16	13	1.9	1.9	3.5	2.5	3	CW50	CW45
2541		21-9/16	21-11/16	16	2.3	2.4	4.3	2.5	3	CW50	CW45
2547		21-9/16	21-11/16	19	2.8	2.8	5.1	2.5	3	CW50	CW45
2553		21-9/16	21-11/16	22	3.2	3.3	5.9	2.5	3	CW50	CW45
2557		21-9/16	21-11/16	24	3.5	3.6	6.4	2.5	3	CW50	CW45
2559		21-9/16	21-11/16	25	3.7	3.7	6.7	2.5	3	CW50	CW45
2565		21-9/16	21-11/16	28	4.1	4.2	7.5	2.5	3	CW50	CW45
2571		21-9/16	21-11/16	31	4.6	4.6	8.3	2.5	3	CW50	CW45
2577	E ₁	21-9/16	21-11/16	34	5	5.1	9.1	2.5	3	CW50	CW45
2584	E ₁	21-9/16	21-11/16	37.5	5.6	5.6	10.0	2.5	3	CW40	CW40
2935		25-9/16	25-11/16	13	2.3	2.3	4.2	2.5	3	CW50	CW45
2941		25-9/16	25-11/16	16	2.8	2.8	5.2	2.5	3	CW50	CW45
2947		25-9/16	25-11/16	19	3.3	3.3	6.2	2.5	3	CW50	CW45
2953		25-9/16	25-11/16	22	3.9	3.9	7.1	2.5	3	CW50	CW45
2957		25-9/16	25-11/16	24	4.2	4.2	7.8	2.5	3	CW50	CW45
2959		25-9/16	25-11/16	25	4.4	4.4	8.1	2.5	3	CW50	CW45
2965		25-9/16	25-11/16	28	4.9	4.9	9.1	2.5	3	CW50	CW45
2971	E ₁	25-9/16	25-11/16	31	5.5	5.5	10.0	2.5	3	CW50	CW45
2977	E	25-9/16	25-11/16	34	6	6	11.0	2.5	3	CW50	CW45
2984	E	25-9/16	25-11/16	37.5	6.6	6.6	12.1	2.5	3	CW40	CW40
3335		29-9/16	29-11/16	13	2.6	2.6	5.0	2.5	3	CW50	CW45
3341		29-9/16	29-11/16	16	3.2	3.2	6.1	2.5	3	CW50	CW45
3347		29-9/16	29-11/16	19	3.9	3.9	7.2	2.5	3	CW50	CW45
3353		29-9/16	29-11/16	22	4.5	4.5	8.4	2.5	3	CW50	CW45
3357		29-9/16	29-11/16	24	4.9	4.9	9.1	2.5	3	CW50	CW45
3359	E ₁	29-9/16	29-11/16	25	5.1	5.1	9.5	2.5	3	CW50	CW45
3365	E	29-9/16	29-11/16	28	5.7	5.7	10.6	2.5	3	CW50	CW45
3371	E	29-9/16	29-11/16	31	6.3	6.3	11.8	2.5	3	CW50	CW45
3377	E	29-9/16	29-11/16	34	6.9	7	12.9	2.5	3	CW50	CW45
3384	E	29-9/16	29-11/16	37.5	7.7	7.7	14.2	2.5	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum design pressure when glazed with appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

LX and SE Aluminum-Clad Wood

LX Wood Exterior



VENT EQUAL SASH UNITS FOR SINGLE- AND DOUBLE-HUNG

Unit	Egress	Clear Opening (Inches)			Vent Area Ft ²		Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width		Height	Clad	Wood		Annealed	Tempered	Clad	Wood
		Clad	Wood								
3735		33-9/16	33-11/16	13	3	3	5.7	2.5	3	CW50	CW45
3741		33-9/16	33-11/16	16	3.7	3.7	7.0	2.5	3	CW50	CW45
3747		33-9/16	33-11/16	19	4.4	4.4	8.3	2.5	3	CW50	CW45
3753		33-9/16	33-11/16	22	5.1	5.1	9.6	2.5	3	CW50	CW45
3757	E ₁	33-9/16	33-11/16	24	5.5	5.6	10.5	2.5	3	CW50	CW45
3759	E	33-9/16	33-11/16	25	5.8	5.8	10.9	2.5	3	CW50	CW45
3765	E	33-9/16	33-11/16	28	6.5	6.5	12.2	2.5	3	CW50	CW45
3771	E	33-9/16	33-11/16	31	7.2	7.2	13.5	2.5	3	CW50	CW45
3777	E	33-9/16	33-11/16	34	7.9	7.9	14.8	2.5	3	CW50	CW45
3784	E	33-9/16	33-11/16	37.5	8.7	8.7	16.3	2.5	3	CW40	CW40
4135		37-9/16	37-11/16	13	3.3	3.3	6.5	2.5	3	CW50	CW45
4141		37-9/16	37-11/16	16	4.1	4.1	7.9	2.5	3	CW50	CW45
4147		37-9/16	37-11/16	19	4.9	4.9	9.4	2.5	3	CW50	CW45
4153		37-9/16	37-11/16	22	5.7	5.7	10.9	2.5	3	CW50	CW45
4157	E	37-9/16	37-11/16	24	6.2	6.2	11.8	2.5	3	CW50	CW45
4159	E	37-9/16	37-11/16	25	6.5	6.5	12.3	2.5	3	CW50	CW45
4165	E	37-9/16	37-11/16	28	7.3	7.3	13.8	2.5	3	CW50	CW45
4171	E	37-9/16	37-11/16	31	8	8.1	15.2	2.5	3	CW50	CW45
4177	E	37-9/16	37-11/16	34	8.8	8.8	16.7	2.5	3	CW45	CW45
4184	E	37-9/16	37-11/16	37.5	9.7	9.8	18.4	2.5	3	CW40	CW40
4535		41-9/16	41-11/16	13	3.7	3.7	7.2	2.5	3	CW50	CW45
4541		41-9/16	41-11/16	16	4.6	4.6	8.8	2.5	3	CW50	CW45
4547		41-9/16	41-11/16	19	5.4	5.4	10.5	2.5	3	CW50	CW45
4553		41-9/16	41-11/16	22	6.3	6.3	12.1	2.5	3	CW50	CW45
4557	E	41-9/16	41-11/16	24	6.9	6.9	13.2	2.5	3	CW50	CW45
4559	E	41-9/16	41-11/16	25	7.2	7.2	13.7	2.5	3	CW50	CW45
4565	E	41-9/16	41-11/16	28	8	8.1	15.4	2.5	3	CW50	CW45
4571	E	41-9/16	41-11/16	31	8.9	8.9	17.0	2.5	3	CW45	CW45
4577	E	41-9/16	41-11/16	34	9.8	9.8	18.6	2.5	3	CW45	CW45
4584	E	41-9/16	41-11/16	37.5	10.8	10.8	20.5	3	3	CW40	CW40
4835		44-9/16	44-11/16	13	4	4	7.8	2.5	3	CW50	CW45
4841		44-9/16	44-11/16	16	4.9	4.9	9.5	2.5	3	CW50	CW45
4847		44-9/16	44-11/16	19	5.8	5.8	11.3	2.5	3	CW50	CW45
4853		44-9/16	44-11/16	22	6.8	6.8	13.0	2.5	3	CW50	CW45
4857	E	44-9/16	44-11/16	24	7.4	7.4	14.2	2.5	3	CW50	CW45
4859	E	44-9/16	44-11/16	25	7.7	7.7	14.8	2.5	3	CW50	CW45
4865	E	44-9/16	44-11/16	28	8.6	8.6	16.5	2.5	3	CW45	CW45
4871	E	44-9/16	44-11/16	31	9.5	9.6	18.3	2.5	3	CW45	CW45
4877	E	44-9/16	44-11/16	34	10.5	10.5	20.1	3	3	CW45	CW45
4884	E	44-9/16	44-11/16	37.5	11.6	11.6	22.1	3	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood



FIXED UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
4135	7.2	2.5	3	CW50
4141	8.6	2.5	3	CW50
4147	10.1	3	3	CW50
4153	11.6	3	3	CW50
4157	12.5	3	3	CW50
4165	14.5	3	3	CW50
4171	16.0	3	3	CW45/CW50
4735	8.4	2.5	3	CW50
4741	10.1	3	3	CW50
4747	11.8	3	3	CW50
4753	13.5	3	3	CW50
4757	14.7	3	3	CW50
4759	15.3	3	3	CW50
4765	17.0	3	3	CW45/CW50
4771	18.7	4	4	CW50
5335	9.6	2.5	3	CW45/CW50
5341	11.6	3	3	CW50
5347	13.5	3	3	CW50
5353	15.5	3	4	CW45/CW50
5357	16.8	3	4	CW45/CW50
5359	17.5	3	4	CW40/CW50
5365	19.4	4	4	CW50
5371	21.4	4	4	CW50
5935	10.8	3	3	CW50
5941	13.0	3	3	CW50
5953	17.5	3	4	CW40/CW50
5957	19.0	4	4	CW50
5959	19.7	4	4	CW50
5965	21.9	4	4	CW50
5971	24.1	4	4	CW45/CW50

TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
2114	0.9	2.5	3	R50
2514	1.1	2.5	3	R50
2914	1.3	2.5	3	R50
3314	1.6	2.5	3	R50
3714	1.8	2.5	3	R50
4114	2.0	2.5	3	R50
4514	2.2	2.5	3	R50
4814	2.4	2.5	3	R50
2117	1.2	2.5	3	R50
2517	1.5	2.5	3	R50
2917	1.8	2.5	3	R50
3317	2.1	2.5	3	R50
3717	2.4	2.5	3	R50
4117	2.8	2.5	3	R50
4517	3.1	2.5	3	R50
4817	3.3	2.5	3	R50
2125	2.0	2.5	3	R50
2525	2.6	2.5	3	R50
2925	3.1	2.5	3	R50
3325	3.6	2.5	3	R50
3725	4.2	2.5	3	R50
4125	4.7	2.5	3	R50
4525	5.2	2.5	3	R50
4825	5.6	2.5	3	R50

(1) Maximum design pressure when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood

Cottage Sash



COTTAGE UNITS FOR SINGLE- AND DOUBLE-HUNG

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁	
		Width	Height			Annealed	Tempered	Clad	Wood
VG2141		17-9/16	12-7/16	1.5	3.4	2.5	3	CW50	CW45
VG2147		17-9/16	14-7/8	1.8	4	2.5	3	CW50	CW45
VG2153		17-9/16	17-1/4	2.1	4.7	2.5	3	CW50	CW45
VG2157		17-9/16	18-7/8	2.3	5.1	2.5	3	CW50	CW45
VG2159		17-9/16	19-5/8	2.3	5.3	2.5	3	CW50	CW45
VG2165		17-9/16	22-1/16	2.6	5.9	2.5	3	CW50	CW45
VG2171		17-9/16	24-7/16	2.9	6.5	2.5	3	CW40	CW40
VG2541		21-9/16	12-7/16	1.8	4.3	2.5	3	CW50	CW45
VG2547		21-9/16	14-7/8	2.2	5.1	2.5	3	CW50	CW45
VG2553		21-9/16	17-1/4	2.5	5.9	2.5	3	CW50	CW45
VG2557		21-9/16	18-7/8	2.8	6.4	2.5	3	CW50	CW45
VG2559		21-9/16	19-5/8	2.9	6.7	2.5	3	CW50	CW45
VG2565		21-9/16	22-1/16	3.3	7.5	2.5	3	CW50	CW45
VG2571		21-9/16	24-7/16	3.6	8.3	2.5	3	CW40	CW40
VG2941		25-9/16	12-7/16	2.2	5.2	2.5	3	CW50	CW45
VG2947		25-9/16	14-7/8	2.6	6.2	2.5	3	CW50	CW45
VG2953		25-9/16	17-1/4	3.0	7.1	2.5	3	CW50	CW45
VG2957		25-9/16	18-7/8	3.3	7.8	2.5	3	CW50	CW45
VG2959		25-9/16	19-5/8	3.4	8.1	2.5	3	CW50	CW45
VG2965		25-9/16	22-1/16	3.9	9.1	2.5	3	CW50	CW45
VG2971		25-9/16	24-7/16	4.3	10	2.5	3	CW40	CW40
VG3341		29-9/16	12-7/16	2.5	6.1	2.5	3	CW50	CW45
VG3347		29-9/16	14-7/8	3.0	7.2	2.5	3	CW50	CW45
VG3353		29-9/16	17-1/4	3.5	8.4	2.5	3	CW50	CW45
VG3357		29-9/16	18-7/8	3.8	9.1	2.5	3	CW50	CW45
VG3359		29-9/16	19-5/8	4.0	9.5	2.5	3	CW50	CW45
VG3365		29-9/16	22-1/16	4.5	10.6	2.5	3	CW50	CW45
VG3371	E ₁	29-9/16	24-7/16	5.0	11.8	2.5	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood

Cottage Sash



COTTAGE UNITS FOR SINGLE- AND DOUBLE-HUNG

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁	
		Width	Height			Annealed	Tempered	Clad	Wood
VG3741		33-9/16	12-7/16	2.9	7	2.5	3	CW50	CW45
VG3747		33-9/16	14-7/8	3.4	8.3	2.5	3	CW50	CW45
VG3753		33-9/16	17-1/4	4.0	9.6	2.5	3	CW50	CW45
VG3757		33-9/16	18-7/8	4.3	10.5	2.5	3	CW50	CW45
VG3759		33-9/16	19-5/8	4.5	10.9	2.5	3	CW50	CW45
VG3765		33-9/16	22-1/16	5.1	12.2	2.5	3	CW50	CW45
VG3771	E	33-9/16	24-7/16	5.7	13.5	2.5	3	CW40	CW40
VG4141		37-9/16	12-7/16	3.2	7.9	2.5	3	CW50	CW45
VG4147		37-9/16	14-7/8	3.8	9.4	2.5	3	CW50	CW45
VG4153		37-9/16	17-1/4	4.5	10.9	2.5	3	CW50	CW45
VG4157		37-9/16	18-7/8	4.9	11.8	2.5	3	CW50	CW45
VG4159		37-9/16	19-5/8	5.1	12.3	2.5	3	CW50	CW45
VG4165		37-9/16	22-1/16	5.7	13.8	2.5	3	CW45	CW45
VG4171	E	37-9/16	24-7/16	6.3	15.2	2.5	3	CW40	CW40
VG4541		41-9/16	12-7/16	3.5	8.8	2.5	3	CW50	CW45
VG4547		41-9/16	14-7/8	4.2	10.5	2.5	3	CW50	CW45
VG4553		41-9/16	17-1/4	4.9	12.1	2.5	3	CW50	CW45
VG4557		41-9/16	18-7/8	5.4	13.2	2.5	3	CW45	CW45
VG4559		41-9/16	19-5/8	5.6	13.7	2.5	3	CW45	CW45
VG4565		41-9/16	22-1/16	6.3	15.4	2.5	3	CW45	CW45
VG4571	E	41-9/16	24-7/16	7.0	17	3	3	CW40	CW40
VG4841		44-9/16	12-7/16	3.8	9.5	2.5	3	CW50	CW45
VG4847		44-9/16	14-7/8	4.5	11.3	2.5	3	CW50	CW45
VG4853		44-9/16	17-1/4	5.3	13	2.5	3	CW45	CW45
VG4857		44-9/16	18-7/8	5.8	14.2	2.5	3	CW45	CW45
VG4859		44-9/16	19-5/8	6.0	14.8	2.5	3	CW45	CW45
VG4865		44-9/16	22-1/16	6.8	16.5	3	3	CW40	CW40
VG4871	E	44-9/16	24-7/16	7.5	18.3	3	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood
Replacement Vent

VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
23.5x35.5		20-1/16	13-5/16	1.8	3.3	2.5	3	CW50	CW45
23.5x37.5		20-1/16	14-5/16	1.9	3.6	2.5	3	CW50	CW45
23.5x41.5		20-1/16	16-5/16	2.2	4.1	2.5	3	CW50	CW45
23.5x45.5		20-1/16	18-5/16	2.5	4.6	2.5	3	CW50	CW45
23.5x47.5		20-1/16	19-5/16	2.6	4.8	2.5	3	CW50	CW45
23.5x51.5		20-1/16	21-5/16	2.9	5.3	2.5	3	CW50	CW45
23.5x53.5		20-1/16	22-5/16	3.1	5.5	2.5	3	CW50	CW45
23.5x57.5		20-1/16	24-5/16	3.3	6	2.5	3	CW50	CW45
23.5x59.5		20-1/16	25-5/16	3.5	6.3	2.5	3	CW50	CW45
23.5x61.5		20-1/16	26-5/16	3.6	6.5	2.5	3	CW50	CW45
23.5x65.5		20-1/16	28-5/16	3.9	7	2.5	3	CW50	CW45
23.5x71.5		20-1/16	31-5/16	4.3	7.7	2.5	3	CW50	CW45
27.5x35.5		24-1/16	13-5/16	2.2	4.1	2.5	3	CW50	CW45
27.5x37.5		24-1/16	14-5/16	2.3	4.4	2.5	3	CW50	CW45
27.5x41.5		24-1/16	16-5/16	2.7	5	2.5	3	CW50	CW45
27.5x45.5		24-1/16	18-5/16	3	5.6	2.5	3	CW50	CW45
27.5x47.5		24-1/16	19-5/16	3.2	5.9	2.5	3	CW50	CW45
27.5x51.5		24-1/16	21-5/16	3.5	6.5	2.5	3	CW50	CW45
27.5x53.5		24-1/16	22-5/16	3.7	6.8	2.5	3	CW50	CW45
27.5x57.5		24-1/16	24-5/16	4	7.4	2.5	3	CW50	CW45
27.5x59.5		24-1/16	25-5/16	4.2	7.7	2.5	3	CW50	CW45
27.5x61.5		24-1/16	26-5/16	4.4	8	2.5	3	CW50	CW45
27.5x65.5		24-1/16	28-5/16	4.7	8.6	2.5	3	CW50	CW45
27.5x71.5	E1	24-1/16	31-5/16	5.2	9.5	2.5	3	CW50	CW45
29.5x35.5		26-1/16	13-5/16	2.4	4.5	2.5	3	CW50	CW45
29.5x37.5		26-1/16	14-5/16	2.5	4.8	2.5	3	CW50	CW45
29.5x41.5		26-1/16	16-5/16	2.9	5.4	2.5	3	CW50	CW45
29.5x45.5		26-1/16	18-5/16	3.3	6.1	2.5	3	CW50	CW45
29.5x47.5		26-1/16	19-5/16	3.5	6.4	2.5	3	CW50	CW45
29.5x51.5		26-1/16	21-5/16	3.8	7.1	2.5	3	CW50	CW45
29.5x53.5		26-1/16	22-5/16	4	7.4	2.5	3	CW50	CW45
29.5x57.5		26-1/16	24-5/16	4.4	8.1	2.5	3	CW50	CW45
29.5x59.5		26-1/16	25-5/16	4.5	8.4	2.5	3	CW50	CW45
29.5x61.5		26-1/16	26-5/16	4.7	8.7	2.5	3	CW50	CW45
29.5x65.5	E1	26-1/16	28-5/16	5.1	9.4	2.5	3	CW50	CW45
29.5x71.5	E1	26-1/16	31-5/16	5.6	10.4	2.5	3	CW50	CW45

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood
Replacement Vent

VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
31.5x35.5		28-1/16	13-5/16	2.5	4.8	2.5	3	CW50	CW45
31.5x37.5		28-1/16	14-5/16	2.7	5.2	2.5	3	CW50	CW45
31.5x41.5		28-1/16	16-5/16	3.1	5.9	2.5	3	CW50	CW45
31.5x45.5		28-1/16	18-5/16	3.5	6.6	2.5	3	CW50	CW45
31.5x47.5		28-1/16	19-5/16	3.7	7	2.5	3	CW50	CW45
31.5x51.5		28-1/16	21-5/16	4.1	7.7	2.5	3	CW50	CW45
31.5x53.5		28-1/16	22-5/16	4.3	8	2.5	3	CW50	CW45
31.5x57.5		28-1/16	24-5/16	4.7	8.8	2.5	3	CW50	CW45
31.5x59.5		28-1/16	25-5/16	4.9	9.1	2.5	3	CW50	CW45
31.5x61.5	E ₁	28-1/16	26-5/16	5.1	9.5	2.5	3	CW50	CW45
31.5x65.5	E ₁	28-1/16	28-5/16	5.5	10.2	2.5	3	CW50	CW45
31.5x71.5	E	28-1/16	31-5/16	6.1	11.3	2.5	3	CW50	CW45
35.5x35.5		32-1/16	13-5/16	2.9	5.6	2.5	3	CW50	CW45
35.5x37.5		32-1/16	14-5/16	3.1	6	2.5	3	CW50	CW45
35.5x41.5		32-1/16	16-5/16	3.6	6.8	2.5	3	CW50	CW45
35.5x45.5		32-1/16	18-5/16	4	7.7	2.5	3	CW50	CW45
35.5x47.5		32-1/16	19-5/16	4.3	8.1	2.5	3	CW50	CW45
35.5x51.5		32-1/16	21-5/16	4.7	8.9	2.5	3	CW50	CW45
35.5x53.5		32-1/16	22-5/16	4.9	9.3	2.5	3	CW50	CW45
35.5x57.5	E ₁	32-1/16	24-5/16	5.4	10.1	2.5	3	CW50	CW45
35.5x59.5	E ₁	32-1/16	25-5/16	5.6	10.5	2.5	3	CW50	CW45
35.5x61.5	E	32-1/16	26-5/16	5.8	10.9	2.5	3	CW50	CW45
35.5x65.5	E	32-1/16	28-5/16	6.3	11.8	2.5	3	CW50	CW45
35.5x71.5	E	32-1/16	31-5/16	6.9	13	2.5	3	CW50	CW45
39.5x35.5		36-1/16	13-5/16	3.3	6.3	2.5	3	CW50	CW45
39.5x37.5		36-1/16	14-5/16	3.5	6.8	2.5	3	CW50	CW45
39.5x41.5		36-1/16	16-5/16	4	7.7	2.5	3	CW50	CW45
39.5x45.5		36-1/16	18-5/16	4.5	8.7	2.5	3	CW50	CW45
39.5x47.5		36-1/16	19-5/16	4.8	9.2	2.5	3	CW50	CW45
39.5x51.5		36-1/16	21-5/16	5.3	10.1	2.5	3	CW50	CW45
39.5x53.5		36-1/16	22-5/16	5.5	10.6	2.5	3	CW50	CW45
39.5x57.5	E	36-1/16	24-5/16	6	11.5	2.5	3	CW50	CW45
39.5x59.5	E	36-1/16	25-5/16	6.3	12	2.5	3	CW50	CW45
39.5x61.5	E	36-1/16	26-5/16	6.5	12.4	2.5	3	CW50	CW45
39.5x65.5	E	36-1/16	28-5/16	7	13.4	2.5	3	CW50	CW45
39.5x71.5	E	36-1/16	31-5/16	7.8	14.8	2.5	3	CW50	CW45
41.5x35.5		38-1/16	13-5/16	3.5	6.7	2.5	3	CW50	CW45
41.5x37.5		38-1/16	14-5/16	3.7	7.2	2.5	3	CW50	CW45
41.5x41.5		38-1/16	16-5/16	4.3	8.2	2.5	3	CW50	CW45
41.5x45.5		38-1/16	18-5/16	4.8	9.2	2.5	3	CW50	CW45
41.5x47.5		38-1/16	19-5/16	5.1	9.7	2.5	3	CW50	CW45
41.5x51.5		38-1/16	21-5/16	5.6	10.7	2.5	3	CW50	CW45
41.5x53.5		38-1/16	22-5/16	5.9	11.2	2.5	3	CW50	CW45
41.5x57.5	E	38-1/16	24-5/16	6.4	12.2	2.5	3	CW50	CW45
41.5x59.5	E	38-1/16	25-5/16	6.6	12.7	2.5	3	CW50	CW45
41.5x61.5	E	38-1/16	26-5/16	6.9	13.2	2.5	3	CW50	CW45
41.5x65.5	E	38-1/16	28-5/16	7.4	14.2	2.5	3	CW50	CW45
41.5x71.5	E	38-1/16	31-5/16	8.2	15.6	2.5	3	CW50	CW45

