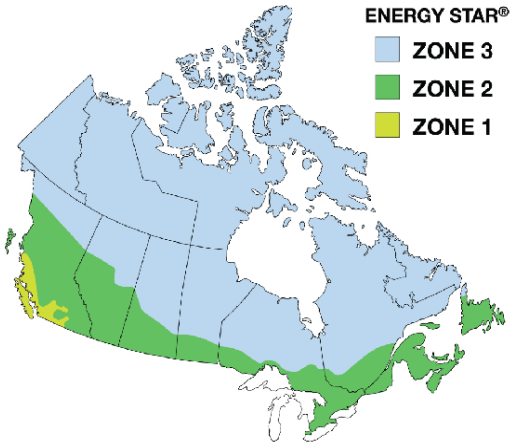


Total Window Performance

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

Note: Information presented is based on 3mm glazing. Number may vary when other glass thicknesses and tinted glazings are used. Please consult your sales representative for more details. Data for grids < 25mm are based on grilles between glass. Data for grids ≥ 25mm are based on SDLs with shadow bars between glass. U-Factor¹: Btu/h-ft²·F (imperial) U-Factor²: W/m²·K (metric).



FEBRUARY 2015 - QUALIFYING CRITERIA							
WINDOWS							
Zone	Heating Degree-Day Range	COMPLIANCE PATHS					
		Energy Rating (ER)	Max Air Leakage	or	U-Factor		Max Air Leakage
		Minimum ER (Dimensionless) Maximum U-Factor 2.00 W/m ² ·K (0.35 Btu/h·ft ² ·F)			Maximum U-Factor W/m ² ·K (0.35 Btu/h·ft ² ·F)	Minimum ER (Unitless)	
1	< 3500	25	1.5	or	1.60 (0.28)	16	1.5
2	≥3500 to < 6000	29	1.5	or	1.40 (0.25)	20	1.5
3	≥6000	34	1.5	or	1.20 (0.21)	24	1.5

For more information visit www.nrcan.gc.ca

Dual Glazed Low E		Dual Glazed 3MM																	
		Low E 180 Argon						Low E 272 Argon						Low E 366 Argon					
TYPE	GRILLES	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015
Awning ES7000	Without	0.27	1.53	0.43	0.52	31	2	0.26	1.48	0.28	0.48	24	1	0.25	1.42	0.19	0.43	20	1
	With < 25 mm	0.27	1.53	0.39	0.47	29	2	0.26	1.48	0.25	0.43	22	1	0.25	1.42	0.17	0.39	19	1
	With ≥ 25 mm	0.27	1.53	0.36	0.42	27	1	0.26	1.48	0.23	0.39	21	1	0.26	1.48	0.16	0.35	16	1
Casement ES7000	Without	0.26	1.48	0.43	0.52	32	2	0.26	1.48	0.28	0.48	24	1	0.25	1.42	0.19	0.43	20	1
	With < 25 mm	0.26	1.48	0.39	0.47	30	2	0.26	1.48	0.25	0.43	22	1	0.25	1.42	0.17	0.39	19	1
	With ≥ 25 mm	0.27	1.53	0.36	0.42	27	1	0.26	1.48	0.23	0.39	21	1	0.26	1.48	0.16	0.35	17	1
Picture ES7000	Without	0.26	1.48	0.56	0.69	40	3	0.25	1.42	0.36	0.62	29	2	0.25	1.42	0.24	0.56	23	1
	With < 25 mm	0.26	1.48	0.51	0.61	37	3	0.25	1.42	0.33	0.56	28	1	0.25	1.42	0.22	0.50	21	1
	With ≥ 25 mm	0.27	1.53	0.45	0.55	32	2	0.26	1.48	0.29	0.50	24	1	0.26	1.48	0.20	0.45	19	1
Fixed ES7000	Without	0.26	1.48	0.50	0.62	36	3	0.25	1.42	0.33	0.56	28	1	0.25	1.42	0.22	0.50	21	1
	With < 25 mm	0.26	1.48	0.45	0.55	33	2	0.25	1.42	0.29	0.50	25	1	0.25	1.42	0.20	0.45	20	1
	With ≥ 25 mm	0.27	1.53	0.40	0.49	29	2	0.26	1.48	0.26	0.44	22	1	0.26	1.48	0.18	0.40	18	1
Slider ES3500	Without	0.28	1.59	0.52	0.63	35	3	0.28	1.59	0.33	0.57	24	1	0.27	1.53	0.22	0.52	19	1
	With < 25 mm	0.28	1.59	0.46	0.56	31	2	0.28	1.59	0.30	0.51	22	1	0.27	1.53	0.20	0.46	18	1
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Single Hung ES3500	Without	0.28	1.59	0.52	0.63	35	3	0.28	1.59	0.33	0.57	24	1	0.27	1.53	0.22	0.52	19	1
	With < 25 mm	0.28	1.59	0.47	0.56	32	2	0.28	1.59	0.30	0.51	22	1	0.27	1.53	0.20	0.46	18	1
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Picture ES3500	Without	0.27	1.53	0.56	0.68	39	3	0.26	1.48	0.36	0.62	28	1	0.26	1.48	0.24	0.55	21	1
	With < 25 mm	0.27	1.53	0.50	0.61	35	3	0.26	1.48	0.32	0.55	26	1	0.26	1.48	0.22	0.50	20	1
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fullvent ES3500	Without	0.29	1.65	0.41	0.50	26	1	0.28	1.59	0.27	0.45	20	1	0.28	1.59	0.18	0.41	14	0
	With < 25 mm	0.29	1.65	0.37	0.45	24	0	0.28	1.59	0.24	0.41	18	1	0.28	1.59	0.16	0.37	13	0
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

