

# Thermal Performance Data

Visions 3500 Double Hung Windows (9110)  
(J-channel)



US Qualification Criteria	Climate Zone	U-Value	SHGC	
<p>As of January 2016</p>	Northern	$\leq 0.27$	Any	Prescriptive
		$= 0.28$	$\geq 0.32$	Equivalent Energy Performance
		$= 0.29$	$\geq 0.37$	
		$= 0.30$	$\geq 0.42$	
	North-Central	$\leq 0.30$	$\leq 0.40$	
	South-Central	$\leq 0.30$	$\leq 0.25$	
Southern	$\leq 0.40$	$\leq 0.25$		

Canadian Qualification Criteria	Climate Zone	U-Value	or	Energy Rating
<p>As of February 2015</p>	Zone 1	$\leq 1.60$		$\geq 25$
	Zone 2	$\leq 1.40$		$\geq 29$
	Zone 3	$\leq 1.20$		$\geq 34$
	Air Leakage $\leq 0.3$ cfm/ft <sup>2</sup>			

## U-Value

A measurement of how much energy a material conducts. The lower the U-Value, the greater the insulating effect.

## Solar Heat Gain Coefficient (SHGC)

Measures how well a window or door prevents heat from passing through it. The lower a window or door's SHGC, the less heat it allows to pass through it.

## Visible Light Transmittance

The amount of light in the visible portion of the spectrum that passes through a glazing material.

## Condensation Resistance Rating

Measures how well a window resists the formation of condensation on the inside surface. The higher the number the better resistance to condensation.

## Energy Rating

A value demonstrating the balance between U-Value, SHGC and air leakage. The higher the number, the more efficient the product.

## R-Value

A measurement of how much a material resists heat transfer. A higher R-Value means a greater insulating effect and a lower rate of heat flow out of the home. While **R-value** measures resistance to heat transfer, **U-value** measures the rate of heat transfer. In simple terms, **U-value** is the mathematical reciprocal of **R-value**; that is,  $U = 1/R$  and  $R = 1/U$ .

<sup>a</sup> Total Unit calculations are derived from computer simulations that are then verified by 3rd party testing in accordance with NFRC 100, NFRC 200, and NFRC 500.

<sup>b</sup> Published values reflect 3mm/3mm glass lite thicknesses.

ENERGY PERFORMANCE DATA

Visions 3500 Double Hung Windows (9110)



