



# Thermal Performance Data

Premium Direct-Set Windows (8306)

**WEATHER SHIELD.**

**WINDOWS & DOORS**

US Qualification Criteria	Climate Zone	U-Value	SHGC		
 <p>Energy Star Version 7.0 Starting October 2023</p>	Northern	$\leq 0.22$	$\geq 0.17$	Prescriptive	
			$= 0.23$	$\geq 0.35$	Equivalent Energy Performance
			$= 0.24$	$\geq 0.40$	
			$= 0.25$		
			$= 0.26$		
	North-Central	$\leq 0.25$	$\leq 0.40$		
South-Central	$\leq 0.28$	$\leq 0.23$			
Southern	$\leq 0.32$	$\leq 0.23$			

Canadian Qualification Criteria	U-Value	or	Energy Rating
 <p>Energy Star Version 5.0 starting January 2020</p>	$\leq 1.22$		$\geq 34$
	Air Leakage $\leq 1.5$ L/s/m <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 glass lite thicknesses.

ENERGY PERFORMANCE DATA											CANADIAN ENERGY PERFORMANCE DATA					
Premium Direct-Set Windows (8306)											CANADIAN ENERGY PERFORMANCE DATA					
Grille Option	Glazing thickness	NFRC Total Unit Calculations Glazing Option	CPD #	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	US ENERGY STAR V 7.0				U-Value (metric)	Maximum Air Leakage L/s/m2	Air Infiltration/Exfiltration Average	Energy Rating	CANADA ENERGY STAR v5.0
								N	NC	SC	S					
No GIA or SDL	3/4"	Clear Insul	WEA-N-281-01594-00001	0.47	0.67	0.71	42					2.67	1.5	0.05	20	
	3/4"	Insul Low-E	WEA-N-281-01595-00001	0.32	0.36	0.62	53					1.82	1.5	0.05	21	
	3/4"	Insul Low E w/Argon	WEA-N-281-01603-00001	0.28	0.36	0.62	57					1.59	1.5	0.05	26	
	3/4"	Passive Solar	WEA-N-281-01598-00001	0.33	0.59	0.68	53					1.87	1.5	0.05	33	
	3/4"	Passive Solar w/Argon	WEA-N-281-01606-00001	0.29	0.59	0.68	57					1.65	1.5	0.05	38	Y
	3/4"	Passive Solar Extreme	WEA-N-281-01599-00001	0.27	0.54	0.67	41					1.53	1.5	0.05	38	Y
	3/4"	Passive Solar Extreme w/Argon	WEA-N-281-01607-00001	0.24	0.54	0.67	45	Y				1.36	1.5	0.05	41	Y
	3/4"	Zo-e-shield 5	WEA-N-281-01596-00001	0.31	0.24	0.56	54					1.76	1.5	0.05	15	
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-281-01604-00001	0.27	0.24	0.56	57					1.53	1.5	0.05	20	
	3/4"	Zo-e-shield 5 Extreme	WEA-N-281-01597-00001	0.26	0.23	0.54	42			Y	Y	1.48	1.5	0.05	21	
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-281-01605-00001	0.23	0.23	0.54	46	Y	Y	Y	1.31	1.5	0.05	24		
	1"	Zo-e-shield 6	WEA-N-281-01676-00001	0.31	0.24	0.55	55					1.76	1.5	0.05	15	
	1"	Zo-e-shield 6 w/ Argon	WEA-N-281-01684-00001	0.27	0.23	0.55	58			Y	Y	1.53	1.5	0.05	20	
	1"	Zo-e SafeGuard Certified	WEA-N-281-01681-00001	0.31	0.23	0.54	55				Y	1.76	1.5	0.05	15	
	1"	Zo-e SafeGuard Certified w/ Argon	WEA-N-281-01689-00001	0.27	0.23	0.54	58			Y	Y	1.53	1.5	0.05	20	
	3/4"	Insul Low-E 240	WEA-N-281-01600-00001	0.32	0.22	0.34	53				Y	1.82	1.5	0.05	13	
	3/4"	Insul Low-E 240 w/Argon	WEA-N-281-01608-00001	0.29	0.22	0.34	56				Y	1.65	1.5	0.05	16	
	3/4"	Insul Low-E 340	WEA-N-281-01601-00001	0.32	0.16	0.33	54				Y	1.82	1.5	0.05	9	
	3/4"	Insul Low-E 340 w/Argon	WEA-N-281-01609-00001	0.28	0.16	0.33	57			Y	Y	1.59	1.5	0.05	14	
	3/4"	Bronze Low E	WEA-N-281-01595-00011	0.32	0.34	0.46	53					1.82	1.5	0.05	20	
3/4"	Bronze Low E w/Argon	WEA-N-281-01603-00011	0.28	0.34	0.46	57					1.59	1.5	0.05	25		
Less Than 1" GIA or SDL	3/4"	Clear Insul	WEA-N-281-01594-00002	0.47	0.61	0.64	42					2.67	1.5	0.05	17	
	3/4"	Insul Low-E	WEA-N-281-01595-00002	0.32	0.33	0.56	53					1.82	1.5	0.05	19	
	3/4"	Insul Low E w/Argon	WEA-N-281-01603-00002	0.28	0.32	0.56	57					1.59	1.5	0.05	24	
	3/4"	Passive Solar	WEA-N-281-01598-00002	0.33	0.53	0.61	53					1.87	1.5	0.05	30	