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood
Replacement Fixed and Transoms



FIXED UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁
		Annealed	Tempered	
41x35.5	7.2	2.5	3	CW50
41x37.5	7.7	2.5	3	CW50
41x41.5	8.7	2.5	3	CW50
41x45.5	9.7	2.5	3	CW45/CW50
41x47.5	10.2	3.0	3	CW50
41x51.5	11.1	3.0	3	CW50
41x53.5	11.6	3.0	3	CW50
41x57.5	12.6	3.0	3	CW50
41x59.5	13.1	3.0	3	CW50
41x61.5	13.6	3.0	3	CW50
41x65.5	14.6	3.0	3	CW50
41x71.5	16.0	3.0	3	CW45/CW50
47x35.5	8.5	2.5	3	CW50
47x37.5	9.0	2.5	3	CW50
47x41.5	10.2	3.0	3	CW50
47x45.5	11.3	3.0	3	CW50
47x47.5	11.9	3.0	3	CW50
47x51.5	13.1	3.0	3	CW50
47x53.5	13.6	3.0	3	CW50
47x57.5	14.8	3.0	3	CW50
47x59.5	15.3	3.0	3	CW45/CW50
47x61.5	15.9	3.0	3	CW45/CW50
47x65.5	17.1	3.0	3	CW45/CW50
47x71.5	18.8	4.0	4	CW50
53x35.5	9.7	2.5	3	CW45/CW50
53x37.5	10.4	3.0	3	CW50
53x41.5	11.7	3.0	3	CW50
53x45.5	13.0	3.0	3	CW50
53x47.5	13.6	3.0	3	CW50
53x51.5	15.0	3.0	4	CW50
53x53.5	15.6	3.0	4	CW45/CW50
53x57.5	16.9	3.0	4	CW45/CW50
53x59.5	17.6	4.0	4	CW50
53x61.5	18.2	4.0	4	CW50
53x65.5	19.6	4.0	4	CW50
53x71.5	21.5	4.0	4	CW50
59x35.5	11.0	3.0	3	CW50
59x37.5	11.7	3.0	3	CW50
59x41.5	13.2	3.0	3	CW50
59x45.5	14.6	3.0	3	CW50
59x47.5	15.4	3.0	3	CW45/CW50
59x51.5	16.9	3.0	4	CW45/CW50
59x53.5	17.6	4.0	4	CW50
59x57.5	19.1	4.0	4	CW50
59x59.5	19.8	4.0	4	CW50
59x61.5	20.6	4.0	4	CW50
59x65.5	22.0	4.0	4	CW50
59x71.5	24.3	4.0	4	CW45/CW50

FIXED TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁
		Annealed	Tempered	
23.5x14	1.0	2.5	3	R50
23.5x17	1.4	2.5	3	R50
23.5x25	2.4	2.5	3	R50
27.5x14	1.2	2.5	3	R50
27.5x17	1.7	2.5	3	R50
27.5x25	2.9	2.5	3	R50
29.5x14	1.4	2.5	3	R50
29.5x17	1.9	2.5	3	R50
29.5x25	3.2	2.5	3	R50
31.5x14	1.5	2.5	3	R50
31.5x17	2.0	2.5	3	R50
31.5x25	3.4	2.5	3	R50
35.5x14	1.7	2.5	3	R50
35.5x17	2.3	2.5	3	R50
35.5x25	4.0	2.5	3	R50
39.5x14	1.9	2.5	3	R50
39.5x17	2.6	2.5	3	R50
39.5x25	4.5	2.5	3	R50
41.5x14	2.0	2.5	3	R50
41.5x17	2.8	2.5	3	R50
41.5x25	4.8	2.5	3	R50

(1) Maximum performance when glazed with the appropriate glass thickness.
Second number, where shown, requires tempered glass.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood
Replacement Cottage Sash

VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
VG23.5x41.5		20-1/16	12-3/4	1.7	4.1	2.5	3	CW50	CW45
VG23.5x45.5		20-1/16	14-5/16	1.9	4.6	2.5	3	CW50	CW45
VG23.5x47.5		20-1/16	15-1/8	2.1	4.8	2.5	3	CW50	CW45
VG23.5x51.5		20-1/16	16-3/4	2.3	5.3	2.5	3	CW50	CW45
VG23.5x53.5		20-1/16	17-1/2	2.4	5.5	2.5	3	CW50	CW45
VG23.5x57.5		20-1/16	19-1/8	2.6	6	2.5	3	CW50	CW45
VG23.5x59.5		20-1/16	19-15/16	2.7	6.3	2.5	3	CW50	CW45
VG23.5x61.5		20-1/16	20-3/4	2.8	6.5	2.5	3	CW50	CW45
VG23.5x65.5		20-1/16	22-5/16	3.1	7	2.5	3	CW50	CW45
VG23.5x71.5		20-1/16	24-3/4	3.4	7.7	2.5	3	CW40	CW40
VG27.5x41.5		24-1/16	38324	2.1	5	2.5	3	CW50	CW45
VG27.5x45.5		24-1/16	14-5/16	2.3	5.6	2.5	3	CW50	CW45
VG27.5x47.5		24-1/16	15-1/8	2.5	5.9	2.5	3	CW50	CW45
VG27.5x51.5		24-1/16	16-3/4	2.7	6.5	2.5	3	CW50	CW45
VG27.5x53.5		24-1/16	17-1/2	2.9	6.8	2.5	3	CW50	CW45
VG27.5x57.5		24-1/16	19-1/8	3.1	7.4	2.5	3	CW50	CW45
VG27.5x59.5		24-1/16	19-15/16	3.3	7.7	2.5	3	CW50	CW45
VG27.5x61.5		24-1/16	20-3/4	3.4	8	2.5	3	CW50	CW45
VG27.5x65.5		24-1/16	22-5/16	3.7	8.6	2.5	3	CW50	CW45
VG27.5x71.5		24-1/16	24-3/4	4.1	9.5	2.5	3	CW40	CW40
VG29.5x41.5		26-1/16	38324	2.3	5.4	2.5	3	CW50	CW45
VG29.5x45.5		26-1/16	14-5/16	2.5	6.1	2.5	3	CW50	CW45
VG29.5x47.5		26-1/16	15-1/8	2.7	6.4	2.5	3	CW50	CW45
VG29.5x51.5		26-1/16	16-3/4	3	7.1	2.5	3	CW50	CW45
VG29.5x53.5		26-1/16	17-1/2	3.1	7.4	2.5	3	CW50	CW45
VG29.5x57.5		26-1/16	19-1/8	3.4	8.1	2.5	3	CW50	CW45
VG29.5x59.5		26-1/16	19-15/16	3.6	8.4	2.5	3	CW50	CW45
VG29.5x61.5		26-1/16	20-3/4	3.7	8.7	2.5	3	CW50	CW45
VG29.5x65.5		26-1/16	22-5/16	4	9.4	2.5	3	CW50	CW45
VG29.5x71.5		26-1/16	24-3/4	4.4	10.4	2.5	3	CW40	CW40
VG31.5x41.5		28-1/16	38324	2.4	5.9	2.5	3	CW50	CW45
VG31.5x45.5		28-1/16	14-5/16	2.7	6.6	2.5	3	CW50	CW45
VG31.5x47.5		28-1/16	15-1/8	2.9	7	2.5	3	CW50	CW45
VG31.5x51.5		28-1/16	16-3/4	3.2	7.7	2.5	3	CW50	CW45
VG31.5x53.5		28-1/16	17-1/2	3.4	8	2.5	3	CW50	CW45
VG31.5x57.5		28-1/16	19-1/8	3.7	8.8	2.5	3	CW50	CW45

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Wood and Aluminum-Clad Wood
Replacement Cottage Sash

VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
VG31.5x59.5		28-1/16	19-15/16	3.8	9.1	2.5	3	CW50	CW45
VG31.5x61.5		28-1/16	20-3/4	4	9.5	2.5	3	CW50	CW45
VG31.5x65.5		28-1/16	22-5/16	4.3	10.2	2.5	3	CW50	CW45
VG31.5x71.5		28-1/16	24-3/4	4.8	11.3	2.5	3	CW40	CW40
VG35.5x41.5		32-1/16	38324	2.8	6.8	2.5	3	CW50	CW45
VG35.5x45.5		32-1/16	14-5/16	3.1	7.7	2.5	3	CW50	CW45
VG35.5x47.5		32-1/16	15-1/8	3.3	8.1	2.5	3	CW50	CW45
VG35.5x51.5		32-1/16	16-3/4	3.7	8.9	2.5	3	CW50	CW45
VG35.5x53.5		32-1/16	17-1/2	3.9	9.3	2.5	3	CW50	CW45
VG35.5x57.5		32-1/16	19-1/8	4.2	10.1	2.5	3	CW50	CW45
VG35.5x59.5		32-1/16	19-15/16	4.4	10.5	2.5	3	CW50	CW45
VG35.5x61.5		32-1/16	20-3/4	4.6	10.9	2.5	3	CW50	CW45
VG35.5x65.5		32-1/16	22-5/16	4.9	11.8	2.5	3	CW50	CW45
VG35.5x71.5	E1	32-1/16	24-3/4	5.5	13	2.5	3	CW40	CW40
VG39.5x41.5		36-1/16	38324	3.1	7.7	2.5	3	CW50	CW45
VG39.5x45.5		36-1/16	14-5/16	3.5	8.7	2.5	3	CW50	CW45
VG39.5x47.5		36-1/16	15-1/8	3.7	9.2	2.5	3	CW50	CW45
VG39.5x51.5		36-1/16	16-3/4	4.1	10.1	2.5	3	CW50	CW45
VG39.5x53.5		36-1/16	17-1/2	4.3	10.6	2.5	3	CW50	CW45
VG39.5x57.5		36-1/16	19-1/8	4.7	11.5	2.5	3	CW50	CW45
VG39.5x59.5		36-1/16	19-15/16	4.9	12	2.5	3	CW50	CW45
VG39.5x61.5		36-1/16	20-3/4	5.1	12.4	2.5	3	CW45	CW45
VG39.5x65.5		36-1/16	22-5/16	5.5	13.4	2.5	3	CW45	CW45
VG39.5x71.5	E	36-1/16	24-3/4	6.1	14.8	2.5	3	CW40	CW40
VG41.5x41.5		38-1/16	38324	3.3	8.2	2.5	3	CW50	CW45
VG41.5x45.5		38-1/16	14-5/16	3.7	9.2	2.5	3	CW50	CW45
VG41.5x47.5		38-1/16	15-1/8	4	9.7	2.5	3	CW50	CW45
VG41.5x51.5		38-1/16	16-3/4	4.4	10.7	2.5	3	CW50	CW45
VG41.5x53.5		38-1/16	17-1/2	4.6	11.2	2.5	3	CW50	CW45
VG41.5x57.5		38-1/16	19-1/8	5	12.2	2.5	3	CW50	CW45
VG41.5x59.5		38-1/16	19-15/16	5.2	12.7	2.5	3	CW50	CW45
VG41.5x61.5		38-1/16	20-3/4	5.4	13.2	2.5	3	CW45	CW45
VG41.5x65.5		38-1/16	22-5/16	5.9	14.2	2.5	3	CW45	CW45
VG41.5x71.5	E	38-1/16	24-3/4	6.5	15.6	2.5	3	CW40	CW40

Egress Notes:

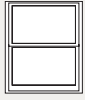
Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

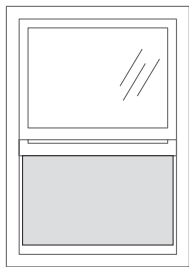
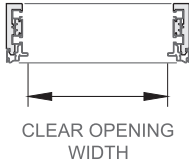
DESIGN DATA

Wood and Aluminum-Clad Wood
Miscellaneous Formulas

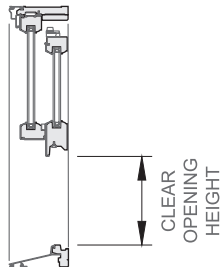


Equal Sash Only

	VENT UNITS	FIXED AND TRANSOM UNITS
VISIBLE GLASS	Width = Frame - 5-3/4" Height ₂ = (Frame - 8-3/16") / 2	Width = Frame - 5-3/4" Height = Frame - 5-3/4"
ACTUAL GLASS	Width = Frame - 4-3/8" Height ₂ = (Frame - 5-1/2") / 2	Width = Frame - 4-3/8" Height = Frame - 4-3/8"
CLEAR OPENING*	COW = Frame Width - 3-7/16" COH = (Frame Height / 2) - 4-7/16"	—
VENT AREA FT²	(COW x COH) / 144	—



Shaded portion shows vent area.

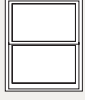


(-) = Not Available

(1) Per sash.

* Some units with custom glazing may have limited travel.

See your local Pella sales representative for specific size information.



DOUBLE-HUNG

DETAILED PRODUCT DESCRIPTIONS

Aluminum-Clad Wood

LX and SE Single-, Double- and Simulated-Hung



FRAME

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [LX: [pine] [mahogany] [alder] [douglas fir]] [SE: pine].
- Exterior surfaces are clad with aluminum.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94 mm).
- Optional factory applied jamb extensions available between 4-9/16" (116 mm) and 7-3/16" (183 mm) wall depths.
- Vinyl jamb liner [LX includes wood / clad inserts].
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.

SASH

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [LX: [pine] [mahogany] [alder] [douglas fir]] [SE: pine].
- Exterior surfaces are clad with aluminum and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-7/8" (47 mm).
- Upper sash has surface-mounted wash locks.
- Lower sash has concealed wash locks in Lower check rail.

WEATHERSTRIPPING

- Water-stop santoprene-wrapped foam at head and sill.
- Thermoplastic elastomer bulb with slip-coating set into Low-E sash for tight contact at check rail.
- Vinyl-wrapped foam inserted into jamb liner to seal against sides of sash.

GLAZING SYSTEM

- Quality float glass complying with ASTM C 1036.
- Silicone-glazed 11/16" dual-seal insulating glass [[annealed] [tempered]] [[clear] [Advanced Low-E with argon] [SunDefense™ Low-E with argon] [AdvancedComfort Low-E with argon] [NaturalSun Low-E with argon]] [[bronze] [gray] [green] Advanced Low-E coated with argon].
- Custom and high altitude glazing available.

EXTERIOR

- Aluminum-clad exteriors shall be finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
- Color is [White] [Tan] [Brown] [Putty] [feature 1] [custom 1].
- or -
- Aluminum-clad exteriors shall be finished with EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step, baked-on finish.
- Color is [White] [Tan] [Brown] [Putty] [feature 1] [custom 1].

INTERIOR

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen White] [Bright White] [stain 1]].

HARDWARE

- Galvanized block-and-tackle balances are connected to self-locking balance shoes which are connected to the sashes using zinc die cast terminals and concealed within the frame.
- Sash lock is [standard] or [spoon-shaped]. Two sash locks on units with frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].
- Optional sash lift furnished for field installation. Two lifts on units with frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].

OPTIONAL PRODUCTS

Grilles

- Integral Light Technology® grilles
 - Interior grilles are [5/8" [putty] [ogee] profile] [7/8" [putty] [ogee] profile] [1-1/4" [putty] [ogee] profile] [2" ogee profile] that are solid [LX: [pine] [mahogany] [alder] [douglas fir]] [SE: pine]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain 1]].
 - Exterior grilles are [5/8" putty profile] [7/8" [putty] [ogee] profile] [1-1/4" [putty] [ogee] profile] [2" ogee profile] that are extruded aluminum to match window cladding.
 - Patterns are [Traditional] [Prairie] [Top Row] [New England] [Victorian].
 - Insulating glass contains non-glare spacer between the panes of glass.
 - Grilles are adhered to both sides of the insulating glass with VHB acrylic adhesive tape and aligned with the non-glare spacer.
- or -
- Grilles-Between-the-Glass 2
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row]
 - Interior color is [White] [Tan3] [Brown 3] [Putty 3] [Ivory] [Brickstone] [Harvest] [Cordovan].
 - Exterior color 5 is [White] [Tan] [Brown] [Putty] [feature 1].
- or -

Removable grilles

- [[3/4"] [1-1/4"] [2"] regular] [[1-1/4"] [2"] colonial] profile, with [Traditional] [Prairie] patterns that are removable solid pine wood Grilles steel-pinned at joints and fitted to sash with steel clips and tacks.
 - Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain 1]].
 - Exterior [unfinished, ready for site finishing] [factory primed] [finish color matched to exterior cladding 5].

Screens

- InView™ screens
 - [Half-Size] [Full-Size 4] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is baked enamel, color to match window cladding.
- or -
- Vivid View® screens
 - [Half-Size] [Full-Size4] PVDF 21 / 17 mesh, minimum 78 percent light transmissive screen, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is baked enamel, color to match window cladding.

Hardware

- Optional factory applied limited opening device available for vent units in stainless steel; nominal 3-3/4" opening. Limiting device concealed from view.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

(1) Contact your local Pella sales representative for current color options.

(2) Available in clear or Low-E insulating glass only. White exterior grille color is the only option for clear insulating glass.

(3) Tan, Brown and Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.

(4) Full screens are available on units ≤ 96" height.

(5) Appearance of exterior grille color will vary depending on Low-E coating on glass.



DOUBLE-HUNG

DETAILED PRODUCT DESCRIPTIONS

Wood

LX Single-, Double- and Simulated-Hung



FRAME

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [pine] [mahogany] (standard rectangular windows only). Any curved member may have visible finger-jointed surfaces.
- Exterior surfaces are [pine] [mahogany].
- Overall frame depth is 4-3/8" (111 mm) for a wall depth of 4-3/16" (106 mm).
- Vinyl Jamb liner includes wood / clad inserts.
- Optional factory applied jamb extensions available for 4-9/16" (116 mm) and 7-3/16" (183 mm) wall depths, with Pella's standard wood exterior trim.

SASH

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [pine] [mahogany] (standard rectangular windows only). Any curved member may have visible finger-jointed surfaces.
- Exterior surfaces are [pine] [mahogany].
- Corners [mortised and tenoned on rectangular units] [mitered on arch head units], glued and secured with metal fasteners.
- Sash thickness is 1-7/8" (47 mm).
- [Double-Hung: Upper sash has surface-mounted wash locks] [Single-Hung: Fixed upper sash has surface-mounted wash locks] [Arch Head units have no wash locks].
- Lower sash has concealed wash locks in Lower check rail.
- Simulated-Hung units have non-operable upper and lower sashes.

WEATHERSTRIPPING

- Water-stop santoprene-wrapped foam at head and sill.
- Thermoplastic elastomer bulb with slip coating set into Low-E sash for tight contact at check rail.
- Vinyl-wrapped foam inserted into jamb liner to seal against sides of sash.

GLAZING SYSTEM

- Quality float glass complying with ASTM C 1036.
- Silicone-glazed 11/16" dual-seal insulating glass [[annealed] [tempered]] [[clear] [Advanced Low-E with argon] [SunDefense™ Low-E with argon] [AdvancedComfort Low-E with argon] [NaturalSun Low-E with argon]] [[bronze] [gray] [green] Advanced Low-E with argon].
- Custom and high altitude glazing available.

EXTERIOR

- [Pine: factory primed with one coat acrylic latex] [Mahogany: [factory primed with one coat acrylic latex] [Unfinished, ready for site finishing]].

INTERIOR

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen White] [Bright White] [stain 1]].

HARDWARE

- Galvanized block-and-tackle balances are connected to self-locking balance shoes which are connected to the sashes using zinc die cast terminals and concealed within the frame.
- Sash lock is [standard] [spoon-shaped]. Two sash locks on units with frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].
- Optional sash lift furnished for field installation. Two lifts on units with frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].
- [Simulated-Hung: Single-piece lock ties upper and Low-E sash together. When removed Low-E sash becomes operable.]

OPTIONAL PRODUCTS

Grilles

- Integral Light Technology® grilles
 - Interior grilles are solid [5/8" [putty] [ogee] profile] [7/8" [putty] [ogee] profile] [1-1/4" [putty] [ogee] profile] [2" ogee profile] that are solid [pine] [mahogany]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain 1]].
 - Exterior grilles are solid [5/8" putty profile] [7/8" [putty] [ogee] profile] [1-1/4" [putty] [ogee] profile] [2" ogee profile] that are [pine] [mahogany]. Exterior surfaces are water repellent, preservative-treated in accordance with WDMA I.S.-4, and are [unfinished, ready for site finishing] [factory primed].
 - Patterns are [Traditional] [Prairie] [Top Row] [New England] [Victorian].
 - Insulating glass contains non-glare spacer between the panes of glass.
 - Grilles are adhered to both sides of the insulating glass with VHB acrylic adhesive tape and aligned with the non-glare spacer.
 - or -
- Grilles-Between-the-Glass 2
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [Prairie] [Cross] [Top Row]
 - Interior color is [White] [Tan 3] [Brown 3] [Putty 3] [Ivory] [Brickstone] [Harvest] [Cordova].
 - Exterior color 5 is [White] [Tan] [Brown] [Putty] [feature 3].
 - or -
- Removable grilles
 - [[3/4"] [1-1/4"] [2"] regular] [[1-1/4"] [2"] colonial] profile, with [Traditional] [Prairie] patterns that are removable solid pine wood Grilles steel-pinned at joints and fitted to sash with steel clips and tacks.
 - Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain 1]].
 - Exterior [unfinished, ready for site finishing] [factory primed] [factory prefinished, finish color matched to exterior cladding 5].

Screens (for Double- and Single-Hung)

- InView™ Screens
 - [Half-Size] [Full-Size 4] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is [baked enamel, White] [feature 3].
 - or -
- Vivid View® Screens
 - [Half-Size] [Full-Size 4] PVDF 21/17 mesh, minimum 78 percent light transmissive screen, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is [baked enamel, White] [feature 3].
 - Arch head units have half-size screen only.

Hardware

- Optional factory applied limited opening device available for vent units in stainless steel; nominal 3-3/4" opening. Limiting device concealed from view.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

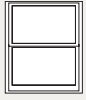
(1) Contact your local Pella sales representative for current color options.

(2) Available in clear or Low-E insulating glass only. White exterior grille color is the only option for clear Insulating Glass.

(3) Tan, Brown or Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.

(4) Full screens are available on units ≤ 84" height.