U-Factor¹: Btu/h-ft²·F (imperial)
 U-Factor²: W/m²·K (metric)

Triple Glazed Low E (1 coat)		Triple Glazed 3MM																	
		1 x Low E 180 Argon						1 x Low E 272 Argon						1 x Low E 366 Argon					
TYPE	GRILLES	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015
Awning ES7000	Without	0.21	1.19	0.40	0.48	37	3	0.21	1.19	0.26	0.43	29	3	0.21	1.19	0.17	0.39	24	3
	With < 25 mm	0.21	1.19	0.36	0.43	35	3	0.21	1.19	0.24	0.39	28	3	0.21	1.19	0.16	0.35	23	2
	With ≥ 25 mm	0.21	1.19	0.33	0.39	33	3	0.21	1.19	0.21	0.35	26	3	0.21	1.19	0.14	0.32	22	2
Casement ES7000	Without	0.21	1.19	0.40	0.48	37	3	0.21	1.19	0.26	0.43	29	3	0.20	1.14	0.17	0.39	25	3
	With < 25 mm	0.21	1.19	0.36	0.43	35	3	0.21	1.19	0.24	0.39	28	3	0.20	1.14	0.16	0.35	24	3
	With ≥ 25 mm	0.22	1.25	0.33	0.39	31	2	0.21	1.19	0.21	0.35	26	3	0.21	1.19	0.14	0.32	22	2
Picture ES7000	Without	0.21	1.19	0.52	0.63	44	3	0.20	1.14	0.33	0.57	34	3	0.20	1.14	0.22	0.51	28	3
	With < 25 mm	0.21	1.19	0.47	0.56	41	3	0.20	1.14	0.30	0.51	32	3	0.20	1.14	0.20	0.46	26	3
	With ≥ 25 mm	0.21	1.19	0.42	0.50	38	3	0.21	1.19	0.27	0.45	29	3	0.20	1.14	0.18	0.41	25	3
Fixed ES7000	Without	0.21	1.19	0.47	0.56	41	3	0.20	1.14	0.30	0.51	32	3	0.20	1.14	0.20	0.46	26	3
	With < 25 mm	0.21	1.19	0.42	0.50	38	3	0.20	1.14	0.27	0.46	30	3	0.20	1.14	0.18	0.41	25	3
	With ≥ 25 mm	0.21	1.19	0.37	0.45	35	3	0.21	1.19	0.24	0.40	28	3	0.21	1.14	0.16	0.36	24	3
Slider ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Single Hung ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Picture ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fullvent ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

U-Factor¹: Btu/h-ft²-F (imperial)
U-Factor²: W/m²-K (metric)

