



# ENERGY PERFORMANCE DATA



**SINGLE GLASS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>CLEAR FLOAT</b>					
3mm	90	8	8	0.86	5.9
4mm	89	8	8	0.84	5.9
5mm	88	8	8	0.82	5.8
6mm	88	7	7	0.81	5.8
8mm	87	7	7	0.77	5.7
10mm	86	7	7	0.75	5.7
12mm	84	7	7	0.72	5.6
15mm	83	6	6	0.71	5.5
19mm	81	6	6	0.67	5.4
<b>LOW-IRON EXTRA CLEAR</b>					
6mm	92	8	8	0.91	5.8
8mm	91	8	8	0.90	5.7
10mm	91	8	8	0.89	5.7
12mm	90	8	8	0.88	5.7
13.52mm (6+6)	89	8	8	0.84	5.4
17.52mm (6+10)	89	8	8	0.83	5.3
21.52mm (10+10)	89	9	8	0.82	5.2
<b>TINTED FLOAT GLASS</b>					
6mm Bronze (Panasap)	50	5	5	0.64	5.8
5mm Dark Grey	22	4	4	0.57	5.8
6mm Dark Grey	15	4	4	0.53	5.8
5mm Green (Panasap)	74	6	6	0.60	5.8
6mm Green (Guardian)	70	7	7	0.55	5.8
4mm Grey (Euro)	56	6	6	0.69	5.9
5mm Grey (Euro)	50	5	5	0.65	5.8
6mm Grey (Euro)	44	5	5	0.61	5.8
8mm Grey (Euro)	34	5	5	0.55	5.7
10mm Grey (Euro)	26	4	4	0.50	5.7
12mm Grey (Euro)	20	4	4	0.47	5.6
6mm Dark Blue	58	6	6	0.59	5.8
6mm Super Blue	53	6	6	0.52	5.8
6mm Super Green	67	6	6	0.52	5.8
6mm Super Grey	9	4	4	0.35	5.8
<b>LAMINATED</b>					
<b>CLEAR</b>					
6.38mm	88	8	8	0.80	5.7
8.38mm	88	8	8	0.78	5.7
10.38mm	87	8	8	0.77	5.6
11.52mm	87	8	8	0.75	5.5
12.38mm	86	8	8	0.75	5.6
13.52mm	85	7	7	0.72	5.4
17.52mm	84	7	7	0.70	5.3
21.52mm	82	7	7	0.67	5.2
<b>TINTED PVB</b>					
6.38mm Bronze	52	6	6	0.64	5.7
6.38mm Green	71	7	7	0.73	5.7
6.38mm Grey	42	5	5	0.63	5.7
8.38mm Bronze	51	5	5	0.62	5.7
8.38mm Green	70	6	6	0.69	5.7