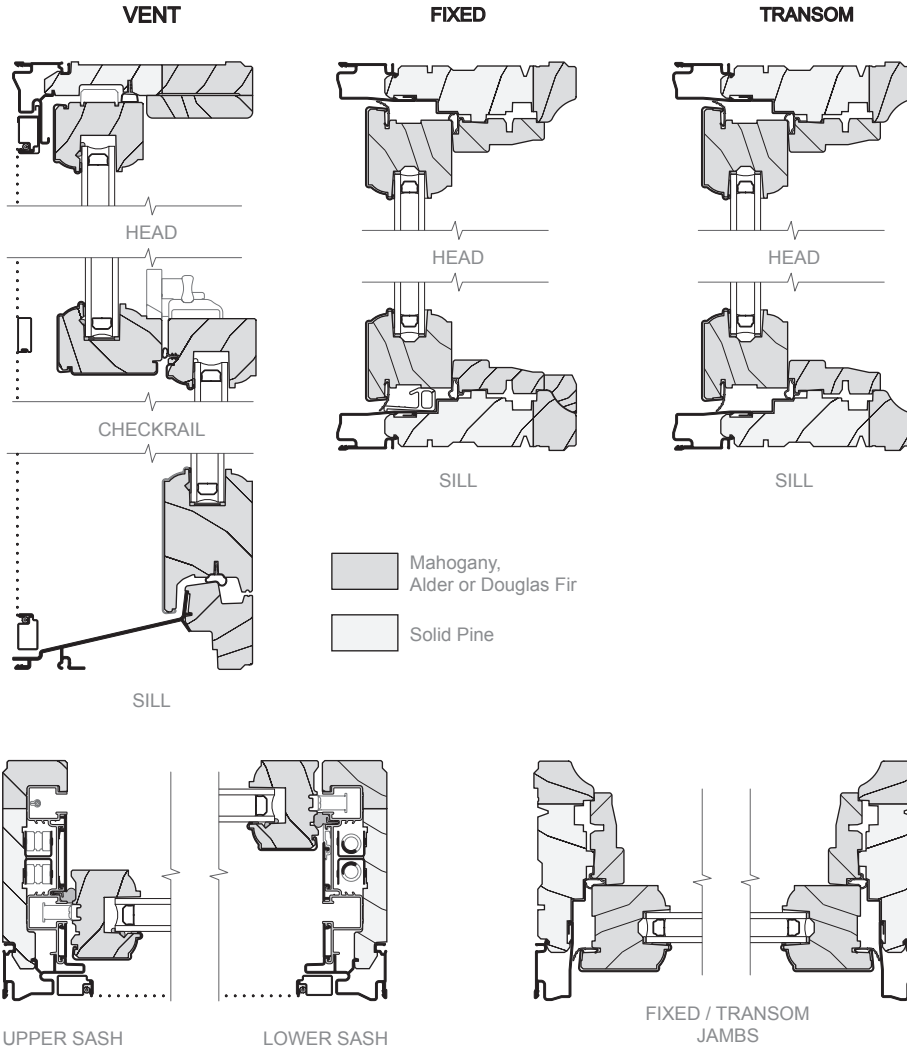
(5) Appearance of exterior grille color will vary depending on Low-E coating on glass.



DOUBLE-HUNG

UNIT SECTIONS – WOOD COLLECTION

Aluminum-Clad Wood
LX Double-Hung



Scale 3" = 1' 0"

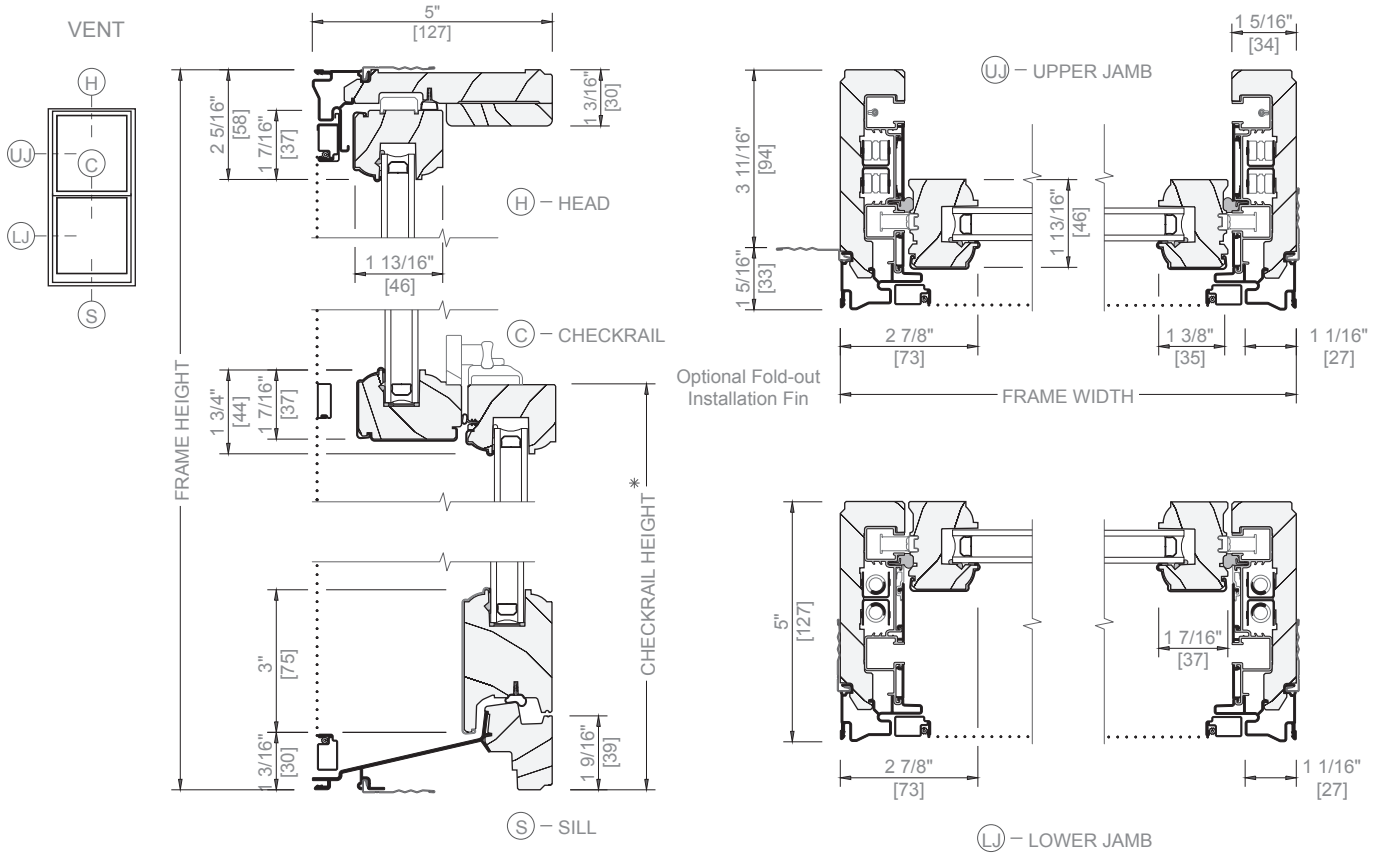


DOUBLE-HUNG

UNIT SECTIONS

Aluminum-Clad Wood

LX Single- and Double-Hung



* Dimension required for ordering units with unequal sash.

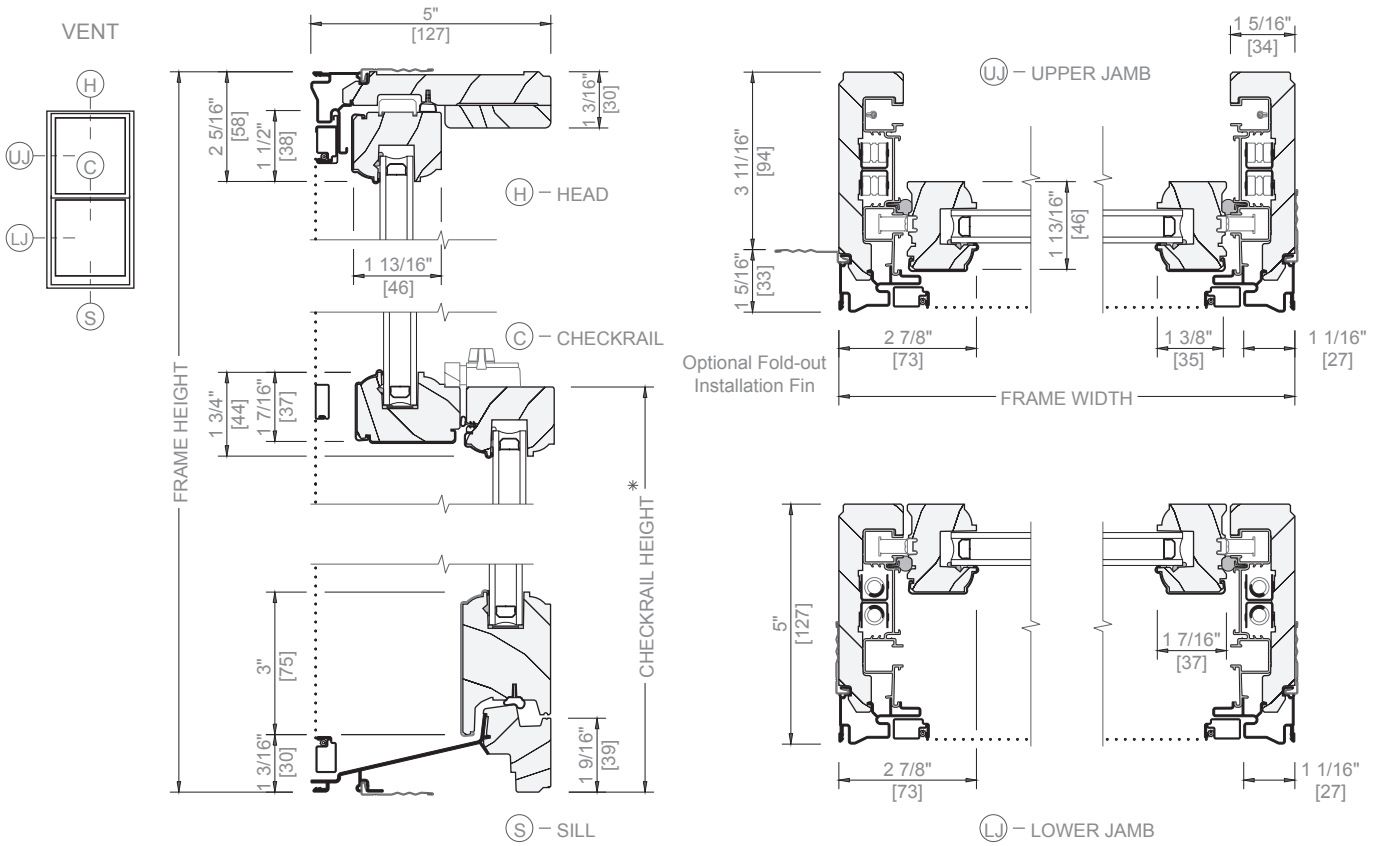
Scale 3" = 1' 0"
All dimensions are approximate.



DOUBLE-HUNG

UNIT SECTIONS

Aluminum-Clad Wood
SE Double-Hung



* Dimension required for ordering units with unequal sash.

Scale 3" = 1' 0"
All dimensions are approximate.

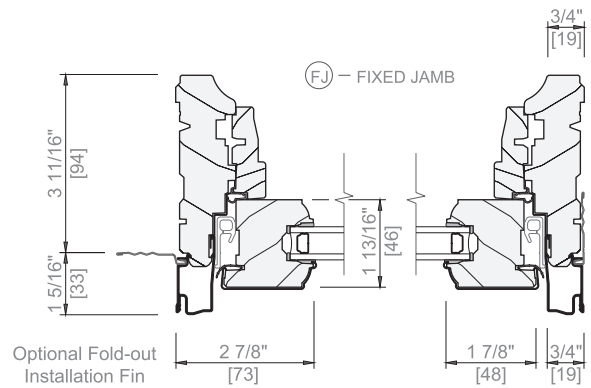
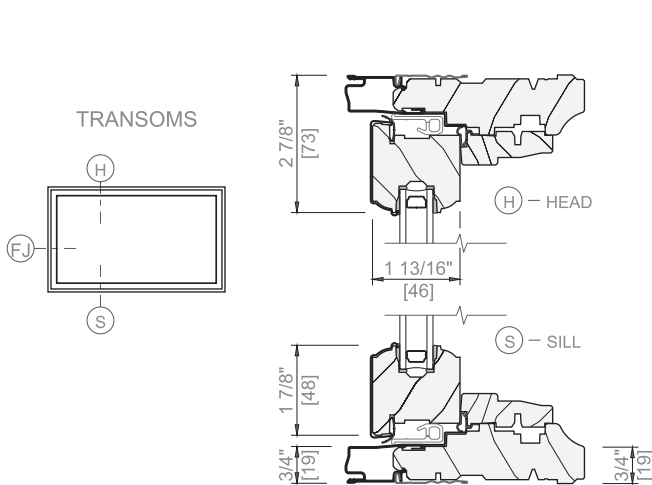
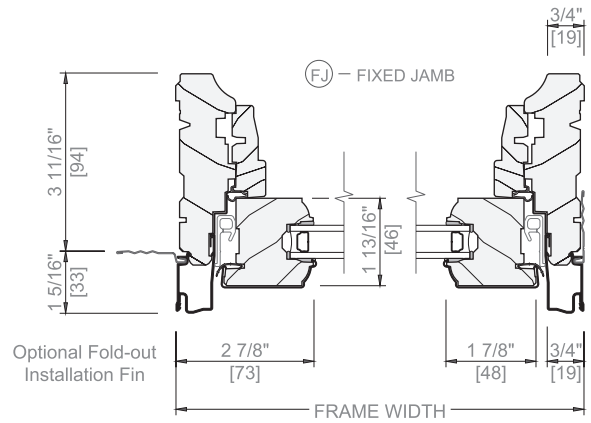
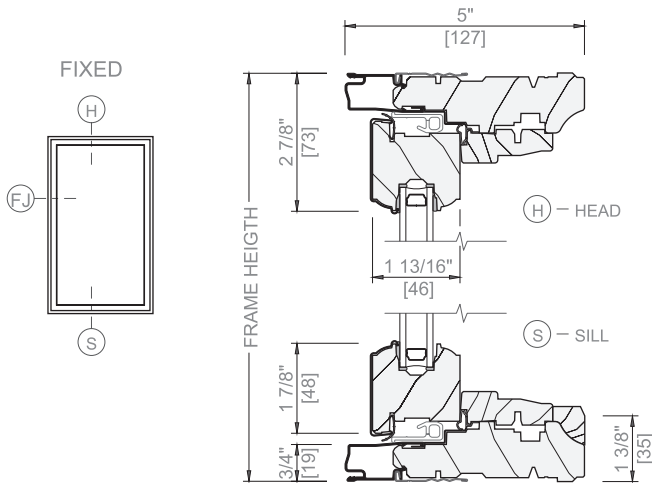


DOUBLE-HUNG

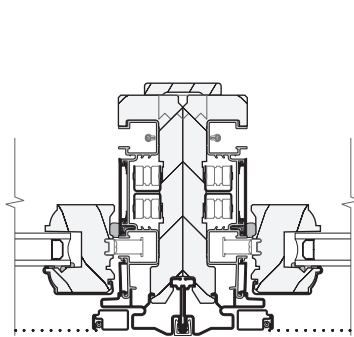
UNIT SECTIONS

Aluminum-Clad Wood

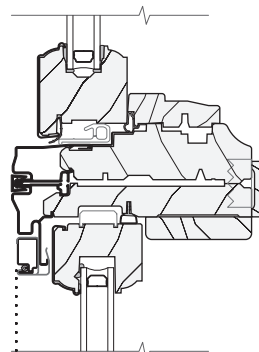
LX and SE Fixed and Transoms



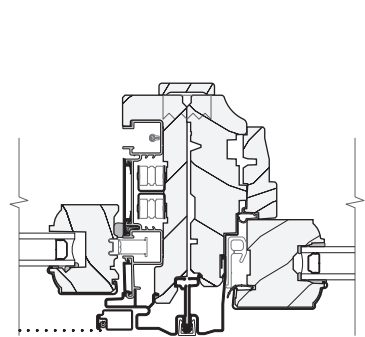
TYPICAL JOINING MULLIONS



VERTICAL JOINING MULLION
LX VENT / LX VENT



HORIZONTAL JOINING MULLION
TRANSOM / VENT



VERTICAL JOINING MULLION
LX VENT / FIXED

Scale 3" = 1' 0"

All dimensions are approximate.

See Installation and Performance at www.PellaADM.com for mullion limitations and reinforcing requirements.

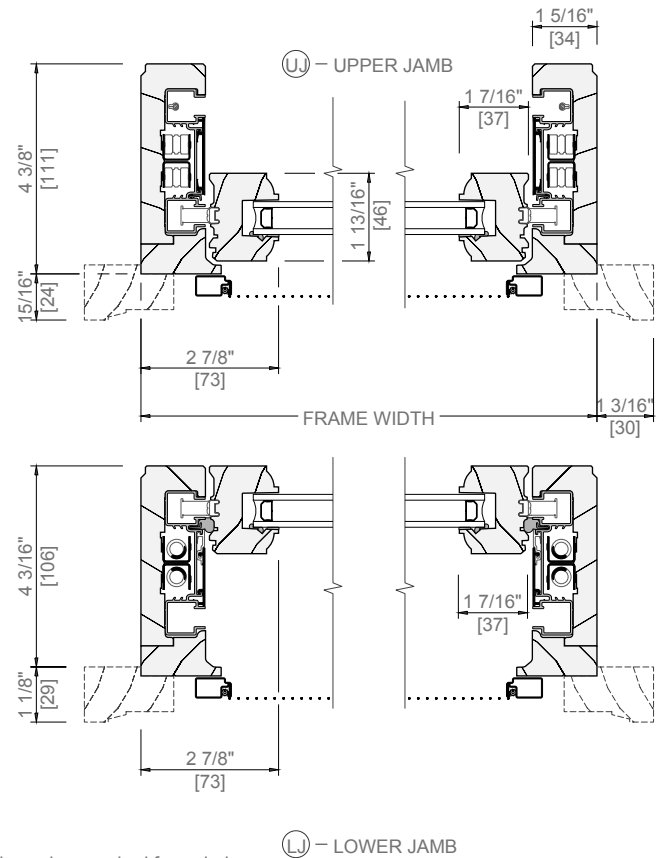
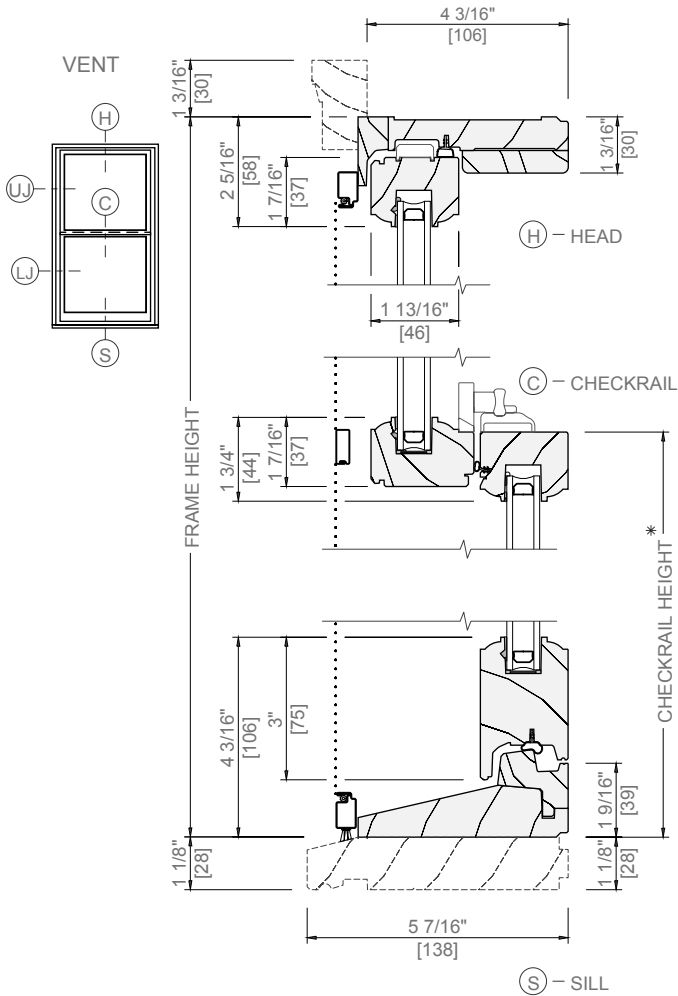


DOUBLE-HUNG

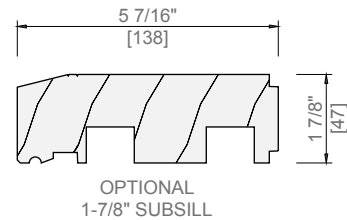
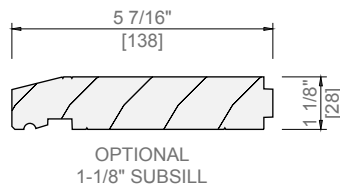
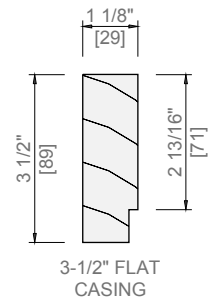
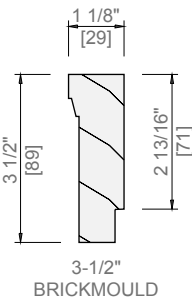
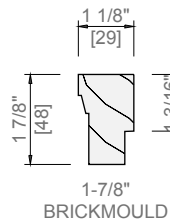
UNIT SECTIONS

Wood Exterior

LX Single- and Double-Hung



* Dimension required for ordering units with unequal sash.



Scale 3" = 1' 0"
All dimensions are approximate.

