25 Kodiak Crecent

North York, ON M3J 3E5

Tel: 1-888-232-4956

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Energy Ratings

300 Series Fixed – NFRC (Canada & USA) U-Value, SHGC, VT

ENERGY STAR Rated Products
All Regions
USA & Canada

Glass Type	LoĒ Surface	Gas	Grid	CPD #	Centre-of-Glass				Overall Window				Energy Star
					U-Value (Metric)	U-Value (Imperial)	SHGC	VT	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	Energy Rating (ER)
DOUBLE PANE													
3mm (366 / i89)	#2, #4	Argon	No	FWD-M-1-00125-00001	1.13	0.20	0.27	0.63	1.22	0.21	0.23	0.54	27
3mm (366 / i89)	#2, #4	Argon	Yes	FWD-M-1-00125-00002					1.22	0.21	0.21	0.48	25
4mm (180 / i89)	#2, #4	Argon	No	FWD-M-1-00148-00001	1.19	0.21	0.61	0.77	1.28	0.23	0.52	0.65	42
6mm (180 / i89)	#2, #4	Argon	No	FWD-M-1-00149-00001	1.23	0.22	0.58	0.75	1.32	0.23	0.50	0.64	40
TRIPLE PANE													
3mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00138-00001	0.58	0.10	0.20	0.46	0.72	0.13	0.18	0.39	35
4mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00139-00001	0.58	0.10	0.20	0.45	0.71	0.13	0.18	0.38	35
6mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00140-00001	0.59	0.10	0.20	0.43	0.73	0.13	0.17	0.37	34
4mm (366 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00142-00001	0.70	0.12	0.24	0.56	0.82	0.15	0.20	0.48	34
4mm (366 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00142-00002					0.82	0.15	0.19	0.43	33
4mm (366 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00144-00001	0.61	0.11	0.23	0.55	0.74	0.13	0.20	0.47	35
4mm (366 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00144-00002					0.74	0.13	0.18	0.42	34
6mm (366 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00145-00001	0.62	0.11	0.23	0.53	0.76	0.13	0.20	0.45	35
6mm (366 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00145-00002					0.76	0.13	0.18	0.40	34

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Passive House Certified Products

Glass Type	LoĒ Surface	Gas	Grid	CPD #	Centre-of-Glass U-Value (Metric)	Centre-of-Glass U-Value (Imperial)	Centre-of-Glass SHGC	Centre-of-Glass VT	Overall Window U-Value (Metric)	Overall Window U-Value (Imperial)	Overall Window SHGC	Overall Window VT	Energy Star Energy Rating (ER)
TRIPLE PANE													
4mm (272 / 272 / Clear)	#2, #4	Argon	No	FWD-M-1-00133-00001	0.70	0.12	0.33	0.57	0.82	0.14	0.28	0.48	38
6mm (272 / 272 / Clear)	#2, #4	Argon	No	FWD-M-1-00134-00001	0.70	0.12	0.31	0.55	0.83	0.15	0.27	0.46	37
4mm (i89 / 272 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00153-00001	0.67	0.12	0.41	0.62	0.78	0.14	0.35	0.53	43
4mm (180 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00154-00001	0.74	0.13	0.54	0.69	0.85	0.15	0.46	0.59	48
6mm (180 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00155-00001	0.74	0.13	0.51	0.67	0.88	0.15	0.43	0.43	46