**SINGLE GLASS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>TINTED PVB CONTINUED</b>					
8.38mm Grey	42	5	5	0.62	5.7
10.38mm Bronze	50	5	5	0.60	5.6
10.38mm Green	68	6	6	0.67	5.6
10.38mm Grey	41	5	5	0.61	5.6
11.52mm Grey	43	5	5	0.60	5.4
12.38mm Bronze	50	5	5	0.59	5.6
12.38mm Green	69	6	6	0.66	5.6
12.38mm Grey	42	5	5	0.59	5.6
13.52mm Grey	42	5	5	0.58	5.4
<b>TRANSLUCENT PVB</b>					
6.38mm White	66	7	7	0.67	5.7
8.38mm White	66	7	7	0.67	5.7
10.38mm White	64	7	7	0.64	5.6
12.38mm White	64	6	6	0.64	5.6
6.76mm Grey	34	5	5	0.55	5.7
6.38mm Sunergy Low-E White	51	7	10	0.49	4.0
7.38mm Sol-R Low-E White	61	8	10	0.57	3.7
<b>ACOUSTA™</b>					
Acousta™ 6 Clear	88	8	8	0.79	5.7
Acousta™ 8 Clear	87	8	8	0.77	5.6
Acousta™ 10 Clear	86	8	8	0.76	5.6
Acousta™ 12 Clear	85	8	8	0.75	5.5
7.14mm Grey	42	5	5	0.61	5.6
9.14mm Grey	41	5	5	0.59	5.6
11.14mm Grey	40	5	5	0.57	5.5
13.14mm Grey	40	5	5	0.56	5.4
<b>LOW-E COATED</b>					
<b>SUNERGY® (2) LOW-E</b>					
4mm Neutral	67	9	10	0.59	4.2
5mm Neutral	67	9	10	0.59	4.1
6mm Neutral	69	9	10	0.59	4.0
8mm Neutral	67	8	10	0.56	3.9
10mm Neutral	68	8	10	0.56	3.9
6mm Dark Blue	41	6	9	0.39	4.0
6mm Green	56	7	9	0.42	4.0
6mm Grey	33	5	9	0.41	4.0
8mm Grey	26	5	8	0.37	4.0
<b>SUNERGY® LAMINATED (4) LOW-E</b>					
6.38mm Neutral	67	9	11	0.57	4.0
8.38mm Neutral	65	8	10	0.54	4.0
10.38mm Neutral	65	8	10	0.54	3.9
12.38mm Neutral	66	8	10	0.53	3.9
13.52mm Neutral	66	8	10	0.53	3.8
17.52mm Neutral (8 + 8)	63	8	10	0.49	3.7
21.52mm Neutral (10 + 10)	62	8	10	0.49	3.7
6.38mm Grey	34	5	9	0.44	4.0
8.38mm Grey	33	5	9	0.42	4.0
10.38mm Grey	33	5	9	0.42	3.9
12.38mm Grey	33	5	9	0.41	3.9
13.52mm Grey	33	5	9	0.41	3.8

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COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>SUNERGY® LAMINATED (4) LOW-E CONTINUED</b>					
17.52mm Grey (8 + 8)	32	5	9	0.39	3.7
21.52mm Grey (10 + 10)	31	5	9	0.38	3.7
11.52mm Sunergy Grey	32	5	9	0.40	3.8
13.52mm Sunergy Grey	32	5	9	0.39	3.8
17.52mm Sunergy Grey (6+10)	31	5	9	0.39	3.7
6.38mm Green	54	7	10	0.51	4.0
8.38mm Green	52	7	10	0.49	4.0
10.38mm Green	54	7	10	0.49	3.9
12.38mm Green	53	7	10	0.48	3.9
11.52mm Sunergy Green	54	7	9	0.40	3.8
13.52mm Sunergy Green	53	7	9	0.40	3.8
<b>SOL-R™ (2) LOW-E</b>					
4mm SOL-R Clear 73	82	11	12	0.73	3.8
5mm SOL-R Clear 71	82	10	11	0.71	3.7
6mm SOL-R Clear 70	81	10	11	0.70	3.7
8mm SOL-R Clear 69	81	10	11	0.69	3.7
10mm SOL-R Clear 66	80	10	11	0.66	3.7
4mm SOL-R Neutral 54	61	8	10	0.54	3.7
6mm SOL-R Neutral 54	63	8	10	0.54	3.6
10mm SOL-R Neutral 51	62	8	10	0.53	3.6
5mm SOL-R Grey 51	45	6	9	0.51	3.7
6mm SOL-R Grey 47	39	6	9	0.47	3.7
6mm SOL-R Grey 37	30	5	8	0.37	3.7
<b>SOL-R™ LAMINATED (4) LOW-E</b>					
6.38mm SOL-R Clear 69	84	10	11	0.69	3.6
8.38mm SOL-R Clear 66	80	10	11	0.66	3.7
9.52mm SOL-R Clear 66	79	10	11	0.65	3.6
10.38mm SOL-R Clear 68	82	10	11	0.68	3.6
11.52mm SOL-R Clear 62	78	10	11	0.62	3.5
11.52mm SOL-R Clear 62 (5+5)	78	10	11	0.62	3.6
12.38mm SOL-R Clear 61	77	10	11	0.61	3.6
13.52mm SOL-R Clear 60	77	10	11	0.60	3.5
17.52mm SOL-R Clear 57 (8+8)	75	9	11	0.57	3.5
21.52mm SOL-R Clear 54 (10+10)	73	9	11	0.54	3.4
6.38mm SOL-R Neutral 52	59	7	9	0.52	3.6
8.38mm SOL-R Neutral 50	60	8	10	0.50	3.6
9.52mm SOL-R Neutral 50	59	8	10	0.50	3.5
10.38mm SOL-R Neutral 50	62	8	9	0.50	3.6
11.52mm SOL-R Neutral 50	61	8	9	0.50	3.5
12.38mm SOL-R Neutral 49	61	8	9	0.49	3.5
13.52mm SOL-R Neutral 48	60	8	9	0.48	3.5
6.38mm SOL-R Grey 50	40	6	9	0.50	3.6
8.38mm SOL-R Grey 49	40	6	9	0.49	3.7
9.52mm SOL-R Grey 49	40	6	9	0.49	3.6
10.38mm SOL-R Grey 48	44	6	9	0.48	3.7
10.38mm SOL-R Grey 47	39	5	9	0.47	3.6
11.52mm SOL-R Grey 48	44	6	9	0.48	3.6
11.52mm SOL-R Grey 47	39	5	9	0.47	3.6
12.38mm SOL-R Grey 46	39	5	9	0.46	3.6
13.52mm SOL-R Grey 44	39	5	9	0.44	3.5