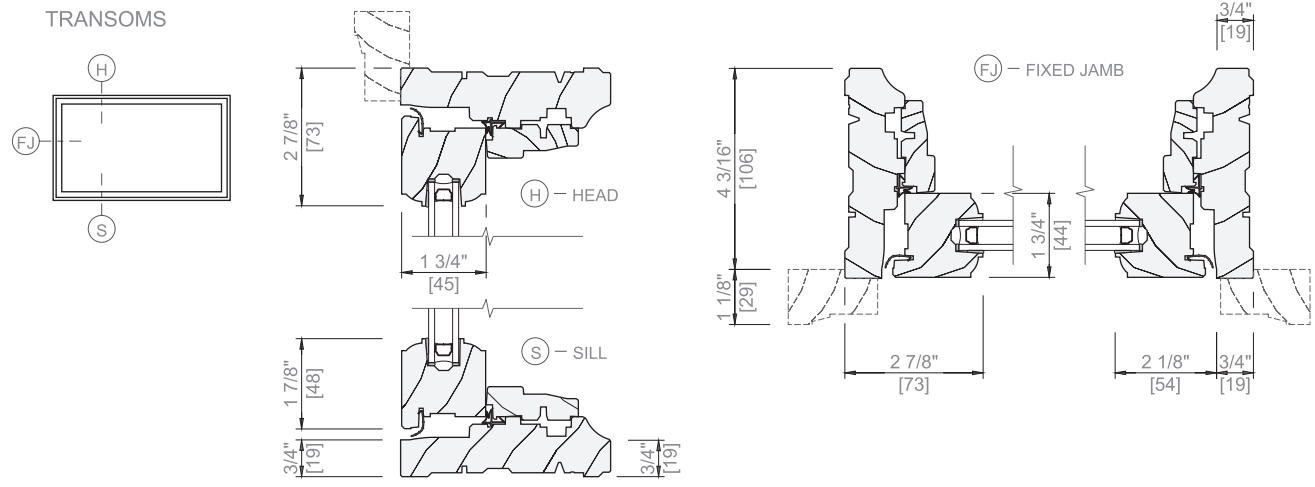
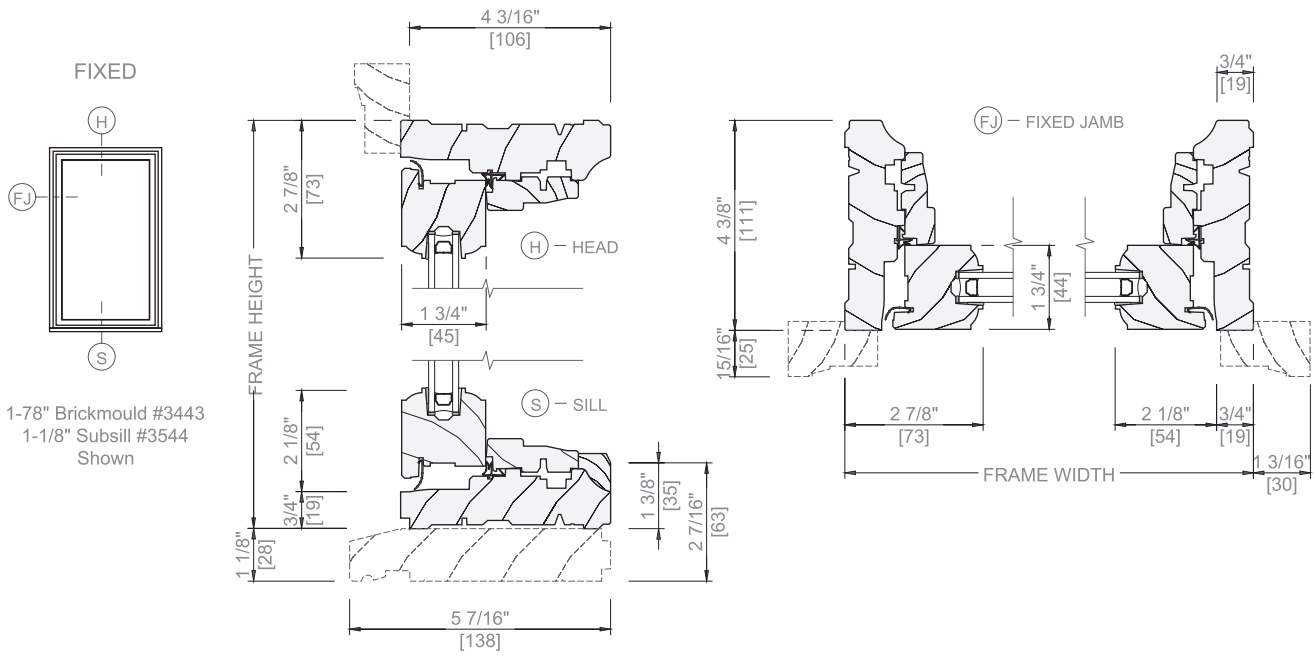


DOUBLE-HUNG

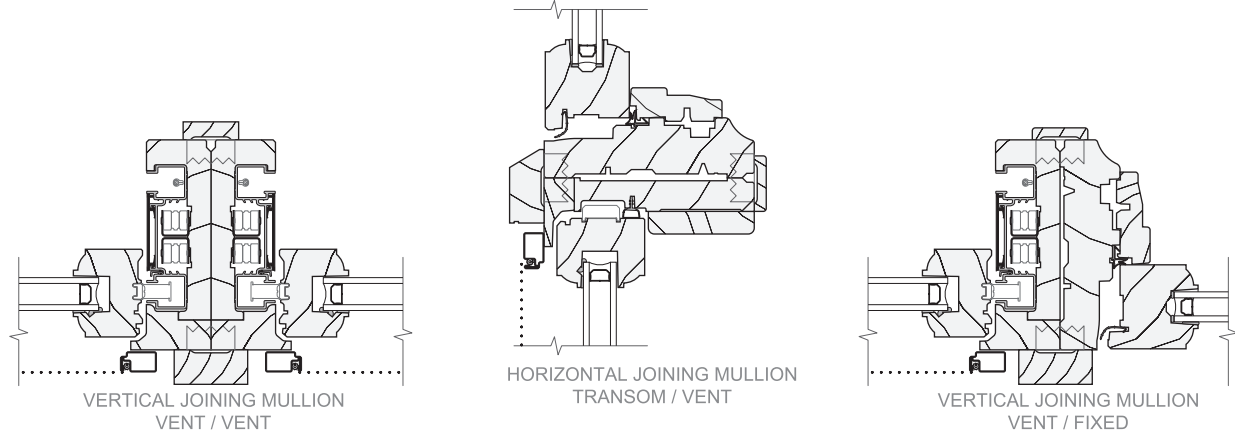
UNIT SECTIONS

Wood Exterior

LX Fixed and Transoms



TYPICAL JOINING MULLIONS



Scale 3" = 1' 0"

All dimensions are approximate.

See Installation and Performance at www.PellaADM.com for mullion limitations and reinforcing requirements.



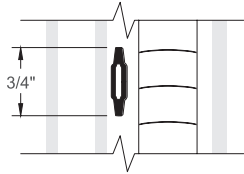
DOUBLE-HUNG

GRILLE TYPES

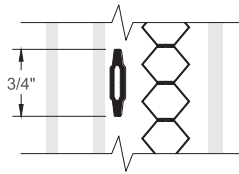


Grille Profiles

Removable Grilles Between-the-Glass



3/4" Triple-Pane with Slimshade Blind

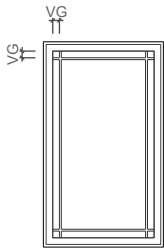


3/4" Triple-Pane with Cellular Fabric Shade

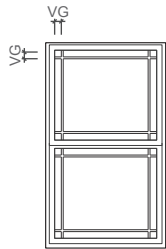
Grille Patterns

Removable Grilles-Between-the-Glass

PRAIRIE LITE PATTERNS



9-Lite



9-Lite



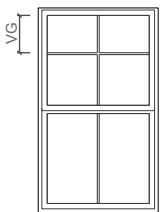
12-Lite

Standard corner lite dimension for Prairie patterns = 2-1/2" VG.

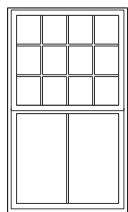
12-Lite

- Available in units $\geq 2' 0"$ in width and $\geq 3' 8"$ in height based on equal sash split.

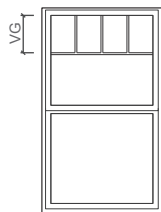
OTHER AVAILABLE PATTERNS



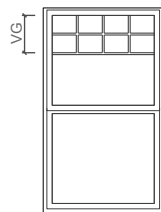
Cross



New England



Top Row



Traditional

Cross

- Standard visible glass to separator bar = 14" or half of total visible glass height, whichever is smaller.

Top Row

- Standard visible glass height to separator bar = 14" or half of upper sash visible glass height, whichever is smaller.

For traditional patterns, see size tables.

VG = Visible Glass

Lite dimensions noted can vary.

For size and pattern availability contact your local Pella sales representative.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Double-Hung



Fixed Transoms

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 ³ / ₄ "	2' 1 ³ / ₄ "	2' 5 ³ / ₄ "	2' 9 ³ / ₄ "	3' 1 ³ / ₄ "	3' 5 ³ / ₄ "	3' 9 ³ / ₄ "	4' 0 ³ / ₄ "
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(451) (432)								
(654) (635)								

Vent Units

(908) (889)								
(1 060) (1 041)								
(1 213) (1 194)								
(1 365) (1 346)								
(1 467) (1 448)								
(1 518) (1 499)								
(1 670) (1 651)								

Egress Notes:

Check all applicable local codes for emergency egress requirements.

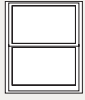
E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Double-Hung



Vent Units

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 ³ / ₄ "	2' 1 ³ / ₄ "	2' 5 ³ / ₄ "	2' 9 ³ / ₄ "	3' 1 ³ / ₄ "	3' 5 ³ / ₄ "	3' 9 ³ / ₄ "	4' 0 ³ / ₄ "
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(1 822) (1 803) 5' 11 ³ / ₄ " 5' 11" (1 975) (1 956) 6' 5 ³ / ₄ " 6' 5" (2 153) (2 134) 7' 0 ³ / ₄ " 7' 0"	 2171	 2571	 2971 E	 3371 E	 3771 E	 4171 E	 4571 (1) E	 4871 (1) E
	 2177	 2577 E1	 2977 E	 3377 E	 3777 E	 4177 (1) E	 4577 (1) E	 4877 (1) E
	 2184	 2584 E	 2984 E	 3384 E	 3784 (1) E	 4184 (1) E	 4584 (1) E	 4884 (1) E

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

See Design Data pages in this section for clear opening dimensions.

Not to scale.
Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES
Aluminum-Clad Wood
Fixed



Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 822) (1 803)	5' 11 ³ / ₄ "	5' 5"	4' 9 ³ / ₄ "	4' 11"
(1 670) (1 651)	5' 5 ³ / ₄ "	4' 9 ³ / ₄ "	4' 5"	4' 11"
(1 467) (1 448)	4' 9 ³ / ₄ "	4' 5"	3' 11"	3' 5"
(1 365) (1 346)	4' 5 ³ / ₄ "	3' 11 ³ / ₄ "	3' 5"	2' 11 ³ / ₄ "
(1 213) (1 194)	3' 11 ³ / ₄ "	3' 5"	2' 11 ³ / ₄ "	2' 11"
(1 060) (1 041)	3' 5 ³ / ₄ "	3' 5"	3' 5"	3' 5"
(908) (889)	2' 11 ³ / ₄ "	2' 11"	2' 11 ³ / ₄ "	2' 11"
	4171	4771	5371	5971
	4165	4765	5365	5965
	4159	4759	5359	5959
	4157	4757	5357	5957
	4153	4753	5353	5953
	4147	4747	5347	5947
	4141	4741	5341	5941
	4135	4735	5335	5935

Not to scale.
Traditional grille patterns shown. Refer to Clad /Wood Overview section for additional patterns and profiles.
Grille patterns shown match equal sash split units.
Grille patterns will align with companion hung window.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood Cottage Sash



	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 ³ / ₄ "	2' 1 ³ / ₄ "	2' 5 ³ / ₄ "	2' 9 ³ / ₄ "	3' 1 ³ / ₄ "	3' 5 ³ / ₄ "	3' 9 ³ / ₄ "	4' 0 ³ / ₄ "
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(1 213) (1 194)								
(1 365) (1 346)								
(1 467) (1 448)								
(1 518) (1 499)								
(1 670) (1 651)								
(1 822) (1 803)								
(1 975) (1 956)								

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

E2 = With optional side pivot hardware, window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E3 = With optional side pivot hardware, window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.

Cottage (VG) units have unequal sash. Sash glass ratio is 40% upper sash to 60% Lower sash.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood Contemporary Sash



	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 ³ / ₄ "	2' 1 ³ / ₄ "	2' 5 ³ / ₄ "	2' 9 ³ / ₄ "	3' 1 ³ / ₄ "	3' 5 ³ / ₄ "	3' 9 ³ / ₄ "	4' 0 ³ / ₄ "
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(1 213) (1 194)								
(1 365) (1 346)								
(1 487) (1 468)								
(1 619) (1 489)								
(1 670) (1 651)								
(1 822) (1 803)								
(1 975) (1 956)								

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

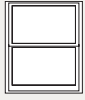
E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

Not to scale.

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.

Contemporary units have unequal sash. Sash glass ratio is 60% upper sash to 40% Lower sash.

















DOUBLE-HUNG

SIZE TABLES

























































Aluminum-Clad Wood Replacement Equal Sash



Transoms

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(451) (432)							
	23.5 x 17	27.5 x 17	29.5 x 17	31.5 x 17	35.5 x 17	39.5 x 17	41.5 x 17
(654) (635)							
	23.5 x 25	27.5 x 25	29.5 x 25	31.5 x 25	35.5 x 25	39.5 x 25	41.5 x 25

Vent Units

(921) (902)							
	23.5 x 35.5	27.5 x 35.5	29.5 x 35.5	31.5 x 35.5	35.5 x 35.5	39.5 x 35.5	41.5 x 35.5
(972) (953)							
	23.5 x 37.5	27.5 x 37.5	29.5 x 37.5	31.5 x 37.5	35.5 x 37.5	39.5 x 37.5	41.5 x 37.5
(1 073) (1 054)							
	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156)							
	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206)							
	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 499)							
	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359)							
	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461)							
	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5 ^{E1}	35.5 x 57.5 ^E	39.5 x 57.5 ^E	41.5 x 57.5 ^E

Egress Notes:

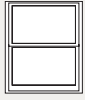
Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood Replacement Equal Sash



Vent Units	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 530) (1 511) 5' 0 1/4" 4' 11 1/2"	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5 ^{E1}	35.5 x 59.5 ^E	39.5 x 59.5 ^E	41.5 x 59.5 ^E
(1 581) (1 562) 5' 2 1/4" 5' 1 1/2"	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5 ^{E1}	31.5 x 61.5 ^{E1}	35.5 x 61.5 ^E	39.5 x 61.5 ^E	41.5 x 61.5 ^E
(1 683) (1 664) 5' 6 1/4" 5' 5 1/2"	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5 ^E	31.5 x 65.5 ^E	35.5 x 65.5 ^E	39.5 x 65.5 ^E	41.5 x 65.5 ^E
(1 835) (1 816) 6' 0 1/4" 5' 11 1/2"	23.5 x 71.5	27.5 x 71.5 ^{E1}	29.5 x 71.5 ^E	31.5 x 71.5 ^E	35.5 x 71.5 ^E	39.5 x 71.5 ^E	41.5 x 71.5 ^E

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood
Replacement Fixed Sash



Fixed Units	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(921) (902)	3' 0 ¹ / ₄ "	2' 11 ¹ / ₂ "		
(972) (953)	3' 2 ¹ / ₄ "	3' 1 ¹ / ₂ "		
(1 073) (1 054)	3' 6 ¹ / ₄ "	3' 5 ¹ / ₂ "		
(1 175) (1 156)	3' 10 ¹ / ₄ "	3' 9 ¹ / ₂ "		
(1 226) (1 206)	4' 0 ¹ / ₄ "	3' 11 ¹ / ₂ "		
(1 327) (1 308)	4' 4 ¹ / ₄ "	4' 3 ¹ / ₂ "		
(1 378) (1 359)	4' 6 ¹ / ₄ "	4' 5 ¹ / ₂ "		
(1 473) (1 461)	4' 10 ¹ / ₄ "	4' 9 ¹ / ₂ "		

Fixed Units	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 530) (1 511)	5' 0 ¹ / ₄ "	4' 11 ¹ / ₂ "		
(1 581) (1 562)	5' 2 ¹ / ₄ "	5' 1 ¹ / ₂ "		
(1 683) (1 664)	5' 6 ¹ / ₄ "	5' 5 ¹ / ₂ "		
(1 835) (1 816)	6' 0 ¹ / ₄ "	5' 11 ¹ / ₂ "		

Not to scale.
Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.
Grille patterns shown match equal sash split units.
Grille patterns will align with companion hung window.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood
Replacement Cottage Sash



Cottage Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 175) (1 156) 3' 10 1/4"	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206) 4' 0 1/4"	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 499) 4' 4 1/4"	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359) 4' 6 1/4"	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461) 4' 10 1/4"	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5	35.5 x 57.5	39.5 x 57.5	41.5 x 57.5
(1 530) (1 511) 5' 0 1/4"	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5	35.5 x 59.5	39.5 x 59.5	41.5 x 59.5
(1 581) (1 562) 5' 2 1/4"	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5	31.5 x 61.5	35.5 x 61.5	39.5 x 61.5	41.5 x 61.5
(1 663) (1 664) 5' 6 1/4"	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5	31.5 x 65.5	35.5 x 65.5	39.5 x 65.5	41.5 x 65.5
(1 835) (1 816) 6' 0 1/4"	23.5 x 71.5	27.5 x 71.5	29.5 x 71.5	31.5 x 71.5 ^{E1}	35.5 x 71.5 ^E	39.5 x 71.5 ^{E (1)}	41.5 x 71.5 ^{E (1)}

Egress Notes:

Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².
 (1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.
 See Design Data pages in this section for clear opening dimensions.

Not to scale.
 Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.
 Cottage (VG) units have unequal sash. Sash glass ratio is 40% upper sash to 60% Lower sash.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Replacement Contemporary Sash



Contemporary Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 175) (1 156) 3' 10 1/4"	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206) 4' 0 1/4"	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 499) 4' 4 1/4"	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359) 4' 6 1/4"	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461) 4' 10 1/4"	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5	35.5 x 57.5	39.5 x 57.5	41.5 x 57.5
(1 530) (1 511) 5' 0 1/4"	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5	35.5 x 59.5	39.5 x 59.5	41.5 x 59.5
(1 581) (1 562) 5' 2 1/4"	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5	31.5 x 61.5	35.5 x 61.5	39.5 x 61.5	41.5 x 61.5
(1 663) (1 664) 5' 6 1/4"	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5	31.5 x 65.5	35.5 x 65.5	39.5 x 65.5	41.5 x 65.5
(1 835) (1 816) 6' 0 1/4"	23.5 x 71.5	27.5 x 71.5	29.5 x 71.5	31.5 x 71.5 ^{E1}	35.5 x 71.5 ^E	39.5 x 71.5 ^{(1)E}	41.5 x 71.5 ^{(1)E}

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview section for additional patterns and profiles.

Contemporary units have unequal sash. Sash glass ratio is 60% upper sash to 40% Lower sash.



DOUBLE-HUNG

DESIGN DATA

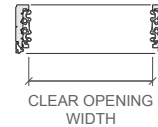
Aluminum-Clad Wood

Double-Hung

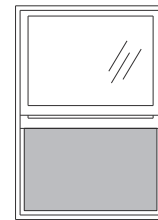


VENT EQUAL UNITS

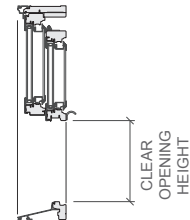
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
2135		17-1/2	14-9/16	1.8	2.7	2.5	3	LC50
2141		17-1/2	17-9/16	2.2	3.3	2.5	3	LC50
2147		17-1/2	20-9/16	2.5	3.9	2.5	3	LC50
2153		17-1/2	23-9/16	2.9	4.5	2.5	3	LC50
2157		17-1/2	25-9/16	3.1	5.0	2.5	3	LC50
2159		17-1/2	26-9/16	3.2	5.2	2.5	3	LC50
2165		17-1/2	29-9/16	3.6	5.8	2.5	3	LC50
2171		17-1/2	32-9/16	4.0	6.4	2.5	3	LC50
2177		17-1/2	35-9/16	4.3	7.0	2.5	3	LC50
2184		17-1/2	39-1/16	4.7	7.7	2.5	3	R15*
2535		21-1/2	14-9/16	2.2	3.4	2.5	3	LC50
2541		21-1/2	17-9/16	2.6	4.2	2.5	3	LC50
2547		21-1/2	20-9/16	3.1	5.0	2.5	3	LC50
2553		21-1/2	23-9/16	3.5	5.8	2.5	3	LC50
2557		21-1/2	25-9/16	3.8	6.3	2.5	3	LC50
2559		21-1/2	26-9/16	4.0	6.6	2.5	3	LC50
2565		21-1/2	29-9/16	4.4	7.3	2.5	3	LC50
2571		21-1/2	32-9/16	4.9	8.1	2.5	3	LC50
2577	E ₁	21-1/2	35-9/16	5.3	8.9	2.5	3	LC50
2584	E	21-1/2	39-1/16	5.8	9.8	2.5	3	R15*
2935		25-1/2	14-9/16	2.6	4.2	2.5	3	LC50
2941		25-1/2	17-9/16	3.1	5.1	2.5	3	LC50
2947		25-1/2	20-9/16	3.7	6.1	2.5	3	LC50
2953		25-1/2	23-9/16	4.2	7.0	2.5	3	LC50
2957		25-1/2	25-9/16	4.6	7.6	2.5	3	LC50
2959		25-1/2	26-9/16	4.7	8.0	2.5	3	LC50
2965	E ₁	25-1/2	29-9/16	5.3	8.9	2.5	3	LC50
2971	E	25-1/2	32-9/16	5.8	9.9	2.5	3	LC50
2977	E	25-1/2	35-9/16	6.3	10.8	2.5	3	LC50
2984	E	25-1/2	39-1/16	6.9	11.9	2.5	3	R15*
3335		29-1/2	14-9/16	3.0	4.9	2.5	3	LC50
3341		29-1/2	17-9/16	3.6	6.0	2.5	3	LC50
3347		29-1/2	20-9/16	4.2	7.1	2.5	3	LC50
3353		29-1/2	23-9/16	4.9	8.2	2.5	3	LC50
3357	E ₁	29-1/2	25-9/16	5.3	9.0	2.5	3	LC50
3359	E ₁	29-1/2	26-9/16	5.5	9.4	2.5	3	LC50
3365	E	29-1/2	29-9/16	6.1	10.5	2.5	3	LC50
3371	E	29-1/2	32-9/16	6.7	11.6	2.5	3	LC50
3377	E	29-1/2	35-9/16	7.3	12.7	2.5	3	LC50



CLEAR OPENING WIDTH



Shaded portion shows vent area.



CLEAR OPENING HEIGHT

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.