	3/4"	Passive Solar w/Argon	WEA-N-281-01606-00002	0.29	0.53	0.61	57					1.65	1.5	0.05	34	Y
	3/4"	Passive Solar Extreme	WEA-N-281-01599-00002	0.27	0.48	0.60	41					1.53	1.5	0.05	34	Y
	3/4"	Passive Solar Extreme w/Argon	WEA-N-281-01607-00002	0.24	0.49	0.60	45	Y				1.36	1.5	0.05	38	Y
	3/4"	Zo-e-shield 5	WEA-N-281-01596-00002	0.31	0.22	0.50	54				Y	1.76	1.5	0.05	14	
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-281-01604-00002	0.27	0.21	0.50	57			Y	Y	1.53	1.5	0.05	19	
	3/4"	Zo-e-shield 5 Extreme	WEA-N-281-01597-00002	0.26	0.21	0.49	42			Y	Y	1.48	1.5	0.05	20	
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-281-01605-00002	0.23	0.21	0.49	46	Y	Y	Y	1.31	1.5	0.05	23		
	1"	Zo-e-shield 6	WEA-N-281-01676-00002	0.31	0.22	0.49	55				Y	1.76	1.5	0.05	14	
	1"	Zo-e-shield 6 w/ Argon	WEA-N-281-01684-00002	0.27	0.21	0.49	58			Y	Y	1.53	1.5	0.05	19	
	1"	Zo-e SafeGuard Certified	WEA-N-281-01681-00002	0.31	0.21	0.49	55				Y	1.76	1.5	0.05	13	
	1"	Zo-e SafeGuard Certified w/ Argon	WEA-N-281-01689-00002	0.27	0.21	0.49	58			Y	Y	1.53	1.5	0.05	19	
	3/4"	Insul Low-E 240	WEA-N-281-01600-00002	0.32	0.20	0.31	53				Y	1.82	1.5	0.05	12	
	3/4"	Insul Low-E 240 w/Argon	WEA-N-281-01608-00002	0.29	0.20	0.31	56				Y	1.65	1.5	0.05	15	
	3/4"	Insul Low-E 340	WEA-N-281-01601-00002	0.32	0.15	0.30	54				Y	1.82	1.5	0.05	9	
	3/4"	Insul Low-E 340 w/Argon	WEA-N-281-01609-00002	0.28	0.14	0.30	57			Y	Y	1.59	1.5	0.05	13	
	3/4"	Bronze Low E	WEA-N-281-01595-00012	0.32	0.31	0.42	53					1.82	1.5	0.05	18	
3/4"	Bronze Low E w/Argon	WEA-N-281-01603-00012	0.28	0.31	0.42	57					1.59	1.5	0.05	23		
1" Or Over GIA or SDL	3/4"	Clear Insul	WEA-N-281-01594-00003	0.47	0.54	0.57	42					2.67	1.5	0.05	13	
	3/4"	Insul Low-E	WEA-N-281-01595-00003	0.32	0.29	0.49	53					1.82	1.5	0.05	17	
	3/4"	Insul Low E w/Argon	WEA-N-281-01603-00003	0.28	0.29	0.49	57					1.59	1.5	0.05	22	
	3/4"	Passive Solar	WEA-N-281-01598-00003	0.33	0.48	0.54	53					1.87	1.5	0.05	27	
	3/4"	Passive Solar w/Argon	WEA-N-281-01606-00003	0.29	0.48	0.54	57					1.65	1.5	0.05	31	
	3/4"	Passive Solar Extreme	WEA-N-281-01599-00003	0.27	0.43	0.53	41					1.53	1.5	0.05	31	
	3/4"	Passive Solar Extreme w/Argon	WEA-N-281-01607-00003	0.24	0.44	0.53	45	Y				1.36	1.5	0.05	36	Y
	3/4"	Zo-e-shield 5	WEA-N-281-01596-00003	0.31	0.20	0.45	54				Y	1.76	1.5	0.05	13	
	3/4"	Zo-e-shield 5 w/ Argon	WEA-N-281-01604-00003	0.27	0.19	0.45	57			Y	Y	1.53	1.5	0.05	17	
	3/4"	Zo-e-shield 5 Extreme	WEA-N-281-01597-00003	0.26	0.19	0.44	42			Y	Y	1.48	1.5	0.05	18	
	3/4"	Zo-e-shield 5 Extreme w/ Argon	WEA-N-281-01605-00003	0.23	0.19	0.44	46	Y	Y	Y	1.31	1.5	0.05	22		
	1"	Zo-e-shield 6	WEA-N-281-01676-00003	0.31	0.20	0.44	55				Y	1.76	1.5	0.05	13	
	1"	Zo-e-shield 6 w/ Argon	WEA-N-281-01684-00003	0.27	0.19	0.44	58			Y	Y	1.53	1.5	0.05	17	
	1"	Zo-e SafeGuard Certified	WEA-N-281-01681-00003	0.31	0.19	0.43	55				Y	1.76	1.5	0.05	12	
	1"	Zo-e SafeGuard Certified w/ Argon	WEA-N-281-01689-00003	0.27	0.19	0.43	58			Y	Y	1.53	1.5	0.05	17	
	3/4"	Insul Low-E 240	WEA-N-281-01600-00003	0.32	0.19	0.28	53				Y	1.82	1.5	0.05	11	
	3/4"	Insul Low-E 240 w/Argon	WEA-N-281-01608-00003	0.29	0.18	0.28	56				Y	1.65	1.5	0.05	14	
	3/4"	Insul Low-E 340	WEA-N-281-01601-00003	0.32	0.13	0.27	54				Y	1.82	1.5	0.05	8	
	3/4"	Insul Low-E 340 w/Argon	WEA-N-281-01609-00003	0.28	0.13	0.27	57			Y	Y	1.59	1.5	0.05	13	
	3/4"	Bronze Low E	WEA-N-281-01595-00013	0.32	0.28	0.37	53					1.82	1.5	0.05	16	
3/4"	Bronze Low E w/Argon	WEA-N-281-01603-00013	0.28	0.28	0.37	57					1.59	1.5	0.05	21		