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	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>SOL-R™ LAMINATED (4) LOW-E CONTINUED</b>					
8.38mm SOL- R Grey 41	38	6	9	0.41	3.6
9.52mm SOL-R Grey 41	37	6	9	0.41	3.5
10.38mm SOL-R Grey 41	39	6	8	0.41	3.6
11.52mm SOL-R Grey 41	39	6	8	0.41	3.5
12.38mm SOL-R Grey 36	30	5	8	0.36	3.5
13.52mm SOL-R Grey 36	30	5	8	0.37	3.5
10.38mm SOL-R Green 43 (6+4)	63	8	10	0.43	3.7
11.52mm SOL-R Green 43 (6+4)	62	8	10	0.42	3.6
12.38mm SOL-R Green 42	62	8	10	0.42	3.6
13.52mm SOL-R Green 42	61	8	10	0.42	3.5
12.38mm SOL-R Super Green 35	46	6	9	0.35	3.5
13.52mm SOL-R Super Green 35	46	7	9	0.35	3.5
10.38mm SOL-R Dark Blue 45	51	7	10	0.45	3.6
11.52mm SOL-R Dark Blue 45	51	7	10	0.45	3.6
12.38mm SOL-R Dark Blue 44	51	7	9	0.44	3.6
13.52mm SOL-R Dark Blue 43	50	7	9	0.43	3.5
10.38mm SOL-R Dark Blue 37	39	6	9	0.37	3.6
11.52mm SOL-R Dark Blue 37	38	6	9	0.37	3.5
12.38mm SOL-R Dark Blue 37	40	6	8	0.37	3.5
13.52mm SOL-R Dark Blue 37	40	6	8	0.37	3.5
<b>SOL-XT™ LAMINATED (4) LOW-E</b>					
8.76mm SOL-XT Light 52	74	10	11	0.52	3.7
9.52mm SOL-XT Light 52	74	10	11	0.52	3.6
10.76mm SOL-XT Light 51	73	9	11	0.51	3.6
11.52mm SOL-XT Light 51	72	9	11	0.51	3.6
12.76mm SOL-XT Light 50	72	9	11	0.50	3.6
13.52mm SOL-XT Light 50	71	9	11	0.50	3.5
17.52mm SOL-XT Light 48 (8+8)	70	9	10	0.48	3.5
17.52mm SOL-XT Light 47 (10+6)	69	8	10	0.47	3.5
21.52mm SOL-XT Light 46 (10+10)	68	9	11	0.46	3.4
8.76mm SOL-XT Neutral 44	68	9	11	0.44	3.7
9.52mm SOL-XT Neutral 44	67	9	11	0.44	3.6
10.76mm SOL-XT Neutral 43	66	8	10	0.43	3.6
10.76mm SOL-XT Neutral 43 (5+5)	66	8	10	0.43	3.6
11.52mm SOL-XT Neutral 43	66	8	10	0.43	3.5
11.52mm SOL-XT Neutral 43 (5+5)	66	8	10	0.43	3.6
12.76mm SOL-XT Neutral 43	65	8	10	0.43	3.6
13.52mm SOL-XT Neutral 43	65	8	10	0.43	3.5
8.76mm SOL-XT Blue/Green 37	51	7	9	0.37	3.6
9.52mm SOL-XT Blue/Green 37	50	7	9	0.37	3.5
10.76mm SOL-XT Blue/Green 37	52	7	9	0.37	3.5
11.52mm SOL-XT Blue/Green 37	52	7	9	0.37	3.5
12.76mm SOL-XT Blue/Green 37	51	7	9	0.37	3.5
13.52mm SOL-XT Blue/Green 37	51	7	9	0.37	3.5
8.76mm SOL-XT Grey 37	43	6	10	0.37	3.7
9.52mm SOL-XT Grey 37	42	6	9	0.37	3.6
10.76mm SOL-XT Grey 36	42	6	9	0.36	3.6
11.52mm SOL-XT Grey 36	41	6	9	0.36	3.5
12.76mm SOL-XT Grey 33	33	5	9	0.33	3.6
13.52mm SOL-XT Grey 33	33	5	9	0.33	3.5