To convert areas to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

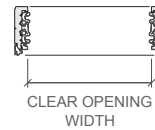
Aluminum-Clad Wood

Double-Hung



VENT EQUAL UNITS

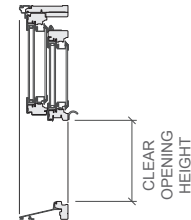
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
3384	E	29-1/2	39-1/16	8.0	14.0	2.5	3	R15*
3735		33-1/2	14-9/16	3.4	5.6	2.5	3	LC50
3741		33-1/2	17-9/16	4.1	6.9	2.5	3	LC50
3747		33-1/2	20-9/16	4.8	8.2	2.5	3	LC50
3753		33-1/2	23-9/16	5.5	9.5	2.5	3	LC50
3757	E	33-1/2	25-9/16	6.0	10.3	2.5	3	LC50
3759	E	33-1/2	26-9/16	6.2	10.8	2.5	3	LC50
3765	E	33-1/2	29-9/16	6.9	12.0	2.5	3	LC50
3771	E	33-1/2	32-9/16	7.6	13.3	2.5	3	LC50
3777	E	33-1/2	35-9/16	8.3	14.6	2.5	3	LC40
3784	E(1)	33-1/2	39-1/16	9.1	16.1	2.5	3	R15*
4135		37-1/2	14-9/16	3.8	6.4	2.5	3	LC50
4141		37-1/2	17-9/16	4.6	7.8	2.5	3	LC50
4147		37-1/2	20-9/16	5.4	9.3	2.5	3	LC50
4153		37-1/2	23-9/16	6.2	10.7	2.5	3	LC50
4157	E	37-1/2	25-9/16	6.7	11.7	2.5	3	LC50
4159	E	37-1/2	26-9/16	7.0	12.2	2.5	3	LC50
4165	E	37-1/2	29-9/16	7.7	13.6	2.5	3	LC50
4171	E	37-1/2	32-9/16	8.5	15.1	2.5	3	LC40
4177	E(1)	37-1/2	35-9/16	9.3	16.5	2.5	3	LC40
4184	E(1)	37-1/2	39-1/16	10.2	18.2	2.5	3	R15*
4535		41-1/2	14-9/16	4.2	7.1	2.5	3	LC50
4541		41-1/2	17-9/16	5.1	8.7	2.5	3	LC50
4547		41-1/2	20-9/16	6.0	10.3	2.5	3	LC50
4553		41-1/2	23-9/16	6.8	11.9	2.5	3	LC50
4557	E	41-1/2	25-9/16	7.4	13.0	2.5	3	LC50
4559	E	41-1/2	26-9/16	7.7	13.6	2.5	3	LC40
4565	E(1)	41-1/2	29-9/16	8.6	15.2	2.5	3	LC40
4571	E(1)	41-1/2	32-9/16	9.4	16.8	2.5	3	LC40
4577	E(1)	41-1/2	35-9/16	10.3	18.4	2.5	3	LC40
4584	E(1)	41-1/2	39-1/16	11.3	20.3	2.5	3	R15*
4835		44-1/2	14-9/16	4.5	7.6	2.5	3	LC30
4841		44-1/2	17-9/16	5.5	9.4	2.5	3	LC30
4847		44-1/2	20-9/16	6.4	11.1	2.5	3	LC30
4853		44-1/2	23-9/16	7.3	12.9	2.5	3	LC30
4857	E	44-1/2	25-9/16	7.9	14.0	2.5	3	LC30
4859	E	44-1/2	26-9/16	8.3	14.6	2.5	3	LC30
4865	E(1)	44-1/2	29-9/16	9.2	16.3	2.5	3	LC30
4871	E(1)	44-1/2	32-9/16	10.1	18.1	2.5	3	LC30
4877	E(1)	44-1/2	35-9/16	11.0	19.8	2.5	3	LC30
4884	E(1)	44-1/2	39-1/16	12.1	21.9	3	3	R15*



CLEAR OPENING WIDTH



Shaded portion shows vent area.



CLEAR OPENING HEIGHT

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.

To convert areas to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Fixed



FIXED UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
4135	6.8	2.5	3	CW35/CW50
4141	8.3	2.5	3	CW30/CW50
4147	9.7	2.5	3	R25/CW50
4153	11.1	3	3	CW35/CW50
4157	12.1	3	3	CW35/CW50
4159	12.6	3	3	CW30/CW50
4165	14.0	3	3	CW30/CW50
4171	15.5	3	3	R25/CW50
4735	8.0	2.5	3	CW30/CW50
4741	9.7	2.5	3	R25/CW50
4747	11.4	3	3	CW35/CW50
4753	13.1	3	3	CW30/CW50
4757	14.6	3	3	CW30/CW50
4759	14.8	3	3	R25/CW50
4765	16.5	3	3	R25/CW50
4771	18.1	4	4	CW30/CW50
5335	9.2	2.5	3	R25/CW50
5341	11.1	3	3	CW35/CW50
5347	13.1	3	3	CW30/CW50
5353	15.0	3	4	R25/CW50
5357	16.3	3	4	R25/CW50
5359	17.0	3	4	R25/CW50
5365	18.9	4	4	CW30/CW50
5371	20.8	4	4	CW30/CW50
5935	10.4	3	3	R25/CW50
5941	12.6	3	3	CW30/CW50
5947	14.8	3	3	R25/CW50
5953	17.0	3	4	R25/CW50
5957	18.4	4	4	CW35/CW50
5959	19.1	4	4	CW30/CW50
5965	21.3	4	4	CW30/CW50
5971	23.5	4	4	R25/CW50

FIXED TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
2117	1.0	2.5	3	R50
2517	1.3	2.5	3	R50
2917	1.6	2.5	3	R50
3317	1.9	2.5	3	R50
3717	2.2	2.5	3	R50
4117	2.5	2.5	3	R50
4517	2.8	2.5	3	R50
4817	3.0	2.5	3	R50
2125	1.8	2.5	3	R50
2525	2.3	2.5	3	R50
2925	2.8	2.5	3	R50
3325	3.4	2.5	3	R50
3725	3.9	2.5	3	R50
4125	4.4	2.5	3	R45/R50
4525	4.9	2.5	3	R40/R50
4825	5.3	2.5	3	R35/R50

(1) Maximum performance when glazed with the appropriate glass thickness. Second value, where shown, requires tempered glass.

To convert areas to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Cottage Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
2147		17-1/2	16-11/16	2.0	3.9	2.5	3	LC50
2153		17-1/2	19-1/16	2.3	4.5	2.5	3	LC50
2157		17-1/2	20-11/16	2.5	5.0	2.5	3	LC50
2159		17-1/2	21-7/16	2.6	5.2	2.5	3	LC50
2165		17-1/2	23-7/8	2.9	5.8	2.5	3	LC50
2171		17-1/2	26-1/4	3.2	6.4	2.5	3	R15*
2177		17-1/2	28-11/16	3.5	7.0	2.5	3	R15*
2547		21-1/2	16-11/16	2.5	5.0	2.5	3	LC50
2553		21-1/2	19-1/16	2.8	5.8	2.5	3	LC50
2557		21-1/2	20-11/16	3.1	6.3	2.5	3	LC50
2559		21-1/2	21-7/16	3.2	6.6	2.5	3	LC50
2565		21-1/2	23-7/8	3.6	7.3	2.5	3	LC50
2571		21-1/2	26-1/4	3.9	8.1	2.5	3	R15*
2577		21-1/2	28-11/16	4.3	8.9	2.5	3	R15*
2947		25-1/2	16-11/16	3.0	6.1	2.5	3	LC50
2953		25-1/2	19-1/16	3.4	7.0	2.5	3	LC50
2957		25-1/2	20-11/16	3.7	7.6	2.5	3	LC50
2959		25-1/2	21-7/16	3.8	8.0	2.5	3	LC50
2965		25-1/2	23-7/8	4.2	8.9	2.5	3	LC50
2971		25-1/2	26-1/4	4.7	9.9	2.5	3	R15*
2977	E1	25-1/2	28-11/16	5.1	10.8	2.5	3	R15*
3347		29-1/2	16-11/16	3.4	7.1	2.5	3	LC50
3353		29-1/2	19-1/16	3.9	8.2	2.5	3	LC50
3357		29-1/2	20-11/16	4.2	9.0	2.5	3	LC50
3359		29-1/2	21-7/16	4.4	9.4	2.5	3	LC50
3365		29-1/2	23-7/8	4.9	10.5	2.5	3	LC50
3371	E1	29-1/2	26-1/4	5.4	11.6	2.5	3	R15*
3377	E	29-1/2	28-11/16	5.9	12.7	2.5	3	R15*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Cottage Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
3747		33-1/2	16-11/16	3.9	8.2	2.5	3	LC50
3753		33-1/2	19-1/16	4.4	9.5	2.5	3	LC50
3757		33-1/2	20-11/16	4.8	10.3	2.5	3	LC50
3759		33-1/2	21-7/16	5.0	10.8	2.5	3	LC50
3765		33-1/2	23-7/8	5.6	12.0	2.5	3	LC40
3771	E	33-1/2	26-1/4	6.1	13.3	2.5	3	R15*
3777	E	33-1/2	28-11/16	6.7	14.6	2.5	3	R15*
4147		37-1/2	16-11/16	4.3	9.3	2.5	3	LC50
4153		37-1/2	19-1/16	5.0	10.7	2.5	3	LC50
4157		37-1/2	20-11/16	5.4	11.7	2.5	3	LC40
4159		37-1/2	21-7/16	5.6	12.2	2.5	3	LC40
4165		37-1/2	23-7/8	6.2	13.6	2.5	3	LC40
4171	E	37-1/2	26-1/4	6.8	15.1	2.5	3	R15*
4177	E	37-1/2	28-11/16	7.5	16.5	2.5	3	R15*
4547		41-1/2	16-11/16	4.8	10.3	2.5	3	LC50
4553		41-1/2	19-1/16	5.5	11.9	2.5	3	LC40
4557		41-1/2	20-11/16	6.0	13.0	2.5	3	LC40
4559		41-1/2	21-7/16	6.2	13.6	2.5	3	LC40
4565		41-1/2	23-7/8	6.9	15.2	2.5	3	LC40
4571	E	41-1/2	26-1/4	7.6	16.8	2.5	3	R15*
4577	E(1)	41-1/2	28-11/16	8.3	18.4	3	3	R15*
4847		44-1/2	16-11/16	5.1	11.1	2.5	3	LC30
4853		44-1/2	19-1/16	5.9	12.9	2.5	3	LC30
4857		44-1/2	20-11/16	6.4	14.0	2.5	3	LC30
4859		44-1/2	21-7/16	6.6	14.6	2.5	3	LC30
4865		44-1/2	23-7/8	7.4	16.3	2.5	3	LC30
4871	E(1)	44-1/2	26-1/4	8.1	18.1	3	3	R15*
4877	E(1)	44-1/2	28-11/16	8.9	19.8	3	3	R15*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Contemporary Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
2147		17-1/2	16-11/16	2.0	3.9	2.5	3	LC50
2153		17-1/2	19-1/16	2.3	4.5	2.5	3	LC50
2157		17-1/2	20-11/16	2.5	5.0	2.5	3	LC50
2159		17-1/2	21-7/16	2.6	5.2	2.5	3	LC50
2165		17-1/2	23-7/8	2.9	5.8	2.5	3	LC50
2171		17-1/2	26-1/4	3.2	6.4	2.5	3	R15*
2177		17-1/2	28-11/16	3.5	7.0	2.5	3	R15*
2547		21-1/2	16-11/16	2.5	5.0	2.5	3	LC50
2553		21-1/2	19-1/16	2.8	5.8	2.5	3	LC50
2557		21-1/2	20-11/16	3.1	6.3	2.5	3	LC50
2559		21-1/2	21-7/16	3.2	6.6	2.5	3	LC50
2565		21-1/2	23-7/8	3.6	7.3	2.5	3	LC50
2571		21-1/2	26-1/4	3.9	8.1	2.5	3	R15*
2577		21-1/2	28-11/16	4.3	8.9	2.5	3	R15*
2947		25-1/2	16-11/16	3.0	6.1	2.5	3	LC50
2953		25-1/2	19-1/16	3.4	7.0	2.5	3	LC50
2957		25-1/2	20-11/16	3.7	7.6	2.5	3	LC50
2959		25-1/2	21-7/16	3.8	8.0	2.5	3	LC50
2965		25-1/2	23-7/8	4.2	8.9	2.5	3	LC50
2971		25-1/2	26-1/4	4.7	9.9	2.5	3	R15*
2977	E1	25-1/2	28-11/16	5.1	10.8	2.5	3	R15*
3347		29-1/2	16-11/16	3.4	7.1	2.5	3	LC50
3353		29-1/2	19-1/16	3.9	8.2	2.5	3	LC50
3357		29-1/2	20-11/16	4.2	9.0	2.5	3	LC50
3359		29-1/2	21-7/16	4.4	9.4	2.5	3	LC50
3365		29-1/2	23-7/8	4.9	10.5	2.5	3	LC50
3371	E1	29-1/2	26-1/4	5.4	11.6	2.5	3	R15*
3377	E	29-1/2	28-11/16	5.9	12.7	2.5	3	R15*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Contemporary Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ²
		Width (Inches)	Height (Inches)			Annealed	Tempered	
3747		33-1/2	16-11/16	3.9	8.2	2.5	3	LC50
3753		33-1/2	19-1/16	4.4	9.5	2.5	3	LC50
3757		33-1/2	20-11/16	4.8	10.3	2.5	3	LC50
3759		33-1/2	21-7/16	5.0	10.8	2.5	3	LC50
3765		33-1/2	23-7/8	5.6	12.0	2.5	3	LC40
3771	E	33-1/2	26-1/4	6.1	13.3	2.5	3	R15*
3777	E	33-1/2	28-11/16	6.7	14.6	2.5	3	R15*
4147		37-1/2	16-11/16	4.3	9.3	2.5	3	LC50
4153		37-1/2	19-1/16	5.0	10.7	2.5	3	LC50
4157		37-1/2	20-11/16	5.4	11.7	2.5	3	LC40
4159		37-1/2	21-7/16	5.6	12.2	2.5	3	LC40
4165		37-1/2	23-7/8	6.2	13.6	2.5	3	LC40
4171	E	37-1/2	26-1/4	6.8	15.1	2.5	3	R15*
4177	E	37-1/2	28-11/16	7.5	16.5	2.5	3	R15*
4547		41-1/2	16-11/16	4.8	10.3	2.5	3	LC50
4553		41-1/2	19-1/16	5.5	11.9	2.5	3	LC40
4557		41-1/2	20-11/16	6.0	13.0	2.5	3	LC40
4559		41-1/2	21-7/16	6.2	13.6	2.5	3	LC40
4565		41-1/2	23-7/8	6.9	15.2	2.5	3	LC40
4571	E	41-1/2	26-1/4	7.6	16.8	2.5	3	R15*
4577	E(1)	41-1/2	28-11/16	8.3	18.4	3	3	R15*
4847		44-1/2	16-11/16	5.1	11.1	2.5	3	LC30
4853		44-1/2	19-1/16	5.9	12.9	2.5	3	LC30
4857		44-1/2	20-11/16	6.4	14.0	2.5	3	LC30
4859		44-1/2	21-7/16	6.6	14.6	2.5	3	LC30
4865		44-1/2	23-7/8	7.4	16.3	2.5	3	LC30
4871	E(1)	44-1/2	26-1/4	8.1	18.1	3	3	R15*
4877	E(1)	44-1/2	28-11/16	8.9	19.8	3	3	R15*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

(1) Does not meet egress if glazed with laminated IG, tinted IG, or tempered IG.

(2) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R15 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Replacement Equal Sash



EQUAL VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
23.5x35.5		20	14-13/16	2.0	3.2	2.5	3	LC50
23.5x37.5		20	15-13/16	2.1	3.4	2.5	3	LC50
23.5x41.5		20	17-13/16	2.4	3.9	2.5	3	LC50
23.5x45.5		20	19-13/16	2.7	4.4	2.5	3	LC50
23.5x47.5		20	20-13/16	2.8	4.6	2.5	3	LC50
23.5x51.5		20	22-13/16	3.1	5.1	2.5	3	LC50
23.5x53.5		20	23-13/16	3.3	5.3	2.5	3	LC50
23.5x57.5		20	25-13/16	3.5	5.8	2.5	3	LC50
23.5x59.5		20	26-13/16	3.7	6.0	2.5	3	LC50
23.5x61.5		20	27-13/16	3.8	6.3	2.5	3	LC50
23.5x65.5		20	29-13/16	4.1	6.8	2.5	3	LC50
23.5x71.5		20	32-13/16	4.5	7.5	2.5	3	LC50
27.5x35.5		24	14-13/16	2.4	3.9	2.5	3	LC50
27.5x37.5		24	15-13/16	2.6	4.2	2.5	3	LC50
27.5x41.5		24	17-13/16	2.9	4.8	2.5	3	LC50
27.5x45.5		24	19-13/16	3.3	5.4	2.5	3	LC50
27.5x47.5		24	20-13/16	3.4	5.7	2.5	3	LC50
27.5x51.5		24	22-13/16	3.8	6.3	2.5	3	LC50
27.5x53.5		24	23-13/16	3.9	6.6	2.5	3	LC50
27.5x57.5		24	25-13/16	4.3	7.2	2.5	3	LC50
27.5x59.5		24	26-13/16	4.4	7.5	2.5	3	LC50
27.5x61.5		24	27-13/16	4.6	7.8	2.5	3	LC50
27.5x65.5		24	29-13/16	4.9	8.3	2.5	3	LC50
27.5x71.5	E1	24	32-13/16	5.4	9.2	2.5	3	LC50
29.5x35.5		24	14-13/16	2.4	3.9	2.5	3	LC50
29.5x37.5		26	15-13/16	2.8	4.6	2.5	3	LC50
29.5x41.5		26	17-13/16	3.2	5.3	2.5	3	LC50
29.5x45.5		26	19-13/16	3.5	5.9	2.5	3	LC50
29.5x47.5		26	20-13/16	3.7	6.2	2.5	3	LC50
29.5x51.5		26	22-13/16	4.1	6.9	2.5	3	LC50
29.5x53.5		26	23-13/16	4.2	7.2	2.5	3	LC50
29.5x57.5		26	25-13/16	4.6	7.8	2.5	3	LC50
29.5x59.5		26	26-13/16	4.8	8.2	2.5	3	LC50
29.5x61.5	E1	26	27-13/16	5.0	8.5	2.5	3	LC50
29.5x65.5	E	26	29-13/16	5.3	9.1	2.5	3	LC50
29.5x71.5	E	26	32-13/16	5.9	10.1	2.5	3	LC50
31.5x35.5		28	14-13/16	2.8	4.7	2.5	3	LC50
31.5x37.5		28	15-13/16	3.0	5.0	2.5	3	LC50
31.5x41.5		28	17-13/16	3.4	5.7	2.5	3	LC50
31.5x45.5		28	19-13/16	3.8	6.4	2.5	3	LC50
31.5x47.5		28	20-13/16	4.0	6.8	2.5	3	LC50
31.5x51.5		28	22-13/16	4.4	7.5	2.5	3	LC50
31.5x53.5		28	23-13/16	4.6	7.8	2.5	3	LC50
31.5x57.5		28	25-13/16	5.0	8.5	2.5	3	LC50
31.5x59.5	E1	28	26-13/16	5.2	8.9	2.5	3	LC50
31.5x61.5	E1	28	27-13/16	5.4	9.2	2.5	3	LC50
31.5x65.5	E	28	29-13/16	5.7	9.9	2.5	3	LC50
31.5x71.5	E	28	32-13/16	6.3	11.0	2.5	3	LC50

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

To convert area to square meters (m²), multiply square feet by 0.0929.

(1) Maximum performance when glazed with the appropriate glass thickness.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood Replacement Equal Sash



EQUAL VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Width (Inches)	Height (Inches)			Annealed	Tempered	
35.5x35.5		32	14-13/16	3.2	5.4	2.5	3	LC50
35.5x37.5		32	15-13/16	3.5	5.8	2.5	3	LC50
35.5x41.5		32	17-13/16	3.9	6.6	2.5	3	LC50
35.5x45.5		32	19-13/16	4.4	7.4	2.5	3	LC50
35.5x47.5		32	20-13/16	4.6	7.8	2.5	3	LC50
35.5x51.5	E1	32	22-13/16	5.0	8.7	2.5	3	LC50
35.5x53.5	E1	32	23-13/16	5.2	9.1	2.5	3	LC50
35.5x57.5	E	32	25-13/16	5.7	9.9	2.5	3	LC50
35.5x59.5	E	32	26-13/16	5.9	10.3	2.5	3	LC50
35.5x61.5	E	32	27-13/16	6.1	10.7	2.5	3	LC50
35.5x65.5	E	32	29-13/16	6.6	11.5	2.5	3	LC50
35.5x71.5	E	32	32-13/16	7.2	12.7	2.5	3	LC40
39.5x35.5		36	14-13/16	3.7	6.2	2.5	3	LC50
39.5x37.5		36	15-13/16	3.9	6.6	2.5	3	LC50
39.5x41.5		36	17-13/16	4.4	7.5	2.5	3	LC50
39.5x45.5		36	19-13/16	4.9	8.5	2.5	3	LC50
39.5x47.5	E1	36	20-13/16	5.2	8.9	2.5	3	LC50
39.5x51.5	E1	36	22-13/16	5.7	9.8	2.5	3	LC50
39.5x53.5	E	36	23-13/16	5.9	10.3	2.5	3	LC50
39.5x57.5	E	36	25-13/16	6.4	11.2	2.5	3	LC50
39.5x59.5	E	36	26-13/16	6.7	11.7	2.5	3	LC50
39.5x61.5	E	36	27-13/16	6.9	12.2	2.5	3	LC50
39.5x65.5	E	36	29-13/16	7.4	13.1	2.5	3	LC40
39.5x71.5	E	36	32-13/16	8.2	14.5	2.5	3	LC40
41.5x35.5		38	14-13/16	3.9	6.5	2.5	3	LC50
41.5x37.5		38	15-13/16	4.1	7.0	2.5	3	LC50
41.5x41.5		38	17-13/16	4.6	8.0	2.5	3	LC50
41.5x45.5		38	19-13/16	5.2	9.0	2.5	3	LC50
41.5x47.5	E1	38	20-13/16	5.4	9.5	2.5	3	LC50
41.5x51.5	E	38	22-13/16	6.0	10.4	2.5	3	LC50
41.5x53.5	E	38	23-13/16	6.2	10.9	2.5	3	LC50
41.5x57.5	E	38	25-13/16	6.8	11.9	2.5	3	LC40
41.5x59.5	E	38	26-13/16	7.0	12.4	2.5	3	LC40
41.5x61.5	E	38	27-13/16	7.3	12.9	2.5	3	LC40
41.5x65.5	E	38	29-13/16	7.8	13.9	2.5	3	LC40
41.5x71.5	E	38	32-13/16	8.6	15.3	2.5	3	LC40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

To convert area to square meters (m²), multiply square feet by 0.0929.

(1) Maximum performance when glazed with the appropriate glass thickness.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Cottage and Contemporary Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
VG23.5x41.5		20	14-5/16	1.9	3.9	2.5	3	LC50
VG23.5x45.5		20	15-15/16	2.2	4.4	2.5	3	LC50
VG23.5x47.5		20	16-11/16	2.3	4.6	2.5	3	LC50
VG23.5x51.5		20	18-5/16	2.5	5.1	2.5	3	LC50
VG23.5x53.5		20	19-1/16	2.6	5.3	2.5	3	LC50
VG23.5x57.5		20	20-11/16	2.8	5.8	2.5	3	LC50
VG23.5x59.5		20	21-1/2	2.9	6.0	2.5	3	LC50
VG23.5x61.5		20	22-5/16	3.0	6.3	2.5	3	LC50
VG23.5x65.5		20	23-7/8	3.3	6.8	2.5	3	R20*
VG23.5x71.5		20	26-5/16	3.6	7.5	2.5	3	R20*
VG27.5x41.5		24	14-5/16	2.3	4.8	2.5	3	LC50
VG27.5x45.5		24	15-15/16	2.6	5.4	2.5	3	LC50
VG27.5x47.5		24	16-11/16	2.7	5.7	2.5	3	LC50
VG27.5x51.5		24	18-5/16	3.0	6.3	2.5	3	LC50
VG27.5x53.5		24	19-1/16	3.1	6.6	2.5	3	LC50
VG27.5x57.5		24	20-11/16	3.4	7.2	2.5	3	LC50
VG27.5x59.5		24	21-1/2	3.5	7.5	2.5	3	LC50
VG27.5x61.5		24	22-5/16	3.7	7.8	2.5	3	LC50
VG27.5x65.5		24	23-7/8	3.9	8.3	2.5	3	R20*
VG27.5x71.5		24	26-5/16	4.3	9.2	2.5	3	R20*
VG29.5x41.5		26	14-5/16	2.5	5.3	2.5	3	LC50
VG29.5x45.5		26	15-15/16	2.8	5.9	2.5	3	LC50
VG29.5x47.5		26	16-11/16	3.0	6.2	2.5	3	LC50
VG29.5x51.5		26	18-5/16	3.3	6.9	2.5	3	LC50
VG29.5x53.5		26	19-1/16	3.4	7.2	2.5	3	LC50
VG29.5x57.5		26	20-11/16	3.7	7.8	2.5	3	LC50
VG29.5x59.5		26	21-1/2	3.8	8.2	2.5	3	LC50
VG29.5x61.5		26	22-5/16	4.0	8.5	2.5	3	LC50
VG29.5x65.5		26	23-7/8	4.3	9.1	2.5	3	R20*
VG29.5x71.5		26	26-5/16	4.7	10.1	2.5	3	R20*
VG31.5x41.5		28	14-5/16	2.7	5.7	2.5	3	LC50
VG31.5x45.5		28	15-15/16	3.0	6.4	2.5	3	LC50
VG31.5x47.5		28	16-11/16	3.2	6.8	2.5	3	LC50
VG31.5x51.5		28	18-5/16	3.5	7.5	2.5	3	LC50
VG31.5x53.5		28	19-1/16	3.7	7.8	2.5	3	LC50
VG31.5x57.5		28	20-11/16	4.0	8.5	2.5	3	LC50
VG31.5x59.5		28	21-1/2	4.1	8.9	2.5	3	LC50
VG31.5x61.5		28	22-5/16	4.3	9.2	2.5	3	LC50
VG31.5x65.5		28	23-7/8	4.6	9.9	2.5	3	R20*
VG31.5x71.5	E1	28	26-5/16	5.1	11.0	2.5	3	R20*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².To convert area to square meters (m²), multiply square feet by 0.0929.