ENERGY PERFORMANCE DATA											CANADIAN ENERGY PERFORMANCE DATA					
Premium Direct-Set Windows (8306)											CANADA ENERGY STAR v5.0					
Grille Option	Glazing thickness	NFRC Total Unit Calculations Glazing Option	CPD #	U-Value	Solar Heat Gain Coefficient	Visible Light Transmittance	Condensation Resistance Rating	US ENERGY STAR V 7.0				U-Value (metric)	Maximum Air Leakage L/s/m2	Air Infiltration/Exfiltration Average	Energy Rating	
								N	NC	SC	S					
No GIA or SDL	1"	Zo-e-shield 7	WEA-N-281-01610-00001	0.24	0.22	0.44	64		Y	Y	Y	Y	1.36	1.5	0.05	23
	1"	Zo-e-shield 7 w/ Argon	WEA-N-281-01614-00001	0.20	0.22	0.44	67	Y	Y	Y	Y	1.14	1.5	0.05	28	Y
	1-3/8"	ES Zo-e-shield 7	WEA-N-281-01862-00001	0.19	0.22	0.44	70	Y	Y	Y	Y	1.08	1.5	0.05	29	Y
	1-3/8"	ES Zo-e-shield 7 w/ Argon	WEA-N-281-01869-00001	0.16	0.21	0.44	73	Y	Y	Y	Y	0.91	1.5	0.05	32	Y
	1-3/8"	ES Triple Insul Low-E	WEA-N-281-01856-00001	0.24	0.33	0.57	64		Y			1.36	1.5	0.05	29	
	1-3/8"	ES Triple Insul Low-E w/ Argon	WEA-N-281-01863-00001	0.22	0.33	0.57	66	Y	Y			1.25	1.5	0.05	32	
	1-3/8"	ES Triple Insul LE 272/CL/LE180	WEA-N-281-01858-00001	0.19	0.32	0.54	69	Y	Y			1.08	1.5	0.05	35	Y
	1-3/8"	ES Triple Insul LE 272/CL/LE180 w/Argon	WEA-N-281-01865-00001	0.17	0.32	0.54	72	Y	Y			0.97	1.5	0.05	37	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89	WEA-N-281-01861-00001	0.20	0.22	0.50	52	Y	Y	Y	Y	1.14	1.5	0.05	28	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89 w/Argon	WEA-N-281-01868-00001	0.18	0.21	0.50	54	Y	Y	Y	Y	1.02	1.5	0.05	30	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180	WEA-N-281-01860-00001	0.19	0.21	0.49	70	Y	Y	Y	Y	1.08	1.5	0.05	28	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180 w/Argon	WEA-N-281-01867-00001	0.16	0.21	0.49	73	Y	Y	Y	Y	0.91	1.5	0.05	32	Y
Less Than 1" GIA or SDL	1"	Zo-e-shield 7	WEA-N-281-01611-00001	0.25	0.20	0.40	55		Y	Y	Y	Y	1.42	1.5	0.05	20
	1"	Zo-e-shield 7 w/ Argon	WEA-N-281-01615-00001	0.21	0.20	0.40	53	Y	Y	Y	Y	1.19	1.5	0.05	25	Y
	1-3/8"	ES Zo-e-shield 7	WEA-N-281-01862-00002	0.19	0.20	0.40	70	Y	Y	Y	Y	1.08	1.5	0.05	28	Y
	1-3/8"	ES Zo-e-shield 7 w/ Argon	WEA-N-281-01869-00002	0.16	0.20	0.40	73	Y	Y	Y	Y	0.91	1.5	0.05	32	Y