US ENERGY STAR V 6.0

CANADIAN ENERGY PERFORMANCE DATA



CANADA ENERGY STAR v 4.1

Grille Option	Glazing thickness	³NFRC Total Unit Calculations ⁴Glazing Option	CPD #	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	US ENERGY STAR V 6.0				U-Value (metric)	Maximum Air Leakage Ls/m²	Air Infiltration/Exfiltration Average	Energy Rating	CANADA ENERGY STAR v 4.1			
								N	NC	SC	S					1	2	3	
No GIA or SDL	3/4"	Clear Insul	WEA-N-307-00429-00001	0.45	0.59	0.62	45					2.56	0.6	0.23	18				
	3/4"	Insul Low-E	WEA-N-307-00559-00001	0.32	0.29	0.53	54					1.82	0.6	0.23	16				
	3/4"	Insul Low E w/Argon	WEA-N-307-00589-00001	0.28	0.29	0.53	58		Y			1.59	0.6	0.23	21	Y			
	3/4"	Passive Solar	WEA-N-307-00438-00001	0.32	0.52	0.60	55					1.82	0.6	0.23	30	Y	Y		
	3/4"	Passive Solar w/Argon	WEA-N-307-00500-00001	0.29	0.52	0.60	59	Y				1.65	0.6	0.23	33	Y	Y		
	3/4"	Passive Solar Extreme	WEA-N-307-00441-00001	0.27	0.47	0.58	43	Y				1.53	0.6	0.23	33	Y	Y		
	3/4"	Passive Solar Extreme w/Argon	WEA-N-307-00503-00001	0.25	0.47	0.58	46	Y				1.42	0.6	0.23	36	Y	Y	Y	
	3/4"	Zo-e-shield 5	WEA-N-307-00560-00001	0.32	0.22	0.47	54				Y		1.82	0.6	0.23	12			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-307-00590-00001	0.28	0.21	0.47	58		Y	Y	Y		1.59	0.6	0.23	17	Y		
	3/4"	Zo-e-shield 5 Extreme	WEA-N-307-00450-00001	0.26	0.21	0.48	44	Y	Y	Y	Y		1.48	0.6	0.23	19	Y		
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-307-00512-00001	0.24	0.21	0.48	47	Y	Y	Y	Y		1.36	0.6	0.23	22	Y	Y	
	3/4"	Zo-e-shield 6	WEA-N-307-00473-00001	0.31	0.21	0.48	58				Y		1.76	0.6	0.23	13			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-307-00535-00001	0.28	0.21	0.48	61		Y	Y	Y		1.59	0.6	0.23	17	Y		
	3/4"	Zo-e SafeGuard Certified	WEA-N-307-00479-00001	0.31	0.21	0.48	59				Y		1.76	0.6	0.23	13			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-307-00541-00001	0.28	0.21	0.48	62		Y	Y	Y		1.59	0.6	0.23	17	Y		
	1"	Zo-e-shield 7	WEA-N-307-00483-00001	0.25	0.19	0.39	66	Y	Y	Y	Y		1.42	0.6	0.23	19	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-307-00545-00001	0.21	0.19	0.39	67	Y	Y	Y	Y		1.19	0.6	0.23	24	Y	Y	Y
	3/4"	Insul Low-E 240	WEA-N-307-00444-00001	0.32	0.20	0.30	55				Y		1.82	0.6	0.23	11			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-307-00506-00001	0.29	0.19	0.30	59		Y	Y	Y		1.65	0.6	0.23	14			
	3/4"	Insul Low-E 340	WEA-N-307-00447-00001	0.31	0.14	0.29	56				Y		1.76	0.6	0.23	9			
3/4"	Insul Low-E 340 w/Argon	WEA-N-307-00509-00001	0.28	0.14	0.29	60		Y	Y	Y		1.59	0.6	0.23	13				
3/4"	Bronze Low E	WEA-N-307-00432-00011	0.32	0.30	0.40	56						1.82	0.6	0.23	17				
3/4"	Bronze Low E w/Argon	WEA-N-307-00494-00011	0.28	0.30	0.40	59		Y				1.59	0.6	0.23	22	Y			
Less Than 1" GIA or SDL	3/4"	Clear Insul	WEA-N-307-00429-00002	0.45	0.53	0.55	45					2.56	0.6	0.23	14				
	3/4"	Insul Low-E	WEA-N-307-00559-00002	0.32	0.27	0.47	54					1.82	0.6	0.23	15				
	3/4"	Insul Low E w/Argon	WEA-N-307-00589-00002	0.28	0.26	0.47	58		Y			1.59	0.6	0.23	20	Y			
	3/4"	Passive Solar	WEA-N-307-00438-00002	0.32	0.46	0.53	55					1.82	0.6	0.23	26	Y			
	3/4"	Passive Solar w/Argon	WEA-N-307-00500-00002	0.29	0.47	0.53	59	Y				1.65	0.6	0.23	31	Y	Y		
	3/4"	Passive Solar Extreme	WEA-N-307-00441-00002	0.27	0.42	0.52	43	Y				1.53	0.6	0.23	30	Y	Y		
	3/4"	Passive Solar Extreme w/Argon	WEA-N-307-00503-00002	0.25	0.42	0.52	46	Y				1.42	0.6	0.23	33	Y	Y		
	3/4"	Zo-e-shield 5	WEA-N-307-00560-00002	0.32	0.20	0.41	54				Y		1.82	0.6	0.23	11			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-307-00590-00002	0.28	0.19	0.41	58		Y	Y	Y		1.59	0.6	0.23	16			