Triple Glazed Low E (2 coats)		Triple Glazed 3MM																	
		2 x Low E 180 Argon						2 x Low E 272 Argon						2 x Low E 366 Argon					
TYPE	GRILLES	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015
Awning ES7000	Without	0.18	1.02	0.38	0.46	39	3	0.17	0.97	0.24	0.38	32	3	0.17	0.97	0.16	0.31	28	3
	With < 25 mm	0.18	1.02	0.34	0.42	37	3	0.17	0.97	0.22	0.34	31	3	0.17	0.97	0.15	0.28	27	3
	With ≥ 25 mm	0.18	1.02	0.31	0.37	35	3	0.18	1.02	0.20	0.31	29	3	0.18	1.02	0.14	0.25	27	3
Casement ES7000	Without	0.17	0.97	0.38	0.46	41	3	0.17	0.97	0.24	0.38	32	3	0.17	0.97	0.16	0.31	28	3
	With < 25 mm	0.17	0.97	0.34	0.42	38	3	0.17	0.97	0.22	0.34	31	3	0.17	0.97	0.15	0.28	27	3
	With ≥ 25 mm	0.18	1.02	0.31	0.37	35	3	0.18	1.02	0.20	0.31	29	3	0.17	0.97	0.14	0.25	27	3
Picture ES7000	Without	0.16	0.91	0.49	0.60	48	3	0.16	0.91	0.31	0.50	38	3	0.15	0.85	0.21	0.40	33	3
	With < 25 mm	0.16	0.91	0.44	0.54	45	3	0.16	0.91	0.28	0.45	36	3	0.15	0.85	0.19	0.36	32	3
	With ≥ 25 mm	0.17	0.97	0.40	0.48	42	3	0.17	0.97	0.25	0.40	33	3	0.16	0.91	0.17	0.32	30	3
Fixed ES7000	Without	0.16	0.91	0.44	0.54	45	3	0.16	0.91	0.28	0.45	36	3	0.15	0.85	0.19	0.36	32	3
	With < 25 mm	0.16	0.91	0.39	0.48	42	3	0.16	0.91	0.25	0.40	34	3	0.15	0.85	0.17	0.32	31	3
	With ≥ 25 mm	0.17	0.97	0.35	0.43	39	3	0.17	0.97	0.22	0.35	31	3	0.16	0.91	0.15	0.29	29	3
Slider ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Single Hung ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Picture ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fullvent ES3500	Without	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

U-Factor¹: Btu/h-ft²-F (imperial)
U-Factor²: W/m²-K (metric)

Note: Information presented is based on 3mm glazing. Number may vary when other glass thicknesses and tinted glazings are used. Please consult your sales representative for more details. Data for grids < 25mm are based on grilles between glass. Data for grids ≥ 25mm are based on SDLs with shadow bars between glass.

Willmar Collection		Triple Glazed 3MM					
		Clear					
TYPE	GRILLES	U ¹	U ²	SHGC	VT	ER	ESTAR ZONE 2015
Awning ES7000	Without	0.29	1.65	0.47	0.50	31	2
	With < 25 mm	0.29	1.65	0.43	0.45	29	2
	With ≥ 25 mm	0.29	1.65	0.39	0.40	26	1
Casement ES7000	Without	0.29	1.65	0.47	0.50	31	2
	With < 25 mm	0.29	1.65	0.43	0.45	29	2
	With ≥ 25 mm	0.29	1.65	0.39	0.40	26	1
Picture ES7000	Without	0.30	1.70	0.61	0.65	38	3
	With < 25 mm	0.30	1.70	0.55	0.58	34	3
	With ≥ 25 mm	0.30	1.70	0.49	0.52	31	2
Fixed ES7000	Without	0.30	1.70	0.55	0.59	34	3
	With < 25 mm	0.30	1.70	0.49	0.52	31	2
	With ≥ 25 mm	0.30	1.70	0.44	0.46	28	1
Slider ES3500	Without	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-
Single Hung ES3500	Without	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-
Picture ES3500	Without	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-
Fullvent ES3500	Without	-	-	-	-	-	-
	With < 25 mm	-	-	-	-	-	-
	With ≥ 25 mm	-	-	-	-	-	-

U-Factor¹: Btu/h-ft²·F (imperial)

U-Factor²: W/m²·K (metric)

Note: Information presented is based on 3mm glazing. Number may vary when other glass thicknesses and tinted glazings are used. Please consult your sales representative for more details. Data for grids < 25mm are based on grilles between glass. Data for grids ≥ 25mm are based on SDL's with shadow bars between glass.