	1-3/8"	ES Triple Insul Low-E	WEA-N-281-01856-00002	0.24	0.30	0.51	64		Y			1.36	1.5	0.05	27	
	1-3/8"	ES Triple Insul Low-E w/ Argon	WEA-N-281-01863-00002	0.22	0.30	0.51	66	Y	Y			1.25	1.5	0.05	30	
	1-3/8"	ES Triple Insul LE 272/CL/LE180	WEA-N-281-01858-00002	0.19	0.29	0.49	69	Y	Y			1.08	1.5	0.05	33	Y
	1-3/8"	ES Triple Insul LE 272/CL/LE180 w/Argon	WEA-N-281-01865-00002	0.17	0.29	0.49	72	Y	Y			0.97	1.5	0.05	35	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89	WEA-N-281-01861-00002	0.20	0.20	0.45	52	Y	Y	Y	Y	1.14	1.5	0.05	26	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89 w/Argon	WEA-N-281-01868-00002	0.18	0.20	0.45	54	Y	Y	Y	Y	1.02	1.5	0.05	29	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180	WEA-N-281-01860-00002	0.19	0.20	0.44	70	Y	Y	Y	Y	1.08	1.5	0.05	28	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180 w/Argon	WEA-N-281-01867-00002	0.16	0.19	0.44	73	Y	Y	Y	Y	0.91	1.5	0.05	31	Y
1" Or Over GIA or SDL	1"	Zo-e-shield 7	WEA-N-281-01611-00002	0.25	0.18	0.36	55		Y	Y	Y	Y	1.42	1.5	0.05	19
	1"	Zo-e-shield 7 w/ Argon	WEA-N-281-01615-00002	0.21	0.18	0.36	53	Y	Y	Y	Y	1.19	1.5	0.05	24	Y
	1-3/8"	ES Zo-e-shield 7	WEA-N-281-01862-00003	0.19	0.18	0.36	70	Y	Y	Y	Y	1.08	1.5	0.05	27	Y
	1-3/8"	ES Zo-e-shield 7 w/ Argon	WEA-N-281-01869-00003	0.16	0.18	0.36	73	Y	Y	Y	Y	0.91	1.5	0.05	30	Y
	1-3/8"	ES Triple Insul Low-E	WEA-N-281-01856-00003	0.24	0.27	0.45	64		Y			1.36	1.5	0.05	26	
	1-3/8"	ES Triple Insul Low-E w/ Argon	WEA-N-281-01863-00003	0.22	0.27	0.45	66	Y	Y			1.25	1.5	0.05	28	
	1-3/8"	ES Triple Insul LE 272/CL/LE180	WEA-N-281-01858-00003	0.19	0.26	0.43	69	Y	Y			1.08	1.5	0.05	31	Y
	1-3/8"	ES Triple Insul LE 272/CL/LE180 w/Argon	WEA-N-281-01865-00003	0.17	0.26	0.43	72	Y	Y			0.97	1.5	0.05	34	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89	WEA-N-281-01861-00003	0.20	0.18	0.40	52	Y	Y	Y	Y	1.14	1.5	0.05	25	Y
	1-3/8"	ES Triple Insul LE 366/CL/LEi89 w/Argon	WEA-N-281-01868-00003	0.18	0.18	0.40	54	Y	Y	Y	Y	1.02	1.5	0.05	28	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180	WEA-N-281-01860-00003	0.19	0.18	0.39	70	Y	Y	Y	Y	1.08	1.5	0.05	27	Y
	1-3/8"	ES Triple Insul LE 366/CL/LE180 w/Argon	WEA-N-281-01867-00003	0.16	0.18	0.39	73	Y	Y	Y	Y	0.91	1.5	0.05	30	Y