**SINGLE GLASS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>SOL-XT™ LAMINATED (4) LOW-E CONTINUED</b>					
8.76mm SOL-XT Grey 32	32	5	9	0.32	3.6
9.52mm SOL-XT Grey 32	32	5	9	0.32	3.5
10.76mm SOL-XT Grey 32	33	5	8	0.32	3.5
11.52mm SOL-XT Grey 32	33	5	8	0.32	3.5
12.76mm SOL-XT Grey 30	26	5	8	0.30	3.5
13.52mm SOL-XT Grey 30	26	5	8	0.30	3.5
10.76mm SOL-XT Green 35	51	7	10	0.35	3.7
11.52mm SOL-XT Green 35	50	7	10	0.35	3.6
12.76mm SOL-XT Green 34	50	7	10	0.34	3.6
13.52mm SOL-XT Green 34	49	7	10	0.34	3.5
10.76mm SOL-XT Dark Blue 35	44	6	10	0.35	3.6
11.52mm SOL-XT Dark Blue 35	44	6	10	0.35	3.6
12.76mm SOL-XT Dark Blue 35	43	6	9	0.35	3.6
13.52mm SOL-XT Dark Blue 35	43	6	9	0.35	3.6
<b>COMFORTPLUS™ (4) LOW-E</b>					
6.38mm Neutral 59	59	7	9	0.51	3.6
6.38mm Clear 82	82	10	11	0.68	3.6
6.38mm Grey 40	39	6	9	0.50	3.6
<b>ETECH GREY (2) LOW-E</b>					
6mm Etech Grey	40	6	9	0.47	3.7
<b>EVANTAGE™ (2) LOW-E</b>					
6mm Clear EV	68	23	26	0.63	3.8
6mm Grey EV	32	10	27	0.41	3.8
6mm Super Green EV	49	16	27	0.37	3.8
6mm Blue/Green EV	56	19	27	0.45	3.8
6mm Super Blue EV	39	12	27	0.36	3.8
6mm Bronze EV	38	11	27	0.45	3.8

**STORMSAFE GLASS - CYCLONE RESISTANT**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>STORMSAFE 14</b>					
Clear	85	8	8	0.73	5.1
Grey	42	5	5	0.55	5.1
Sol-R Clear Low-E	78	9	10	0.65	3.4
Sunergy Neutral Low-E	63	8	10	0.53	3.7
Sol-R Neutral Low-E	58	8	9	0.49	3.4
Sol-R Grey Low-E	39	5	8	0.46	3.4
<b>STORMSAFE 17</b>					
Clear	85	7	7	0.71	5.0
Grey	42	5	5	0.55	5.0
Sol-R Clear Low-E	77	10	11	0.61	3.3
Sunergy Neutral Low-E	66	8	10	0.54	3.6
Sunergy Grey Low-E	32	5	9	0.40	3.6
Sol-R Neutral Low-E	60	8	9	0.49	3.3
Sol-R Grey Low-E	37	6	9	0.43	3.3