All Tested Window Configurations

Glass Type	LoĒ Surface	Gas	Grid	CPD #	Centre-of-Glass U-Value (Metric)	Centre-of-Glass U-Value (Imperial)	Centre-of-Glass SHGC	Centre-of-Glass VT	Overall Window U-Value (Metric)	Overall Window U-Value (Imperial)	Overall Window SHGC	Overall Window VT	Energy Star Energy Rating (ER)
DOUBLE PANE													
3mm (i89 / Clear)	#2	Argon	No	FWD-M-1-00115-00001	1.67	0.29	0.69	0.80	1.68	0.30	0.58	0.68	37
3mm (i89 / Clear)	#2	Argon	Yes	FWD-M-1-00115-00002					1.68	0.30	0.53	0.61	34
4mm (i89 / Clear)	#2	Argon	No	FWD-M-1-00116-00001	1.65	0.29	0.67	0.80	1.67	0.29	0.57	0.68	36
4mm (i89 / Clear)	#2	Argon	Yes	FWD-M-1-00116-00002					1.67	0.29	0.52	0.61	33
6mm (i89 / Clear)	#2	Argon	No	FWD-M-1-00117-00001	1.68	0.30	0.64	0.78	1.71	0.30	0.55	0.66	34
6mm (i89 / Clear)	#2	Argon	Yes	FWD-M-1-00117-00002					1.71	0.30	0.50	0.59	31
3mm (272 / Clear)	#2	Argon	No	FWD-M-1-00118-00001	1.45	0.26	0.41	0.72	1.50	0.26	0.35	0.61	27

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All Tested Window Configurations

					Centre-of-Glass				Overall Window				Energy Star
Glass Type	LoĒ Surface	Gas	Grid	CPD #	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	Energy Rating (ER)
DOUBLE PANE													
3mm (272 / Clear)	#2	Argon	Yes	FWD-M-1-00118-00002					1.50	0.26	0.32	0.55	26
4mm (272 / Clear)	#2	Argon	No	FWD-M-1-00119-00001	1.42	0.25	0.41	0.71	1.48	0.26	0.35	0.61	28
4mm (272 / Clear)	#2	Argon	Yes	FWD-M-1-00119-00002					1.48	0.26	0.32	0.54	26
6mm (272 / Clear)	#2	Argon	No	FWD-M-1-00120-00001	1.45	0.25	0.40	0.70	1.52	0.27	0.34	0.59	26
6mm (272 / Clear)	#2	Argon	Yes	FWD-M-1-00120-00002					1.52	0.27	0.31	0.53	25
3mm (366 / Clear)	#2	Argon	No	FWD-M-1-00121-00001	1.40	0.25	0.27	0.65	1.45	0.26	0.23	0.55	22
3mm (366 / Clear)	#2	Argon	Yes	FWD-M-1-00121-00002					1.45	0.26	0.21	0.49	20
3mm (272 / i89)	#2, #4	Argon	No	FWD-M-1-00122-00001	1.16	0.20	0.40	0.70	1.25	0.22	0.35	0.60	33
3mm (272 / i89)	#2, #4	Argon	Yes	FWD-M-1-00122-00002					1.25	0.22	0.31	0.54	31
6mm (272 / i89)	#2, #4	Argon	No	FWD-M-1-00124-00001	1.19	0.21	0.39	0.68	1.29	0.23	0.33	0.58	31
6mm (272 / i89)	#2, #4	Argon	Yes	FWD-M-1-00124-00002					1.29	0.23	0.30	0.52	29
3mm (366 / i89)	#2, #4	Argon	No	FWD-M-1-00125-00001	1.13	0.20	0.27	0.63	1.22	0.21	0.23	0.54	27
3mm (366 / i89)	#2, #4	Argon	Yes	FWD-M-1-00125-00002					1.22	0.21	0.21	0.48	25
4mm (180 / i89)	#2, #4	Argon	No	FWD-M-1-00148-00001	1.19	0.21	0.61	0.77	1.28	0.23	0.52	0.65	42
4mm (180 / i89)	#2, #4	Argon	Yes	FWD-M-1-00148-00002					1.28	0.23	0.47	0.58	39
6mm (180 / i89)	#2, #4	Argon	No	FWD-M-1-00149-00001	1.23	0.22	0.58	0.75	1.32	0.23	0.50	0.64	40
6mm (180 / i89)	#2, #4	Argon	Yes	FWD-M-1-00150-00001					1.38	0.24	0.45	0.57	36
6mm (i89 / i89)	#2, #4	Argon	No	FWD-M-1-00151-00001	1.35	0.24	0.61	0.76	1.42	0.25	0.52	0.64	39