(1) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R20 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Cottage and Contemporary Sash

**VENT UNITS**

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Width (Inches)	Height (Inches)			Annealed	Tempered	
VG35.5x41.5		32	14-5/16	3.1	6.6	2.5	3	LC50
VG35.5x45.5		32	15-15/16	3.5	7.4	2.5	3	LC50
VG35.5x47.5		32	16-11/16	3.7	7.8	2.5	3	LC50
VG35.5x51.5		32	18-5/16	4.0	8.7	2.5	3	LC50
VG35.5x53.5		32	19-1/16	4.2	9.1	2.5	3	LC50
VG35.5x57.5		32	20-11/16	4.6	9.9	2.5	3	LC50
VG35.5x59.5		32	21-1/2	4.7	10.3	2.5	3	LC50
VG35.5x61.5		32	22-5/16	4.9	10.7	2.5	3	LC40
VG35.5x65.5		32	23-7/8	5.3	11.5	2.5	3	R20*
VG35.5x71.5	E	32	26-5/16	5.8	12.7	2.5	3	R20*
VG39.5x41.5		36	14-5/16	3.5	7.5	2.5	3	LC50
VG39.5x45.5		36	15-15/16	3.9	8.5	2.5	3	LC50
VG39.5x47.5		36	16-11/16	4.1	8.9	2.5	3	LC50
VG39.5x51.5		36	18-5/16	4.5	9.8	2.5	3	LC50
VG39.5x53.5		36	19-1/16	4.7	10.3	2.5	3	LC50
VG39.5x57.5		36	20-11/16	5.1	11.2	2.5	3	LC40
VG39.5x59.5		36	21-1/2	5.3	11.7	2.5	3	LC40
VG39.5x61.5		36	22-5/16	5.5	12.2	2.5	3	LC40
VG39.5x65.5		36	23-7/8	5.9	13.1	2.5	3	R20*
VG39.5x71.5	E (2)	36	26-5/16	6.5	14.5	2.5	3	R20*
VG41.5x41.5		38	14-5/16	3.7	8.0	2.5	3	LC50
VG41.5x45.5		38	15-15/16	4.1	9.0	2.5	3	LC50
VG41.5x47.5		38	16-11/16	4.4	9.5	2.5	3	LC50
VG41.5x51.5		38	18-5/16	4.8	10.4	2.5	3	LC40
VG41.5x53.5		38	19-1/16	5.0	10.9	2.5	3	LC40
VG41.5x57.5		38	20-11/16	5.4	11.9	2.5	3	LC40
VG41.5x59.5		38	21-1/2	5.6	12.4	2.5	3	LC40
VG41.5x61.5		38	22-5/16	5.8	12.9	2.5	3	LC40
VG41.5x65.5		38	23-7/8	6.3	13.9	2.5	3	R20*
VG41.5x71.5	E (2)	38	26-5/16	6.9	15.3	2.5	3	R20*

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

(2) Does not meet egress if glazed with laminated, tempered or tinted insulating glass.

To convert area to square meters (m²), multiply square feet by 0.0929.

(1) Maximum performance when glazed with the appropriate glass thickness.

* Units with Performance class and grade of R20 are not AAMA/WDMA performance certified. Units are engineered to meet the performance class and grade shown.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Fixed and Transoms

**FIXED UNITS**

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
41x35.5	7.2	2.5	3	CW35/CW50
41x37.5	7.7	2.5	3	CW35/CW50
41x41.5	8.7	2.5	3	CW30/CW50
41x45.5	9.7	2.5	3	R25/CW50
41x47.5	10.2	2.5	3	R25/CW50
41x51.5	11.1	3	3	CW35/CW50
41x53.5	11.6	3	3	CW35/CW50
41x57.5	12.6	3	3	CW30/CW50
41x59.5	13.1	3	3	CW30/CW50
41x61.5	13.6	3	3	CW30/CW50
41x65.5	14.6	3	3	CW30/CW50
41x71.5	16.0	3	3	R25/CW50
47x35.5	8.5	2.5	3	CW30/CW50
47x37.5	9.0	2.5	3	CW30/CW50
47x41.5	10.2	2.5	3	R25/CW50
47x45.5	11.3	3	3	CW35/CW50
47x47.5	11.9	3	3	CW35/CW50
47x51.5	13.1	3	3	CW30/CW50
47x53.5	13.6	3	3	CW30/CW50
47x57.5	14.8	3	3	CW30/CW50
47x59.5	15.3	3	3	R25/CW50
47x61.5	15.9	3	3	R25/CW50
47x65.5	17.1	3	3	R25/CW50
47x71.5	18.8	4	4	CW30/CW50
53x35.5	9.7	2.5	3	R25/CW50
53x37.5	10.4	2.5	3	R25/CW50
53x41.5	11.7	3	3	CW35/CW50
53x45.5	13.0	3	3	CW30/CW50
53x47.5	13.6	3	3	CW30/CW50
53x51.5	15.0	3	4	CW30/CW50
53x53.5	15.6	3	4	R25/CW50
53x57.5	16.9	3	4	R25/CW50
53x59.5	17.6	3	4	R25/CW50
53x61.5	18.2	3	4	CW35/CW50
53x65.5	19.6	4	4	CW30/CW50
53x71.5	21.5	4	4	CW30/CW50
59x35.5	11.0	3	3	CW35/CW50
59x37.5	11.7	3	3	CW35/CW50
59x41.5	13.2	3	3	CW30/CW50
59x45.5	14.6	3	3	CW30/CW50
59x47.5	15.4	3	3	R25/CW50
59x51.5	16.9	3	4	R25/CW50
59x53.5	17.6	3	4	R25/CW50
59x57.5	19.1	4	4	CW35/CW50
59x59.5	19.8	4	4	CW30/CW50
59x61.5	20.6	4	4	CW30/CW50
59x65.5	22.0	4	4	CW30/CW50
59x71.5	24.3	4	4	R25/CW50

FIXED TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
23.5x17	1.3	2.5	3	R50
23.5x25	2.3	2.5	3	R50
27.5x17	1.6	2.5	3	R50
27.5x25	2.9	2.5	3	R50
29.5x17	1.8	2.5	3	R50
29.5x25	3.1	2.5	3	R50
31.5x17	2.0	2.5	3	R50
31.5x25	3.4	2.5	3	R50
35.5x17	2.3	2.5	3	R50
35.5x25	3.9	2.5	3	R50
39.5x17	2.6	2.5	3	R50
39.5x25	4.5	2.5	3	R50
41.5x17	2.7	2.5	3	R50
41.5x25	4.7	2.5	3	R45/R50

(1) Maximum performance when glazed with the appropriate glass thickness. Second Value, where shown, requires tempered glass.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Miscellaneous Formulas and Dimensions

**Special Size Frame Dimensions ***

SASH CONFIGURATION	VENT-EQUAL	COTTAGE	CONTEMPORARY	FIXED
SASH GLASS RATIO TOP % : BOTTOM %	50 : 50	40 : 60	60 : 40	NA
SHORTEST UNIT FRAME SIZE	35" (889)	42-1/4" (1 073)	42-1/4" (1 073)	17" (432)
TALLEST UNIT FRAME SIZE	84" (2 134)	77" (1 956)	77" (1 956)	73" (1 854)
UNIT FRAME WIDTH RANGE	20-3/4" to 48" (527 to 1 219)	20-3/4" to 48" (527 to 1 219)	20-3/4" to 48" (527 to 1 219)	20-3/4" to 59" (432 to 1 499)

Miscellaneous Formulas

EQUAL SASH ONLY	VENT UNITS	FIXED AND TRANSOM UNITS
VISIBLE GLASS	Width = Frame - 6-1/4" Height ₁ = (Frame - 8-5/8") / 2	Width = Frame - 6-1/2" Height = Frame - 6-1/2"
ACTUAL GLASS **	Width = Frame - 5-1/4" Height ₁ = (Frame - 6-5/8") / 2	Width = Frame - 5-1/2" Height = Frame - 5-1/2"
CLEAR OPENING ***	Width = Frame - 3-1/2" Height = (Frame - 6-5/8") / 2 + 3/8"	

Shade Handling Guide

UNIT TYPE	SHADE OPERATOR LOCATION FROM EXTERIOR
Vent	Left
Fixed	Left

(1) Per Sash.

* Available within size range shown. Keep frame dimensions to the nearest 1/4" increments.

** Actual glass of exterior light. Hinged glass panel is 9/16" smaller. Keep frame dimensions to the nearest 1/4" increments.

*** Some larger sized units with laminated, tinted or tempered insulating glass have limited travel.



DOUBLE-HUNG

DETAILED PRODUCT DESCRIPTIONS

Aluminum-Clad Wood



FRAME

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine with no visible fastener holes.
- Exterior surfaces are clad with aluminum.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94 mm).
- Optional factory applied jamb extensions available for 4-9/16" (116 mm) and 6-9/16" (167 mm) wall depths.
- Jamb liner is high-impact polyvinyl chloride backed by continuous hard-tempered aluminum springs.
- Optional factory-applied EnduraClad® exterior trim.

SASH

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine with no visible fastener holes.
- Exterior surfaces are clad with aluminum, lap-jointed and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 2-3/32" (53 mm).
- Bottom sash will pivot between jambs without removal.

WEATHERSTRIPPING

- Foam with 3 mm skin at head. Water-stop santoprene-wrapped foam at sill; thermal-plastic elastomer bulb with slip-coating set into upper sash for tight contact at check rail.
- Secondary polyvinyl chloride leaf-type weatherstrip on bottom sash at sill.
- Jamb liner to seal against sides of sash.

GLAZING SYSTEM

- Quality float glass complying with ASTM C 1036.
- Triple-Pane glazing
 - Exterior dual-seal insulating glass, Polyurethane Reactive Hotmelt (PUR)-glazed, [[annealed] [tempered]] [[clear] [[Advanced][SunDefense™] [AdvancedComfort] [NaturalSun] Low-E coated, with argon] [[bronze] [gray] [green] [non-impact laminated] Advanced Low-E coated, with argon]].
 - High altitude glazing available.
 - Interior hinged glass panel set in veneer covered aluminum frame, fitted to sash with continuous gasket seal, [[annealed] [tempered]] [[clear] [obscure]].
 - Airspace is 1-3/32".

EXTERIOR

- Aluminum-clad exteriors shall be finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
- Color is [White] [Tan] [Brown] [Putty] [feature₁] [custom₁].
- or -
- Aluminum-clad exteriors shall be finished with EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step, baked-on finish.
- Color is [White] [Tan] [Brown] [Putty] [feature₁] [custom₁].

INTERIOR

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen White] [Bright White] [stain₁]].

HARDWARE

- Galvanized block-and-tackle balances are connected to sash with a polyester cord and concealed within the frame.
- Factory installed recessed sash lock. Two sash locks on unit frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].
- Sash lift furnished for field installation. Two lifts on unit frame width 37" and greater.
 - Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].

OPTIONAL PRODUCTS

Grilles

- Removable Between-Glass grilles
 - 3/4" profile with [Traditional] [Prairie] [Cross] [Top Row] [New England] patterns that are a contoured aluminum grille installed on the edge of the hinged glass panel.
 - Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain₁]].
 - Exterior finish will match exterior color cladding.

Screens

- InView™ screens
 - [Half-Size] [Full-Size] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.
- or -
- Vivid View® screens
 - [Half-Size] [Full-Size] PVDF 21/17 mesh, minimum 78 percent light transmissive screen, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish shall be baked enamel, color to match window cladding.

Window Fashions

- Slimshade® blinds₁
 - 15mm aluminum slat [tilt-only] [bottom-up] blinds with polyester cord ladder.
 - Installed on the hinged glass panel and controlled by built-in cordless operating mechanism.
 - Finish is [White] [Low-E transmissive Type-E gold tone].
- or -
- Cellular fabric shades₁
 - Spun bond Polyethylene Terephthalate (PET) cellular fabric, 11/16" in width, hidden polyester cord, [bottom-up] [top-down].
 - Installed on the hinged glass panel and controlled by built-in cordless operating mechanism.

Hardware

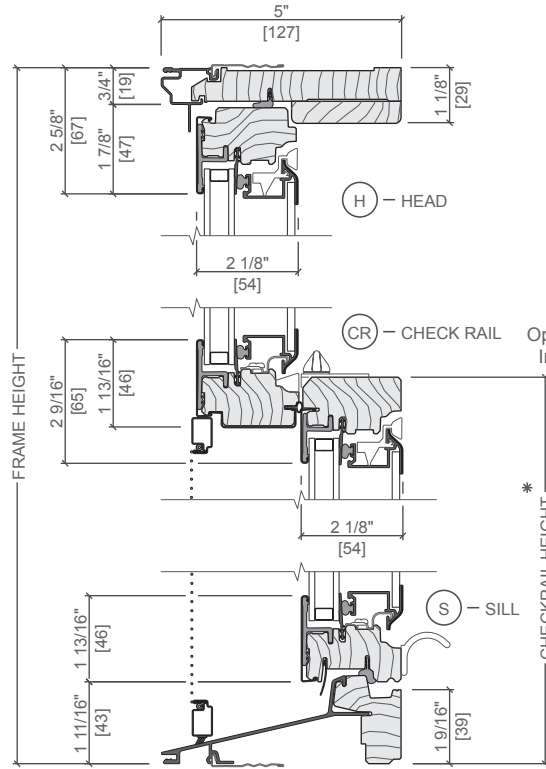
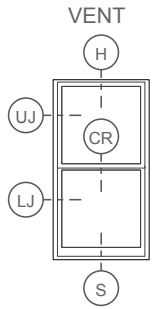
- Optional factory applied limited opening device available for vent units in steel, nominal 3-3/4" opening.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

(1) Contact your local Pella sales representative for current designs and color options.

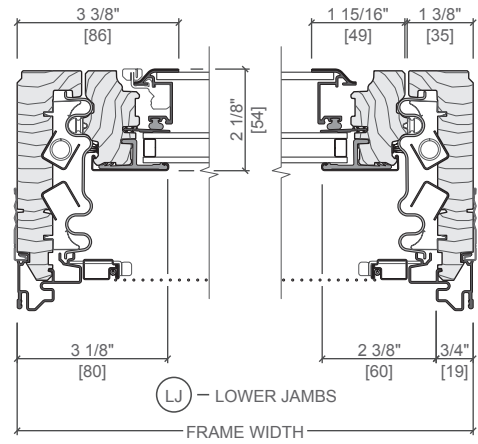
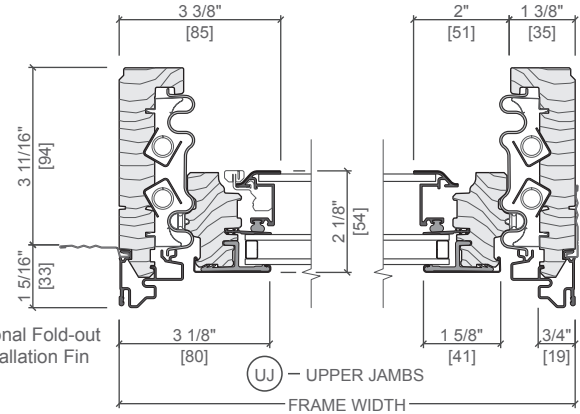


DOUBLE-HUNG

UNIT SECTIONS
 Aluminum-Clad Wood
 Triple-Pane Glazing



Optional Fold-out Installation Fin



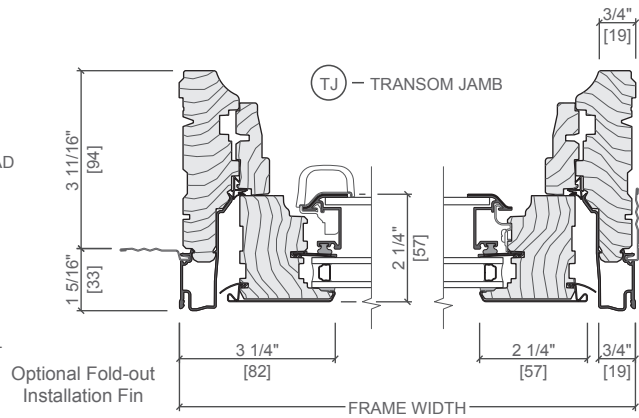
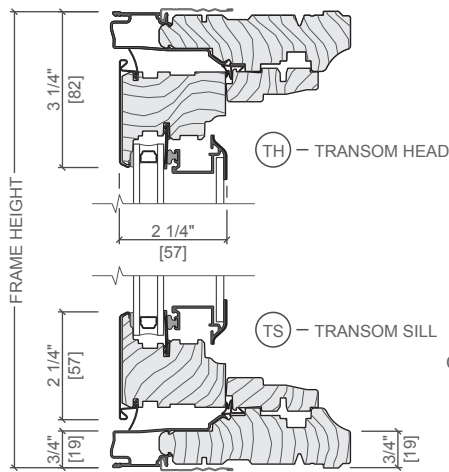
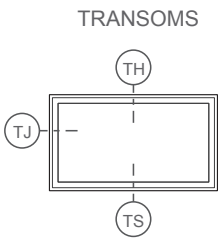
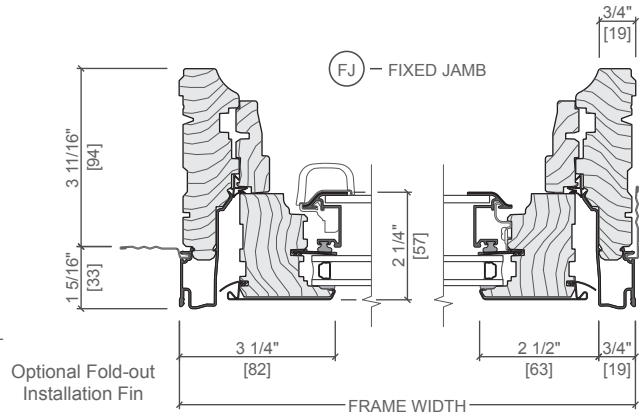
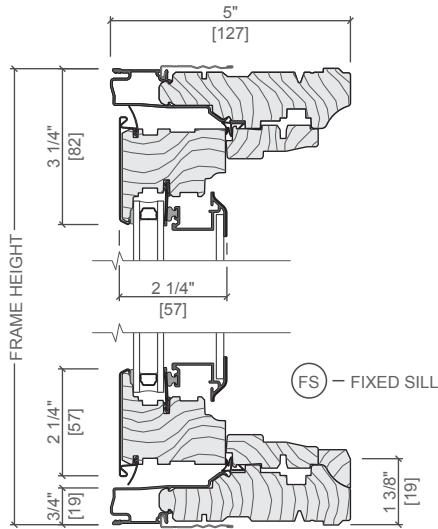
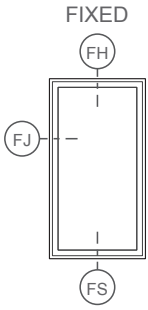
* Dimension for units with unequal sash.

Scale 3" = 1' 0"
 All dimensions are approximate.

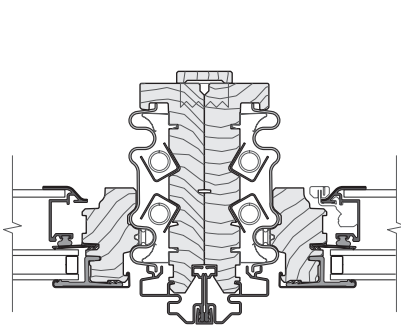


DOUBLE-HUNG

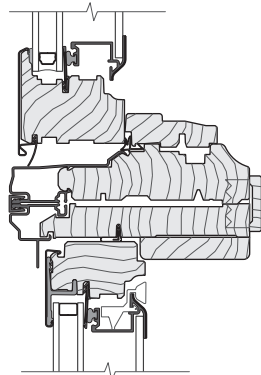
UNIT SECTIONS
Aluminum-Clad Wood
Triple-Pane Glazing



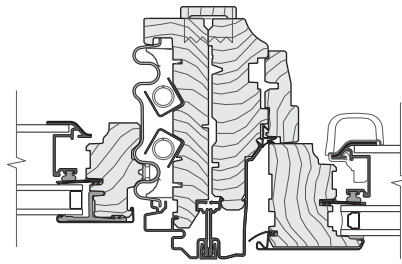
TYPICAL JOINING MULLIONS



VERTICAL JOINING MULLION
VENT / VENT



HORIZONTAL JOINING MULLION
TRANSOM / VENT



VERTICAL JOINING MULLION
VENT / FIXED

Scale 3" = 1' 0"

All dimensions are approximate.

See Installation and Performance at www.PellaADM.com for mullion limitations and reinforcing requirements.



DOUBLE-HUNG

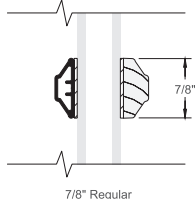
GRILLE TYPES

Typical Grille Profiles and Profiles

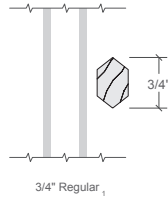


Grille Types

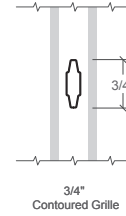
Simulated Divided Light Grilles



Removable Interior Pine Grilles

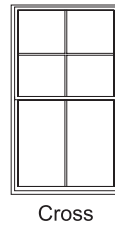
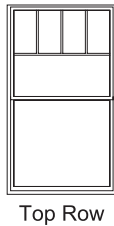
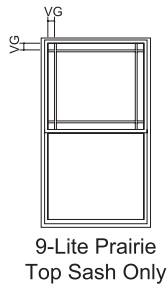
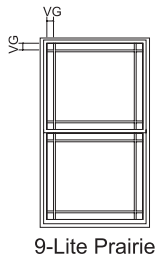


Grilles-Between-the-Glass



Grille Patterns

Grilles-Between-the-Glass and Simulated-Divided-Light Grilles



9-Lite Prairie

- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
- Available in transoms ≥ 1'3" height and width.

Cross

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

Top Row

- Minimum DH frame height 35".
- Horizontal bar will be at 1/2" of the VG height of the top sash.