	3/4"	Zo-e-shield 5 Extreme	WEA-N-307-00450-00002	0.26	0.19	0.42	44	Y	Y	Y	Y		1.48	0.6	0.23	18	Y		
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-307-00512-00002	0.24	0.19	0.42	47	Y	Y	Y	Y		1.36	0.6	0.23	21	Y	Y	
	3/4"	Zo-e-shield 6	WEA-N-307-00473-00002	0.31	0.19	0.43	58				Y		1.76	0.6	0.23	12			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-307-00535-00002	0.28	0.19	0.43	61		Y	Y	Y		1.59	0.6	0.23	16			
	3/4"	Zo-e SafeGuard Certified	WEA-N-307-00479-00002	0.31	0.19	0.42	59				Y		1.76	0.6	0.23	12			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-307-00541-00002	0.28	0.19	0.42	62		Y	Y	Y		1.59	0.6	0.23	16			
	1"	Zo-e-shield 7	WEA-N-307-00484-00001	0.25	0.18	0.35	66	Y	Y	Y	Y		1.42	0.6	0.23	19	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-307-00546-00001	0.22	0.17	0.35	67	Y	Y	Y	Y		1.25	0.6	0.23	22	Y	Y	
	3/4"	Insul Low-E 240	WEA-N-307-00444-00002	0.32	0.18	0.27	55				Y		1.82	0.6	0.23	10			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-307-00506-00002	0.29	0.18	0.27	59		Y	Y	Y		1.65	0.6	0.23	14			
	3/4"	Insul Low-E 340	WEA-N-307-00447-00002	0.31	0.13	0.26	56				Y		1.76	0.6	0.23	9			
3/4"	Insul Low-E 340 w/Argon	WEA-N-307-00509-00002	0.28	0.13	0.26	60		Y	Y	Y		1.59	0.6	0.23	12				
3/4"	Bronze Low E	WEA-N-307-00432-00012	0.32	0.27	0.36	56						1.82	0.6	0.23	15				
3/4"	Bronze Low E w/Argon	WEA-N-307-00494-00012	0.28	0.27	0.36	59		Y				1.59	0.6	0.23	20	Y			
1" Or Over GIA or SDL	3/4"	Clear Insul	WEA-N-307-00429-00003	0.45	0.47	0.49	45					2.56	0.6	0.23	11				
	3/4"	Insul Low-E	WEA-N-307-00559-00003	0.32	0.24	0.41	54				Y		1.82	0.6	0.23	14			
	3/4"	Insul Low E w/Argon	WEA-N-307-00589-00003	0.28	0.24	0.41	58		Y	Y	Y		1.59	0.6	0.23	19	Y		
	3/4"	Passive Solar	WEA-N-307-00438-00003	0.32	0.41	0.47	55					1.82	0.6	0.23	23				
	3/4"	Passive Solar w/Argon	WEA-N-307-00500-00003	0.29	0.41	0.47	59	Y				1.65	0.6	0.23	27	Y			
	3/4"	Passive Solar Extreme	WEA-N-307-00441-00003	0.27	0.38	0.46	43	Y	Y			1.53	0.6	0.23	28	Y			
	3/4"	Passive Solar Extreme w/Argon	WEA-N-307-00503-00003	0.25	0.38	0.46	46	Y	Y			1.42	0.6	0.23	30	Y	Y		
	3/4"	Zo-e-shield 5	WEA-N-307-00560-00003	0.32	0.18	0.37	54				Y		1.82	0.6	0.23	10			
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-307-00590-00003	0.28	0.17	0.37	58		Y	Y	Y		1.59	0.6	0.23	15			
	3/4"	Zo-e-shield 5 Extreme	WEA-N-307-00450-00003	0.26	0.17	0.37	44	Y	Y	Y	Y		1.48	0.6	0.23	17	Y		
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-307-00512-00003	0.24	0.17	0.37	47	Y	Y	Y	Y		1.36	0.6	0.23	20	Y		
	3/4"	Zo-e-shield 6	WEA-N-307-00473-00003	0.31	0.17	0.38	58				Y		1.76	0.6	0.23	11			
	3/4"	Zo-e-shield 6 w/ Argon	WEA-N-307-00535-00003	0.28	0.17	0.38	61		Y	Y	Y		1.59	0.6	0.23	15			
	3/4"	Zo-e SafeGuard Certified	WEA-N-307-00479-00003	0.31	0.17	0.37	59				Y		1.76	0.6	0.23	11			
	3/4"	Zo-e SafeGuard Certified w/ Argon	WEA-N-307-00541-00003	0.28	0.17	0.37	62		Y	Y	Y		1.59	0.6	0.23	15			
	1"	Zo-e-shield 7	WEA-N-307-00484-00002	0.25	0.16	0.31	66	Y	Y	Y	Y		1.42	0.6	0.23	18	Y		
	1"	Zo-e-shield 7 w/ Argon	WEA-N-307-00546-00002	0.22	0.16	0.31	67	Y	Y	Y	Y		1.25	0.6	0.23	21	Y	Y	
	3/4"	Insul Low-E 240	WEA-N-307-00444-00003	0.32	0.16	0.24	55				Y		1.82	0.6	0.23	9			
	3/4"	Insul Low-E 240 w/Argon	WEA-N-307-00506-00003	0.29	0.16	0.24	59		Y	Y	Y		1.65	0.6	0.23	13			
	3/4"	Insul Low-E 340	WEA-N-307-00447-00003	0.31	0.12	0.23	56				Y		1.76	0.6	0.23	8			
3/4"	Insul Low-E 340 w/Argon	WEA-N-307-00509-00003	0.28	0.12	0.23	60		Y	Y	Y		1.59	0.6	0.23	12				
3/4"	Bronze Low E	WEA-N-307-00432-00013	0.32	0.24	0.31	56													