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All Tested Window Configurations

					Centre-of-Glass				Overall Window				Energy Star
Glass Type	LoĒ Surface	Gas	Grid	CPD #	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	Energy Rating (ER)
DOUBLE PANE													
6mm (i89 / i89)	#2, #4	Argon	Yes	FWD-M-1-00152-00001					1.48	0.26	0.47	0.58	35
TRIPLE PANE													
3mm (i89 / i89 / Clear)	#2, #4	Argon	No	FWD-M-1-00126-00001	0.87	0.15	0.59	0.72	0.97	0.17	0.51	0.61	48
3mm (i89 / i89 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00126-00002					0.97	0.17	0.46	0.55	45
3mm (180 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00127-00001	0.74	0.13	0.55	0.70	0.86	0.15	0.14	0.59	48
3mm (180 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00127-00002					0.86	0.15	0.42	0.53	45
3mm (272 / Clear / Clear)	#2	Argon	No	FWD-M-1-00128-00001	1.07	0.19	0.38	0.66	1.14	0.20	0.33	0.56	34
3mm (272 / Clear / Clear)	#2	Argon	Yes	FWD-M-1-00128-00002					1.14	0.20	0.30	0.50	32
4mm (272 / Clear / Clear)	#2	Argon	No	FWD-M-1-00129-00001	1.06	0.19	0.38	0.65	1.13	0.20	0.32	0.55	34
4mm (272 / Clear / Clear)	#2	Argon	Yes	FWD-M-1-00129-00002					1.13	0.20	0.29	0.49	32
5mm (272 / Clear / Clear)	#2	Argon	No	FWD-M-1-00130-00001	1.05	0.18	0.37	0.64	1.12	0.20	0.32	0.55	34
5mm (272 / Clear / Clear)	#2	Argon	Yes	FWD-M-1-00130-00002					1.12	0.20	0.29	0.49	32
6mm (272 / Clear / Clear)	#2	Argon	No	FWD-M-1-00131-00001	1.04	0.18	0.37	0.63	1.12	0.20	0.31	0.53	33
6mm (272 / Clear / Clear)	#2	Argon	Yes	FWD-M-1-00131-00002					1.12	0.20	0.28	0.48	32
3mm (272 / 272 / Clear)	#2, #4	Argon	No	FWD-M-1-00132-00001	0.70	0.12	0.33	0.57	0.83	0.15	0.28	0.49	38
3mm (272 / 272 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00132-00002					0.83	0.15	0.25	0.44	36
4mm (272 / 272 / Clear)	#2, #4	Argon	No	FWD-M-1-00133-00001	0.70	0.12	0.33	0.57	0.82	0.14	0.28	0.48	38
4mm (272 / 272 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00133-00002					0.82	0.14	0.25	0.43	36
6mm (272 / 272 / Clear)	#2, #4	Argon	No	FWD-M-1-00134-00001	0.70	0.12	0.31	0.55	0.83	0.15	0.27	0.46	37
6mm (272 / 272 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00134-00002					0.83	0.15	0.24	0.42	36