For traditional patterns, see size tables.

VG = Visible Glass

(1) Grilles are available in traditional patterns only.

Lite dimensions noted can vary.

For size and pattern availability contact your local Pella sales representative.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Double-Hung with Removable Grilles



Vent Units

	(552) (533)	(654) (635)	(755) (737)	(857) (838)	(959) (940)	(1 060) (1 041)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"
(908) (889)						
(1 060) (1 041)						
(1 213) (1 194)						
(1 365) (1 346)						
(1 467) (1 448)						
(1 517) (1 499)						
(1 670) (1 651)						
(1 822) (1 803)						
(1 975) (1 956)						

Special Size Frame Dimensions*

	MINIMUM	MAXIMUM
VENT	1' 9" W x 2' 11" H (533 x 889)	3' 5" W x 6' 5" H (1 041 x 1 956)
FIXED	1' 9" W x 1' 2" H (533 x 356)	4' 11" W x 5' 11-1/2" H (1 499 x 1 816)

* Available within size range shown. Keep frame dimensions to the nearest 1/4" increment. Frame height cannot exceed frame width on special size vent units.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

- E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
- E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.

Grille patterns shown will align with grilles-between-the-glass on companion units.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Fixed and Transoms with Removable Grilles



Transoms

	(552) (533)	(654) (635)	(755) (737)	(857) (838)	(959) (940)	(1 060) (1 041)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"
(374) (366)	2114	2514	2914	3314	3714	4114
(451) (432)	2117	2517	2917	3317	3717	4117
(552) (533)	2121					
(654) (635)	2125	2525	2925	3325	3725	4125
(756) (737)			2929			

Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(908) (889)	4135	4735	5335	5935
(1 060) (1 041)	4141	4741	5341	5941
(1 213) (1 194)	4147	4747	5347	5947
(1 365) (1 346)	4153	4753	5353	5953
(1 467) (1 448)	4157	4757	5357	5957

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 517) (1 499)	4159	4759	5359	5959
(1 670) (1 651)	4165	4765	5365	5965
(1 822) (1 803)	4171	4771	5371	5971

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.

Grille patterns shown will align with grilles-between-the-glass on companion units.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Double-Hung with GBG's and SDL's¹



Vent Units

	(552) (533)	(654) (635)	(755) (737)	(857) (838)	(959) (940)	(1 060) (1 041)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"
(908) (889)						
(1 060) (1 041)						
(1 213) (1 194)						
(1 365) (1 346)						
(1 467) (1 448)						
(1 517) (1 499)						
(1 670) (1 651)						
(1 822) (1 803)						
(1 975) (1 956)						

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

(1) Simulated divided lights are available in traditional patterns only.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.

Grille patterns shown will align with grilles-between-the-glass on companion units.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Fixed and Transoms with GBG's and SDL's



Transoms

	(552) (533)	(654) (635)	(755) (737)	(857) (838)	(959) (940)	(1 060) (1 041)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"
(374) (356)						
(451) (432)						
(552) (533)						
(654) (635)						
(756) (737)						

Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(908) (889)				
(1 060) (1 041)				
(1 213) (1 194)				
(1 365) (1 346)				
(1 467) (1 448)				

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 517) (1 499)				
(1 670) (1 651)				
(1 822) (1 803)				

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.

Grille patterns shown will align with grilles-between-the-glass on companion units.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Replacement Double-Hung and Transoms with Removable Grilles



Transoms

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(375) (356)	23.5 x 14	27.5 x 14	29.5 x 14	31.5 x 14	35.5 x 14	39.5 x 14	41.5 x 14
(451) (432)	23.5 x 17	27.5 x 17	29.5 x 17	31.5 x 17	35.5 x 17	39.5 x 17	41.5 x 17
(654) (635)	23.5 x 25	27.5 x 25	29.5 x 25	31.5 x 25	35.5 x 25	39.5 x 25	41.5 x 25

Vent Units

(921) (902)	23.5 x 35.5	27.5 x 35.5	29.5 x 35.5	31.5 x 35.5	35.5 x 35.5	39.5 x 35.5	41.5 x 35.5
(972) (953)	23.5 x 37.5	27.5 x 37.5	29.5 x 37.5	31.5 x 37.5	35.5 x 37.5	39.5 x 37.5	41.5 x 37.5
(1 073) (1 054)	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156)	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206)	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 308)	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359)	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461)	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5 ^{E1}	35.5 x 57.5 ^E	39.5 x 57.5 ^E	41.5 x 57.5 ^E

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Replacement Double-Hung with Removable Grilles



Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 530) (1 511)	5' 0 1/4" 4' 11 1/2"						
	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5	35.5 x 59.5	39.5 x 59.5	41.5 x 59.5
(1 581) (1 562)	5' 2 1/4" 5' 1 1/2"						
	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5	31.5 x 61.5	35.5 x 61.5	39.5 x 61.5	41.5 x 61.5
(1 683) (1 664)	5' 6 1/4" 5' 5 1/2"						
	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5	31.5 x 65.5	35.5 x 65.5	39.5 x 65.5	41.5 x 65.5
(1 835) (1 816)	6' 0 1/4" 5' 11 1/2"						
	23.5 x 71.5	27.5 x 71.5	29.5 x 71.5	31.5 x 71.5	35.5 x 71.5	39.5 x 71.5	41.5 x 71.5

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



DOUBLE-HUNG

SIZE TABLES

Aluminum-Clad Wood

Replacement Double-Hung and Transoms with Grilles-Between-the-Glass

Transoms

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(375) (356)	23.5 x 14	27.5 x 14	29.5 x 14	31.5 x 14	35.5 x 14	39.5 x 14	41.5 x 14
(451) (432)	23.5 x 17	27.5 x 17	29.5 x 17	31.5 x 17	35.5 x 17	39.5 x 17	41.5 x 17
(654) (635)	23.5 x 25	27.5 x 25	29.5 x 25	31.5 x 25	35.5 x 25	39.5 x 25	41.5 x 25

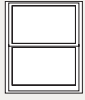
Vent Units

(921) (902)	23.5 x 35.5	27.5 x 35.5	29.5 x 35.5	31.5 x 35.5	35.5 x 35.5	39.5 x 35.5	41.5 x 35.5
(972) (953)	23.5 x 37.5	27.5 x 37.5	29.5 x 37.5	31.5 x 37.5	35.5 x 37.5	39.5 x 37.5	41.5 x 37.5
(1 073) (1 054)	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156)	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206)	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 308)	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359)	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461)	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5 E ₁	35.5 x 57.5 E	39.5 x 57.5 E	41.5 x 57.5 E

Egress Notes:
 Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².
 See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



DOUBLE-HUNG

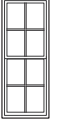
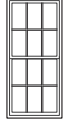





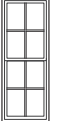
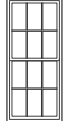




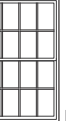
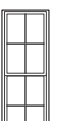
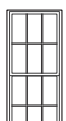
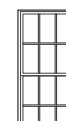




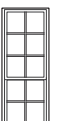
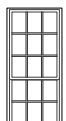




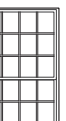
SIZE TABLES

Aluminum-Clad Wood

Replacement Double-Hung with Grilles-Between-the-Glass



Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 530) (1 511)							
	23.5 x 59.5	27.5 x 59.5	29.5 x 59.5	31.5 x 59.5	35.5 x 59.5	39.5 x 59.5	41.5 x 59.5
(1 581) (1 562)							
	23.5 x 61.5	27.5 x 61.5	29.5 x 61.5	31.5 x 61.5	35.5 x 61.5	39.5 x 61.5	41.5 x 61.5
(1 663) (1 664)							
	23.5 x 65.5	27.5 x 65.5	29.5 x 65.5	31.5 x 65.5	35.5 x 65.5	39.5 x 65.5	41.5 x 65.5
(1 835) (1 816)							
	23.5 x 71.5	27.5 x 71.5	29.5 x 71.5	31.5 x 71.5	35.5 x 71.5	39.5 x 71.5	41.5 x 71.5

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



DOUBLE-HUNG



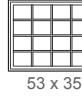









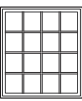
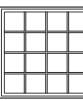
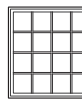
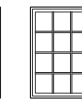
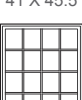
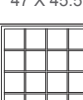
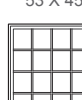



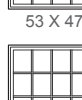









SIZE TABLES

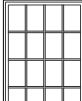
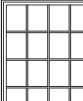
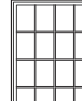
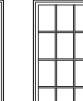








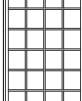
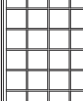
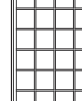
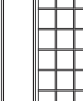
Aluminum-Clad Wood

Replacement Fixed with Removable Grilles



Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 921) (1 902)				
	41 x 35.5	47 x 35.5	53 x 35.5	59 x 35.5
(1 972) (1 953)				
	41 x 37.5	47 x 37.5	53 x 37.5	59 x 37.5
(1 1073) (1 1054)				
	41 x 41.5	47 x 41.5	53 x 41.5	59 x 41.5
(1 1175) (1 1156)				
	41 X 45.5	47 X 45.5	53 X 45.5	59 X 45.5
(1 226) (1 206)				
	41 X 47.5	47 X 47.5	53 X 47.5	59 X 47.5
(1 327) (1 308)				
	41 x 51.5	47 x 51.5	53 x 51.5	59 x 51.5
(1 378) (1 359)				
	41 x 53.5	47 x 53.5	53 x 53.5	59 x 53.5
(1 473) (1 461)				
	41 x 57.5	47 x 57.5	53 x 57.5	59 x 57.5

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 530) (1 511)				
	41 x 59.5	47 x 59.5	53 x 59.5	59 x 59.5
(1 581) (1 562)				
	41 x 61.5	47 x 61.5	53 x 61.5	59 x 61.5
(1 683) (1 664)				
	41 x 65.5	47 x 65.5	53 x 65.5	59 x 65.5
(1 835) (1 816)				
	41 x 71.5	47 x 71.5	53 x 71.5	59 x 71.5

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



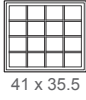
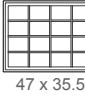






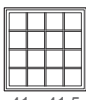
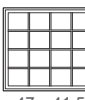
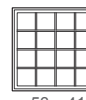
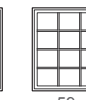
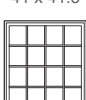
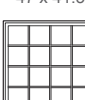
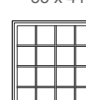
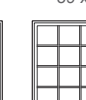












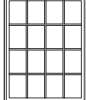
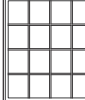
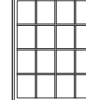

DOUBLE-HUNG

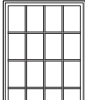
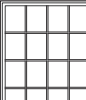
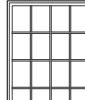
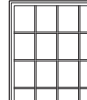








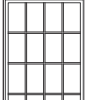
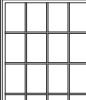
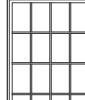
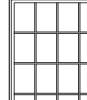
SIZE TABLES

Aluminum-Clad Wood

Replacement Fixed with Grilles-Between-the-Glass



	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(921) (902)	 41 x 35.5	 47 x 35.5	 53 x 35.5	 59 x 35.5
(972) (953)	 41 x 37.5	 47 x 37.5	 53 x 37.5	 59 x 37.5
(1 073) (1 054)	 41 x 41.5	 47 x 41.5	 53 x 41.5	 59 x 41.5
(1 175) (1 156)	 41 x 45.5	 47 x 45.5	 53 x 45.5	 59 x 45.5
(1 226) (1 206)	 41 x 47.5	 47 x 47.5	 53 x 47.5	 59 x 47.5
(1 327) (1 308)	 41 x 51.5	 47 x 51.5	 53 x 51.5	 59 x 51.5
(1 378) (1 359)	 41 x 53.5	 47 x 53.5	 53 x 53.5	 59 x 53.5
(1 473) (1 461)	 41 x 57.5	 47 x 57.5	 53 x 57.5	 59 x 57.5
	3' 0 1/4"	3' 1 1/2"	3' 2 1/4"	3' 3 1/2"
	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
	3' 5"	3' 11"	4' 5"	4' 11"

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(1 530) (1 511)	 41 x 59.5	 47 x 59.5	 53 x 59.5	 59 x 59.5
(1 581) (1 562)	 41 x 61.5	 47 x 61.5	 53 x 61.5	 59 x 61.5
(1 683) (1 664)	 41 x 65.5	 47 x 65.5	 53 x 65.5	 59 x 65.5
(1 835) (1 816)	 41 x 71.5	 47 x 71.5	 53 x 71.5	 59 x 71.5
	5' 0 1/4"	5' 1 1/2"	5' 2 1/4"	5' 3 1/2"
	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"
	3' 5"	3' 11"	4' 5"	4' 11"

Egress Notes:

Check all applicable local codes for emergency egress requirements.

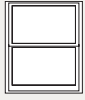
E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Not to scale.

Traditional grille patterns shown. Refer to Clad/Wood Overview Section for additional patterns and profiles.



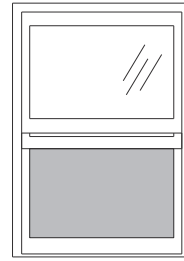
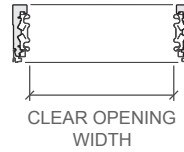
DOUBLE-HUNG

DESIGN DATA
Aluminum-Clad Wood
Double-Hung



VENT UNITS

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width	Height			Annealed	Tempered	
2135		17-13/16	14-1/4	1.8	3.2	2.5	3	LC50
2141		17-13/16	17-1/4	2.1	3.9	2.5	3	LC50
2147		17-13/16	20-1/4	2.5	4.5	2.5	3	LC50
2153		17-13/16	23-1/4	2.9	5.2	2.5	3	LC50
2157		17-13/16	25-1/4	3.1	5.6	2.5	3	LC40/LC50
2159		17-13/16	26-1/4	3.2	5.9	2.5	3	LC40/LC50
2165		17-13/16	29-1/4	3.6	6.5	2.5	3	LC40/LC50
2171		17-13/16	32-1/4	4.0	7.2	2.5	3	LC30
2177		17-13/16	35-1/4	4.3	7.8	2.5	3	LC30
2535		21-13/16	14-1/4	2.2	4.0	2.5	3	LC50
2541		21-13/16	17-1/4	2.6	4.8	2.5	3	LC50
2547		21-13/16	20-1/4	3.1	5.7	2.5	3	LC50
2553		21-13/16	23-1/4	3.5	6.5	2.5	3	LC50
2557		21-13/16	25-1/4	3.8	7.0	2.5	3	LC40/LC50
2559		21-13/16	26-1/4	4.0	7.3	2.5	3	LC40/LC50
2565		21-13/16	29-1/4	4.4	8.2	2.5	3	LC40/LC50
2571		21-13/16	32-1/4	4.9	9.0	2.5	3	LC30
2577	E ₁	21-13/16	35-1/4	5.3	9.8	2.5	3	LC30
2935		25-13/16	14-1/4	2.6	4.8	2.5	3	LC50
2941		25-13/16	17-1/4	3.1	5.8	2.5	3	LC50
2947		25-13/16	20-1/4	3.6	6.8	2.5	3	LC50
2953		25-13/16	23-1/4	4.2	7.8	2.5	3	LC50
2957		25-13/16	25-1/4	4.5	8.4	2.5	3	LC40/LC50
2959		25-13/16	26-1/4	4.7	8.8	2.5	3	LC40/LC50
2965	E ₁	25-13/16	29-1/4	5.2	9.8	2.5	3	LC40/LC50
2971	E	25-13/16	32-1/4	5.8	10.8	2.5	3	LC30
2977	E	25-13/16	35-1/4	6.3	11.7	2.5	3	LC30
3335		29-13/16	14-1/4	3.0	5.6	2.5	3	LC50
3341		29-13/16	17-1/4	3.6	6.7	2.5	3	LC50
3347		29-13/16	20-1/4	4.2	7.9	2.5	3	LC50
3353		29-13/16	23-1/4	4.8	9.1	2.5	3	LC40/LC50
3357	E ₁	29-13/16	25-1/4	5.2	9.9	2.5	3	LC40/LC50
3359	E ₁	29-13/16	26-1/4	5.4	10.2	2.5	3	LC40/LC50
3365	E	29-13/16	29-1/4	6.1	11.4	2.5	3	LC35/LC50
3371	E	29-13/16	32-1/4	6.7	12.6	2.5	3	LC30
3377	E	29-13/16	35-1/4	7.3	13.7	2.5	3	LC30
3735		33-13/16	14-1/4	3.3	6.4	2.5	3	LC35/LC50
3741		33-13/16	17-1/4	4.1	7.7	2.5	3	LC35/LC50
3747		33-13/16	20-1/4	4.8	9.0	2.5	3	LC35/LC50
3753		33-13/16	23-1/4	5.5	10.4	2.5	3	LC35/LC50
3757	E	33-13/16	25-1/4	5.9	11.3	2.5	3	LC35/LC50
3759	E	33-13/16	26-1/4	6.2	11.7	2.5	3	LC35/LC50
3765	E	33-13/16	29-1/4	6.9	13.0	2.5	3	LC35/LC50
3771	E	33-13/16	32-1/4	7.6	14.4	2.5	3	LC30/LC50
3777	E	33-13/16	35-1/4	8.3	15.7	2.5	3	LC30
4135		37-13/16	14-1/4	3.7	6.5	2.5	3	LC30
4141		37-13/16	17-1/4	4.5	7.9	2.5	3	LC30
4147		37-13/16	20-1/4	5.3	9.2	2.5	3	LC30
4153		37-13/16	23-1/4	6.1	11.7	2.5	3	LC30
4157	E	37-13/16	25-1/4	6.6	12.7	2.5	3	LC30
4159	E	37-13/16	26-1/4	6.9	13.2	2.5	3	LC30
4165	E	37-13/16	29-1/4	7.7	14.7	2.5	3	LC30
4171	E	37-13/16	32-1/4	8.5	16.2	2.5	3	LC30
4177	E	37-13/16	35-1/4	9.2	17.6	2.5	3	LC30



Shaded portion shows vent area.

Miscellaneous Formulas (Equal Sash Only)

VENT UNITS	
VISIBLE GLASS	Width = Frame - 5"
	Height* = (Frame - 6-5/16") / 2
ACTUAL GLASS	Width = Frame - 4"
	Height* = (Frame - 4-5/16") / 2

CLEAR OPENING HEIGHT:

(Frame Height/2) - 3-1/4"

CLEAR OPENING WIDTH:

Frame Width - 3-3/16"

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(*) Per Sash

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates performance with DP Enhancement Kit installed.

To convert area to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Fixed and Transoms



FIXED UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
4135	7.5	3	3	R50
4141	9.0	3	3	R50
4147	10.5	3	3	R50
4153	12.0	3	3	R50
4157	13.0	3	3	R50
4159	13.6	3	3	R50
4165	15.1	3	3	R50
4171	16.6	3	3	R45/R50 _{TR}
4735	8.8	3	3	R50
4741	10.5	3	3	R50
4747	12.3	3	3	R50
4753	14.1	3	3	R50
4757	15.2	3	3	R50
4759	15.8	3	3	R45/R50 _{TR}
4765	17.6	3	3	R45/R50 _{TR}
4771	19.3	4	4	R50
5335	10.0	3	3	R50
5341	12.0	3	3	R50
5347	14.1	3	3	R50
5353	16.1	3	4	R45/R50 _{TR}
5357	17.4	3	4	R45/R50 _{TR}
5359	18.1	4	4	R50
5365	20.1	4	4	R50
5371	22.1	4	4	R50
5935	11.3	3	3	R50
5941	13.6	3	3	R50
5947	15.8	3	3	R45/R50 _{TR}
5953	18.1	4	4	R50
5957	19.6	4	4	R50
5959	20.3	4	4	R50
5965	22.6	4	4	R50
5971	24.8	4	4	R45/R50 _{TR}

FIXED TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
2114	1.0	3	3	R50
2117	1.3	3	3	R50
2121	1.8	3	3	R50
2125	2.2	3	3	R50
2514	1.3	3	3	R50
2517	1.7	3	3	R50
2525	2.8	3	3	R50
2914	1.5	3	3	R50
2917	2.0	3	3	R50
2925	3.4	3	3	R50
2929	4.0	3	3	R50
3314	1.8	3	3	R50
3317	2.4	3	3	R50
3325	3.9	3	3	R50
3714	2.0	3	3	R50
3717	2.7	3	3	R50
3725	4.5	3	3	R50
4114	2.3	3	3	R50
4117	3.0	3	3	R50
4125	5.0	2.5	3	R50

Miscellaneous Formulas (Fixed Units Only)

FIXED AND TRANSOM UNITS

VISIBLE GLASS

Width = Frame - 4-15/16"
Height = Frame - 4-15/16"

ACTUAL GLASS

Width = Frame - 4"
Height = Frame - 4"

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.

TR = Second number shown requires tempered glass.