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Glass Type	LoĒ Surface	Gas	Grid	CPD #	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	Energy Rating (ER)
TRIPLE PANE													
3mm (272 / 272 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00135-00001	0.61	0.11	0.32	0.56	0.75	0.13	0.27	0.48	39
3mm (272 / 272 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00135-00002					0.75	0.13	0.25	0.43	38
4mm (272 / 272 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00136-00001	0.61	0.11	0.32	0.55	0.74	0.13	0.27	0.47	39
4mm (272 / 272 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00136-00002					0.74	0.13	0.25	0.42	38
6mm (272 / 272 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00137-00001	0.62	0.11	0.31	0.53	0.76	0.13	0.26	0.45	38
6mm (272 / 272 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00137-00002					0.76	0.13	0.24	0.41	37
3mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00138-00001	0.58	0.10	0.20	0.46	0.72	0.13	0.18	0.39	35
3mm (366 / 366 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00138-00002					0.72	0.13	0.16	0.35	33
4mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00139-00001	0.58	0.10	0.20	0.45	0.71	0.13	0.18	0.38	35
4mm (366 / 366 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00139-00002					0.71	0.13	0.16	0.34	34
6mm (366 / 366 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00140-00001	0.59	0.10	0.20	0.43	0.73	0.13	0.17	0.37	34
6mm (366 / 366 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00140-00002					0.73	0.13	0.16	0.33	33
4mm (272 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00141-00001	0.72	0.13	0.36	0.63	0.84	0.15	031	0.53	40
4mm (272 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00141-00002					0.84	0.15	0.28	0.48	38
4mm (366 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00142-00001	0.70	0.12	0.24	0.56	0.82	0.15	0.20	0.48	34
4mm (366 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00142-00002					0.82	0.15	0.19	0.43	33
4mm (272 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00143-00001	0.63	0.11	0.35	0.61	0.75	0.13	0.30	0.52	41
4mm (272 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00143-00002					0.75	0.13	0.27	0.47	39
5mm (272 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00146-00001	0.62	0.11	0.35	0.60	0.75	0.13	0.30	0.51	41
5mm (272 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00146-00002					0.75	0.13	0.27	0.46	39

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All Tested Window Configurations

					Centre-of-Glass				Overall Window				Energy Star
Glass Type	LoĒ Surface	Gas	Grid	CPD #	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	U-Value (Metric)	U-Value (Imperial)	SHGC	VT	Energy Rating (ER)
TRIPLE PANE													
4mm (366 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00144-00001	0.61	0.11	0.23	0.55	0.74	0.13	0.20	0.47	35
4mm (366 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00144-00002					0.74	0.13	0.18	0.42	34
6mm (366 / 180 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00145-00001	0.62	0.11	0.23	0.53	0.76	0.13	0.20	0.45	35
6mm (366 / 180 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00145-00002					0.76	0.13	0.18	0.40	34
4mm, (272 / 272 / i89)	#2, #4, #6	Krypton	No	FWD-M-1-00147-00001	0.57	0.10	0.32	0.55	0.70	0.12	0.27	0.47	40
4mm, (272 / 272 / i89)	#2, #4, #6	Krypton	Yes	FWD-M-1-00147-00002					0.70	0.12	0.25	0.42	39
4mm (i89 / 272 / i89)	#2, #4, #6	Argon	No	FWD-M-1-00153-00001	0.67	0.12	0.41	0.62	0.78	0.14	0.35	0.53	43
4mm (i89 / 272 / i89)	#2, #4, #6	Argon	Yes	FWD-M-1-00153-00002					0.78	0.14	0.32	0.47	41
4mm (180 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00154-00001	0.74	0.13	0.54	0.69	0.85	0.15	0.46	0.59	48
4mm (180 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00154-00002					0.85	0.15	0.41	0.53	45
6mm (180 / 180 / Clear)	#2, #4	Argon	No	FWD-M-1-00155-00001	0.74	0.13	0.51	0.67	0.88	0.15	0.43	0.43	46
6mm (180 / 180 / Clear)	#2, #4	Argon	Yes	FWD-M-1-00155-00002					0.88	0.15	0.39	0.39	43

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PERFORMANCE TESTING IN ACCORDANCE WITH AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011) & CSA A440S1-17 AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS 2017) & CSA A440S1:19 AAMA/WDMA/CSA 101/I.S.2/A440-22 (NAFS 2022)

Report No. TF-00338-C1

TEST REPORT SUMMARY	
Product type	**Fixed Window**
Product series/model	**300 Series**
Primary designator	**Class CW – PG60: Size tested 1920 x 2440 mm (~96 x 76 in) – Type FW**
Optional secondary designator	**Positive Design pressure (DP) = 2880 Pa (~60.15 psf)** **Negative design pressure (DP) = -2880 Pa (~-60.15 psf)** **Water penetration resistance test pressure = 720 Pa (~15.04 psf)** **Canadian air infiltration/ exfiltration level = A3 Level (NAFS-11)**
Option(s)	**None**