To convert areas to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Double-Hung Equal Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
23.5x35.5		20-5/16	14-1/2	2.0	3.7	2.5	3	LC50
23.5x37.5		20-5/16	15-1/2	2.1	4.0	2.5	3	LC50
23.5x41.5		20-5/16	17-1/2	2.4	4.5	2.5	3	LC50
23.5x45.5		20-5/16	19-1/2	2.7	5.0	2.5	3	LC50
23.5x47.5		20-5/16	20-1/2	2.8	5.3	2.5	3	LC50
23.5x51.5		20-5/16	22-1/2	3.1	5.8	2.5	3	LC50
23.5x53.5		20-5/16	23-1/2	3.3	6.1	2.5	3	LC40/LC50
23.5x57.5		20-5/16	25-1/2	3.5	6.6	2.5	3	LC40/LC50
23.5x59.5		20-5/16	26-1/2	3.7	6.8	2.5	3	LC40/LC50
23.5x61.5		20-5/16	27-1/2	3.8	7.1	2.5	3	LC40/LC50
23.5x65.5		20-5/16	29-1/2	4.1	7.6	2.5	3	LC30
23.5x71.5		20-5/16	32-1/2	4.5	8.4	2.5	3	LC30
27.5x35.5		24-5/16	14-1/2	2.4	4.6	2.5	3	LC50
27.5x37.5		24-5/16	15-1/2	2.6	4.9	2.5	3	LC50
27.5x41.5		24-5/16	17-1/2	2.9	5.5	2.5	3	LC50
27.5x45.5		24-5/16	19-1/2	3.2	6.1	2.5	3	LC50
27.5x47.5		24-5/16	20-1/2	3.4	6.4	2.5	3	LC50
27.5x51.5		24-5/16	22-1/2	3.7	7.1	2.5	3	LC50
27.5x53.5		24-5/16	23-1/2	3.9	7.4	2.5	3	LC40/LC50
27.5x57.5		24-5/16	25-1/2	4.3	8.0	2.5	3	LC40/LC50
27.5x59.5		24-5/16	26-1/2	4.4	8.3	2.5	3	LC40/LC50
27.5x61.5		24-5/16	27-1/2	4.6	8.6	2.5	3	LC40/LC50
27.5x65.5		24-5/16	29-1/2	4.9	9.2	2.5	3	LC30
27.5x71.5	E ₁	24-5/16	32-1/2	5.4	10.2	2.5	3	LC30
29.5x35.5		26-5/16	14-1/2	2.6	5.0	2.5	3	LC50
29.5x37.5		26-5/16	15-1/2	2.8	5.3	2.5	3	LC50
29.5x41.5		26-5/16	17-1/2	3.1	6.0	2.5	3	LC50
29.5x45.5		26-5/16	19-1/2	3.5	6.7	2.5	3	LC50
29.5x47.5		26-5/16	20-1/2	3.7	7.0	2.5	3	LC40/LC50
29.5x51.5		26-5/16	22-1/2	4.1	7.7	2.5	3	LC40/LC50
29.5x53.5		26-5/16	23-1/2	4.2	8.0	2.5	3	LC40/LC50
29.5x57.5		26-5/16	25-1/2	4.6	8.7	2.5	3	LC40/LC50
29.5x59.5		26-5/16	26-1/2	4.8	9.0	2.5	3	LC35/LC50
29.5x61.5	E ₁	26-5/16	27-1/2	5.0	9.4	2.5	3	LC35/LC50
29.5x65.5	E ₁	26-5/16	29-1/2	5.3	10.1	2.5	3	LC30
29.5x71.5	E	26-5/16	32-1/2	5.9	11.1	2.5	3	LC30

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates performance with DP Enhancement Kit installed.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Double-Hung Equal Sash



VENT UNITS

Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Width (Inches)	Height (Inches)			Annealed	Tempered	
31.5x35.5		28-5/16	14-1/2	2.8	5.4	2.5	3	LC50
31.5x37.5		28-5/16	15-1/2	3.0	5.7	2.5	3	LC50
31.5x41.5		28-5/16	17-1/2	3.4	6.5	2.5	3	LC50
31.5x45.5		28-5/16	19-1/2	3.8	7.2	2.5	3	LC50
31.5x47.5		28-5/16	20-1/2	4.0	7.6	2.5	3	LC40/LC50
31.5x51.5		28-5/16	22-1/2	4.4	8.3	2.5	3	LC40/LC50
31.5x53.5		28-5/16	23-1/2	4.6	8.7	2.5	3	LC40/LC50
31.5x57.5	E1	28-5/16	25-1/2	5.0	9.4	2.5	3	LC40/LC50
31.5x59.5	E1	28-5/16	26-1/2	5.2	9.8	2.5	3	LC35/LC50
31.5x61.5	E1	28-5/16	27-1/2	5.4	10.2	2.5	3	LC35/LC50
31.5x65.5	E	28-5/16	29-1/2	5.8	10.9	2.5	3	LC30
31.5x71.5	E	28-5/16	32-1/2	6.3	12.0	2.5	3	LC30
35.5x35.5		32-5/16	14-1/2	3.2	6.2	2.5	3	LC35/LC50
35.5x37.5		32-5/16	15-1/2	3.4	6.6	2.5	3	LC35/LC50
35.5x41.5		32-5/16	17-1/2	3.9	7.5	2.5	3	LC35/LC50
35.5x45.5		32-5/16	19-1/2	4.3	8.3	2.5	3	LC35/LC50
35.5x47.5		32-5/16	20-1/2	4.6	8.7	2.5	3	LC35/LC50
35.5x51.5		32-5/16	22-1/2	5.0	9.6	2.5	3	LC35/LC50
35.5x53.5		32-5/16	23-1/2	5.2	10.0	2.5	3	LC35/LC50
35.5x57.5	E1	32-5/16	25-1/2	5.7	10.8	2.5	3	LC35/LC50
35.5x59.5	E	32-5/16	26-1/2	5.9	11.3	2.5	3	LC35/LC50
35.5x61.5	E	32-5/16	27-1/2	6.1	11.7	2.5	3	LC35/LC50
35.5x65.5	E	32-5/16	29-1/2	6.6	12.5	2.5	3	LC30
35.5x71.5	E	32-5/16	32-1/2	7.2	13.8	2.5	3	LC30
39.5x35.5		36-5/16	14-1/2	3.6	7.0	2.5	3	LC30
39.5x37.5		36-5/16	15-1/2	3.9	7.5	2.5	3	LC30
39.5x41.5		36-5/16	17-1/2	4.4	8.4	2.5	3	LC30
39.5x45.5		36-5/16	19-1/2	4.9	9.4	2.5	3	LC30
39.5x47.5		36-5/16	20-1/2	5.1	9.9	2.5	3	LC30
39.5x51.5		36-5/16	22-1/2	5.6	10.8	2.5	3	LC30
39.5x53.5		36-5/16	23-1/2	5.9	11.3	2.5	3	LC30
39.5x57.5	E	36-5/16	25-1/2	6.4	12.3	2.5	3	LC30
39.5x59.5	E	36-5/16	26-1/2	6.6	12.7	2.5	3	LC30
39.5x61.5	E	36-5/16	27-1/2	6.9	13.2	2.5	3	LC30
39.5x65.5	E	36-5/16	29-1/2	7.4	14.2	2.5	3	LC30
39.5x71.5	E	36-5/16	32-1/2	8.1	15.6	2.5	3	LC30
41.5x35.5		38-5/16	14-1/2	3.6	7.4	2.5	3	LC30
41.5x37.5		38-5/16	15-1/2	3.9	7.9	2.5	3	LC30
41.5x41.5		38-5/16	17-1/2	4.4	8.9	2.5	3	LC30
41.5x45.5		38-5/16	19-1/2	4.9	9.9	2.5	3	LC30
41.5x47.5		38-5/16	20-1/2	5.1	10.4	2.5	3	LC30
41.5x51.5		38-5/16	22-1/2	5.6	11.5	2.5	3	LC30
41.5x53.5		38-5/16	23-1/2	5.9	12.0	2.5	3	LC30
41.5x57.5	E	38-5/16	25-1/2	6.4	13.0	2.5	3	LC30
41.5x59.5	E	38-5/16	26-1/2	6.6	13.5	2.5	3	LC30
41.5x61.5	E	38-5/16	27-1/2	6.9	14.0	2.5	3	LC30
41.5x65.5	E	38-5/16	29-1/2	7.4	15.0	2.5	3	LC30
41.5x71.5	E	38-5/16	32-1/2	8.1	16.5	2.5	3	LC30

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates performance with DP Enhancement Kit installed.



DOUBLE-HUNG

DESIGN DATA

Aluminum-Clad Wood

Replacement Fixed and Transoms



FIXED UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁
		Annealed	Tempered	
41x35.5	7.7	3	3	R50
41x37.5	8.2	3	3	R50
41x41.5	9.2	3	3	R50
41x45.5	10.2	3	3	R50
41x47.5	10.7	3	3	R50
41x51.5	11.7	3	3	R50
41x53.5	12.2	3	3	R50
41x57.5	13.2	3	3	R50
41x59.5	13.7	3	3	R50
41x61.5	14.2	3	3	R50
41x65.5	15.2	3	3	R50
41x71.5	16.7	3	3	R45/R50 _{TR}
47x35.5	8.9	3	3	R50
47x37.5	9.5	3	3	R50
47x41.5	10.7	3	3	R50
47x45.5	11.9	3	3	R50
47x47.5	12.4	3	3	R50
47x51.5	13.6	3	3	R50
47x53.5	14.2	3	3	R50
47x57.5	15.4	3	3	R50
47x59.5	15.9	3	3	R45/R50 _{TR}
47x61.5	16.5	3	3	R45/R50 _{TR}
47x65.5	17.7	3	3	R40/R50 _{TR}
47x71.5	19.5	3	3	R50
53x35.5	10.2	3	3	R50
53x37.5	10.9	3	3	R50
53x41.5	12.2	3	3	R50
53x45.5	13.5	3	3	R50
53x47.5	14.2	3	3	R50
53x51.5	15.6	3	3	R50
53x53.5	16.2	3	4	R45/R50 _{TR}
53x57.5	17.6	4	4	R50
53x59.5	18.2	4	4	R50
53x61.5	18.9	4	4	R50
53x65.5	20.2	4	4	R50
53x71.5	22.2	4	4	R50
59x35.5	11.5	3	3	R50
59x37.5	12.2	3	3	R50
59x41.5	13.7	3	3	R50
59x45.5	15.2	3	3	R50
59x47.5	16.0	3	3	R45/R50 _{TR}
59x51.5	17.5	3	4	R45/R50 _{TR}
59x53.5	18.2	4	4	R50
59x57.5	19.7	4	4	R50
59x59.5	20.5	4	4	R50
59x61.5	21.2	4	4	R50
59x65.5	22.8	4	4	R50
59x71.5	25.0	4	4	R45/R50 _{TR}

FIXED TRANSOM UNITS

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ₁
		Annealed	Tempered	
23.5x14	1.2	3	3	R50
23.5x17	1.6	3	3	R50
23.5x25	2.6	3	3	R50
27.5x14	1.4	3	3	R50
27.5x17	1.9	3	3	R50
27.5x25	3.1	3	3	R50
29.5x14	1.5	3	3	R50
29.5x17	2.1	3	3	R50
29.5x25	3.4	3	3	R50
31.5x14	1.7	3	3	R50
31.5x17	2.2	3	3	R50
31.5x25	3.7	3	3	R50
35.5x14	1.9	3	3	R50
35.5x17	2.6	3	3	R50
35.5x25	4.3	3	3	R50
39.5x14	2.2	3	3	R50
39.5x17	2.9	3	3	R50
39.5x25	4.8	3	3	R50
41.5x14	2.3	3	3	R50
41.5x17	3.1	3	3	R50
41.5x25	5.1	3	3	R50

TR = Second number shown requires tempered glass.

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates performance with DP Enhancement Kit installed.

To convert areas to square meters (m²), multiply square feet by 0.0929.



DOUBLE-HUNG

DETAILED PRODUCT DESCRIPTIONS

Aluminum-Clad Wood



FRAME

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine with no visible fastener holes.
- Exterior surfaces are clad with aluminum.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94 mm).
- Jamb liner shall be high-impact polyvinyl chloride backed by continuous hard-tempered aluminum springs.
- Optional factory applied jamb extensions are available.
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.

SASH

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are clear pine with no visible fastener holes.
- Exterior surfaces are clad with aluminum, lap-jointed and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-5/8" (41 mm).
- Sash will pivot between jambs without removal.

WEATHERSTRIPPING

- Foam with 3 mm skin at head and bottom rail. Thermal-plastic elastomer bulb with slip-coating set into upper sash for tight contact at check rail.
- Secondary polyvinyl chloride leaf-type weatherstrip on bottom sash at sill.
- Jamb liner to seal against sides of sash.

GLAZING SYSTEM

- Quality float glass complying with ASTM C 1036.
- Silicone groove-glazed [obscure] dual-seal insulating glass [[annealed] [tempered]] [[Advanced] [SunDefense™] [AdvancedComfort] [NaturalSun] Low-E coated with argon].
- High altitude glazing available.

EXTERIOR

- Exterior aluminum surfaces are finished with EnduraClad® multi-stage finish system.
- Color is [Standard: [White] [Tan] [Brown] [Putty] [Feature: [Poplar White] [Hartford Green] [Black] [Brick Red] [Morning Sky Gray] [Portobello]].

INTERIOR

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen] [Bright White] [stain₃]].

HARDWARE

- Galvanized block-and-tackle balances are connected to sash with a polyester cord and concealed within the frame.
- Factory installed self-aligning surface-mounted sash lock. Two sash locks on units with frame width 33-1/4" and greater.
- Sash lift furnished for field installation. Two lifts on units with frame width 33-1/4" and greater.
- Finish is [baked enamel [Champagne] [White] [Brown]] [Bright Brass] [Satin Nickel] [Oil-Rubbed Bronze].
- Champagne locks are standard on unfinished units; White locks are standard on factory prefinished white units.

OPTIONAL PRODUCTS

Grilles

- Removable grilles
 - 3/4" Traditional removable solid wood grilles steel-pinned at joints and fitted to sash with steel clips and tacks.
 - Surfaces [unfinished, ready for site finishing] [factory primed].
 - Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [stain₃]].
 - Exterior [unfinished, ready for site finishing] [factory primed] [factory prefinished, finish color matched to exterior cladding].
- or -
- Grilles-Between-the-Glass₁
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row] [Custom- Equally Divided].
 - Interior color is [White] [Tan₂] [Brown₂] [Putty₂] [Ivory] [Brickstone] [Harvest] [Cordovan].
 - Exterior grilles match the exterior cladding color₄.
- or -
- Simulated-Divided-Light grilles [with optional spacer]
 - 7/8" Grilles permanently bonded to the interior and exterior of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row] [Custom- Equally Divided].
 - Interior grilles [unfinished, ready for site finishing] [factory prefinished White].
 - Exterior grilles match the exterior cladding color.
 - Available only on units glazed with Low-E insulated glass with argon.

Screens

- InView™ screens
 - Full-size Vinyl-coated 18/18 mesh fiberglass screen cloth complying with SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.
- or -
- Vivid View® screens
 - Full-size PVDF 21/17 mesh, minimum 78 percent light transmissive screen, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.

Hardware

- Optional factory applied limited opening device available for vent units in steel, nominal 3-3/4" opening.
- Optional window opening control device available for field installation. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

(1) Available on units glazed with Low-E insulated glass with argon, clear insulated glass and obscure insulated glass. White exterior grille color is the only option for clear Insulating Glass.

(2) Tan, Brown and Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.

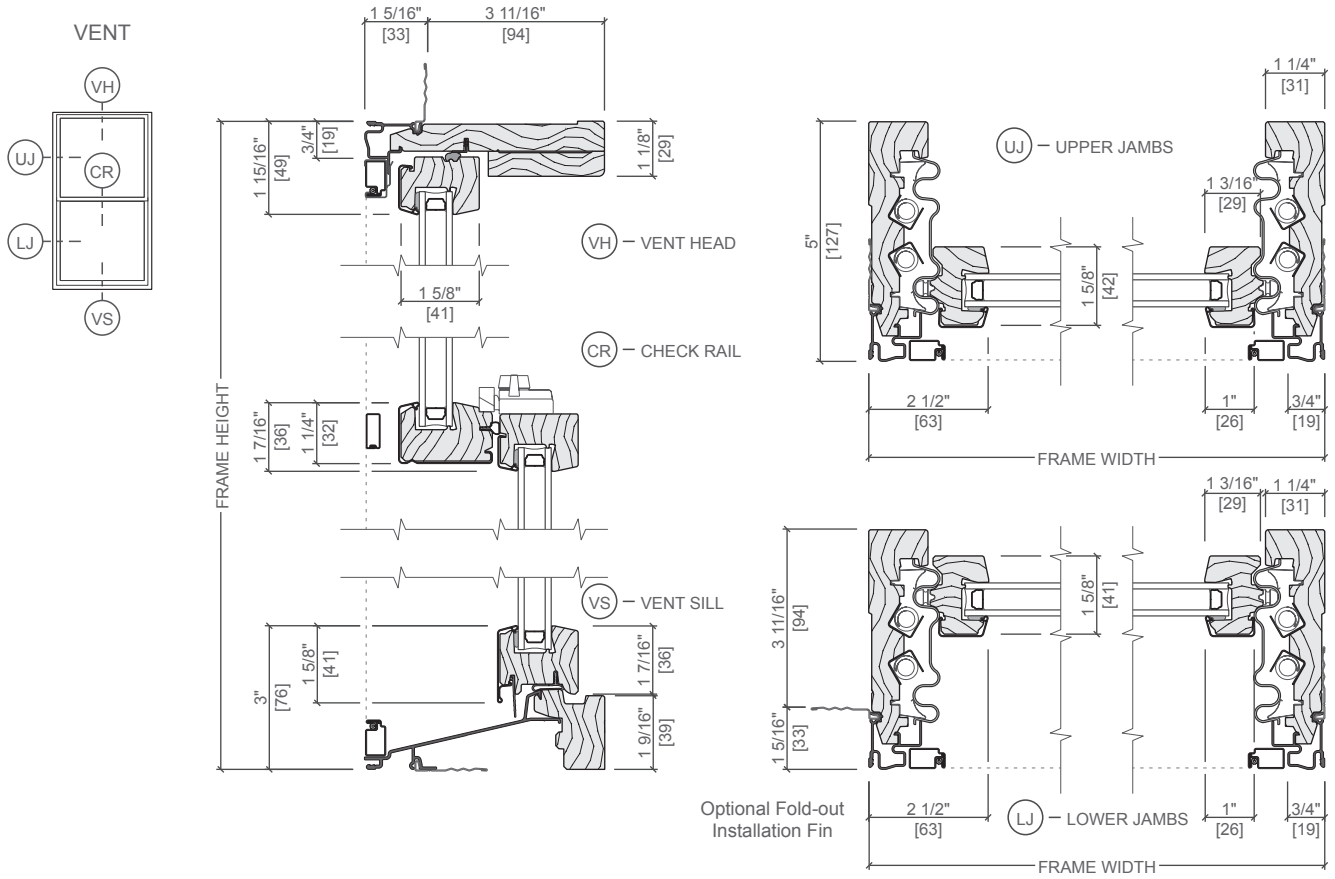
(3) Contact your local Pella sales representative for current color options.

(4) Appearance of exterior grille color will vary depending on Low-E coating on glass.



DOUBLE-HUNG

UNIT SECTIONS
Aluminum-Clad Wood



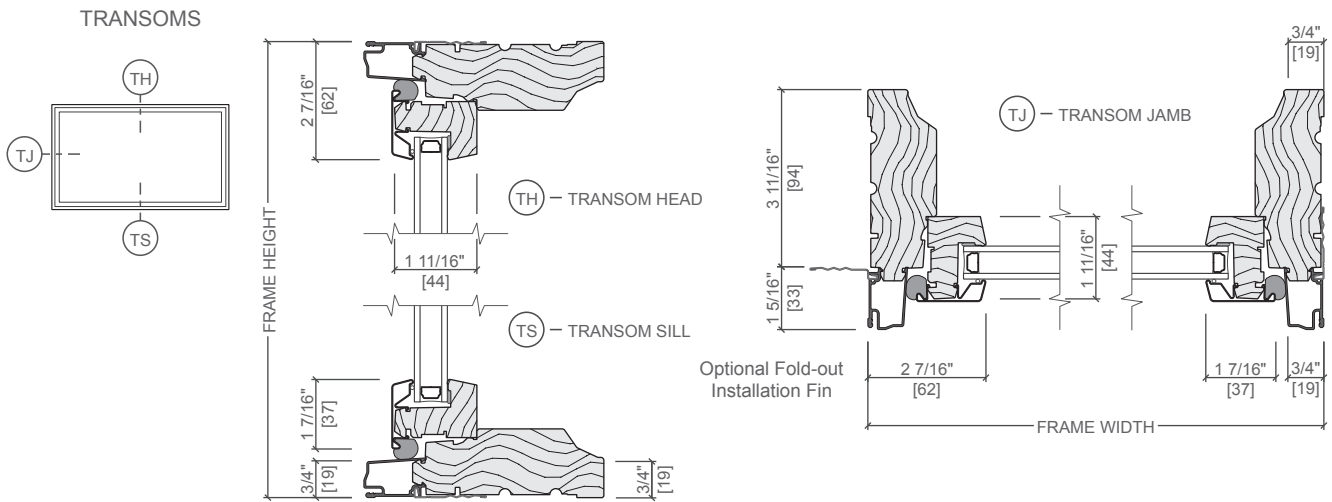
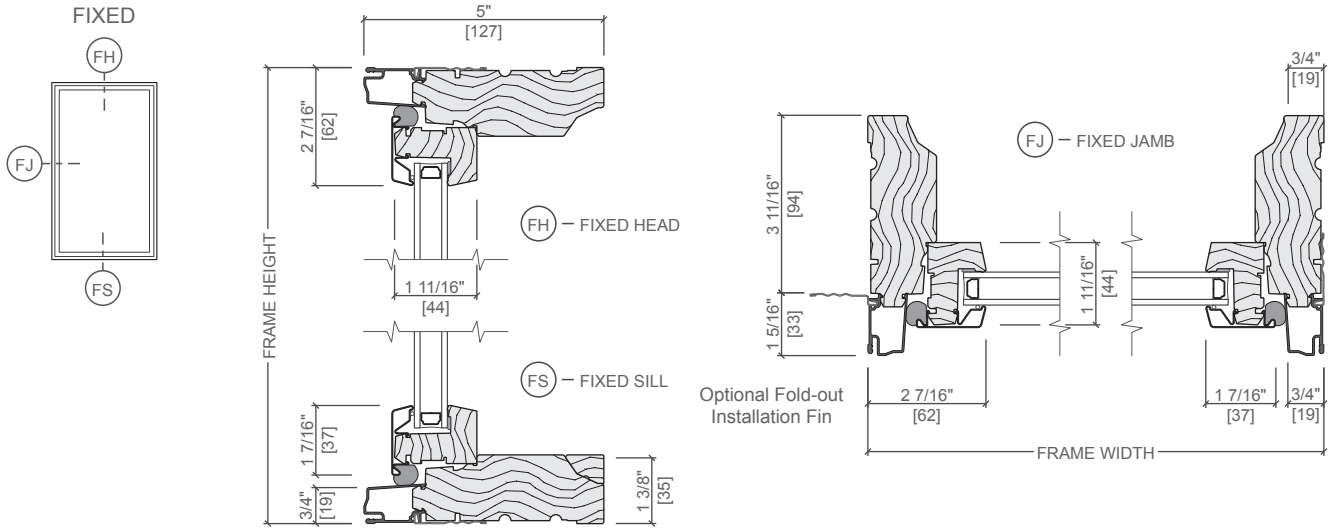
Scale 3" = 1' 0"
All dimensions are approximate.



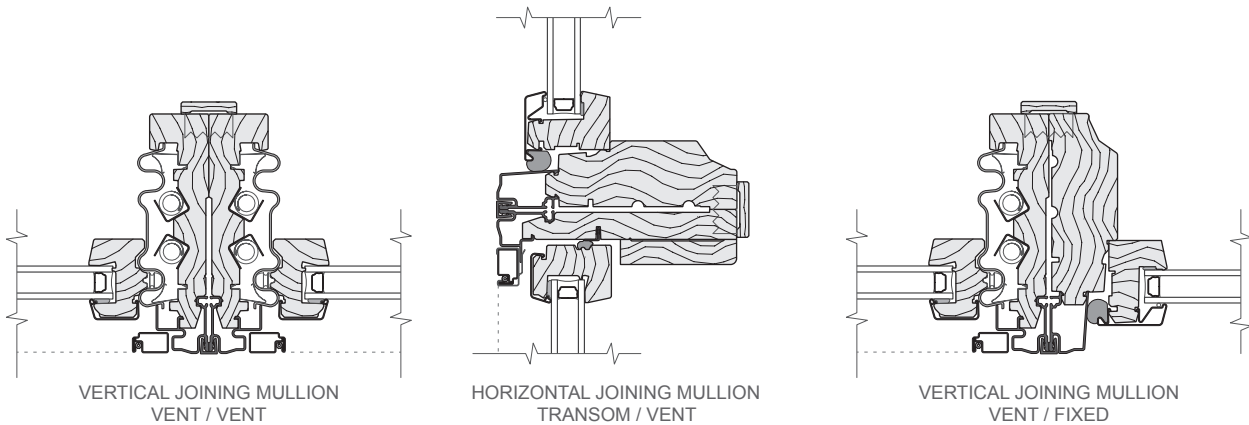
DOUBLE-HUNG

UNIT SECTIONS

Aluminum-Clad Wood



TYPICAL JOINING MULLIONS



Scale 3" = 1' 0"

All dimensions are approximate.

See Installation and Performance at www.PellaADM.com for mullion limitations and reinforcing requirements.