**INSULATED GLASS UNITS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRi VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>DUO PLUS™ LOW-E (IGU'S)</b>					
<b>CLEAR</b>					
4mm Clear 12mm/ 4mm Clear	80	14	14	0.74	2.6
5mm Clear 12mm/ 5mm Clear	78	14	14	0.71	2.5
6mm Clear 12mm/ 6mm Clear	78	13	13	0.70	2.5
8mm Clear 12mm/ 6mm Clear	77	13	13	0.66	2.5
10mm Clear 12mm/ 8mm Clear	75	12	12	0.62	2.5
6.38mm Clear 12mm/ 6mm Clear	78	14	14	0.68	2.5
6.38mm Clear 12mm/ 6.38mm Clear	78	14	14	0.68	2.5
ACOUSTA™ 6 Clear 12mm/ 6mm Clear	77	14	14	0.67	2.5
<b>TINTED</b>					
4mm Grey 12mm / 4mm Clear	50	8	12	0.58	2.6
5mm Grey 12mm / 5mm Clear	44	7	12	0.52	2.6
6mm Grey 12mm / 6mm Clear	39	7	11	0.48	2.5
6.38mm Grey 12mm / 6mm Clear	39	7	11	0.50	2.5
6mm Dark Grey 12mm / 6mm Clear	13	5	11	0.39	2.5
6mm Green (Guardian) 12mm / 6mm Clear	62	11	14	0.42	2.5
6mm SuperGreen 12mm / 6mm Clear	59	10	12	0.40	2.5
6mm SuperGrey 12mm / 6mm Clear	8	4	11	0.21	2.5
7.14mm ACOUSTA™ Grey 12mm / 6mm Clear	39	7	11	0.49	2.5
<b>SUNERGY® LOW-E</b>					
4mm Sunergy Neutral (2) 12mm / 4mm Clear	60	12	16	0.50	1.9
5mm Sunergy Neutral (2) 12mm / 5mm Clear	61	12	16	0.50	1.9
6mm Sunergy Neutral (2) 12mm / 6mm Clear	61	12	16	0.50	1.8
8mm Sunergy Neutral (2) 12mm / 8mm Clear	60	12	16	0.47	1.8
10mm Sunergy Neutral (2) 12mm / 8mm Clear	59	12	15	0.47	1.8
6mm Green Sunergy (2) 12mm / 6mm Clear	49	9	15	0.32	1.8
6mm Grey Sunergy (2) 12mm / 6mm Clear	30	6	14	0.32	1.8
8mm Grey Sunergy (2) 12mm / 8mm Clear	23	6	14	0.28	1.8
6.38mm Sunergy Neutral (2) 12mm / 6mm Clear	60	12	16	0.48	1.8
6.38mm Sunergy Grey PVB (2) 12mm / 6mm Clear	30	6	15	0.34	1.8
<b>SOL-R™ LOW-E (2)</b>					
4mm SOL-R Clear 73 12mm / 4mm Clear	74	16	17	0.65	1.7



## INSULATED GLASS UNITS PERFORMANCE VALUES

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COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>DUO PLUS™ LOW-E (IGU'S)</b>					
<b>SOL-R™ LOW-E (2) CONTINUED</b>					
5mm SOL-R Clear 71 12mm / 5mm Clear	73	15	16	0.63	1.7
6mm SOL-R Clear 70 12mm / 6mm Clear	72	15	16	0.61	1.7
8mm SOL-R Clear 70 12mm / 8mm Clear	72	15	17	0.60	1.7
10mm SOL-R Clear 66 12mm / 8mm Clear	71	15	17	0.58	1.7
4mm SOL-R Neutral 54 12mm / 4mm Clear	55	11	16	0.46	1.6
6mm SOL-R Neutral 54 12mm / 6mm Clear	57	12	16	0.45	1.6
10mm SOL-R Neutral 51 12mm / 8mm Clear	55	11	15	0.44	1.6
5mm SOL-R Grey 51 12mm / 5mm Clear	40	8	15	0.43	1.7
6mm SOL-R Grey 47 12mm / 6mm Clear	35	7	15	0.38	1.7
6mm SOL-R Grey 37 12mm / 6mm Clear	27	6	14	0.28	1.6
6.38mm SOL-R Clear 69 12mm / 6mm Clear	73	15	16	0.63	1.6
8.38mm SOL-R Clear 66 12mm / 6mm Clear	71	15	16	0.57	1.7
9.52mm SOL-R Clear 66 12mm / 6mm Clear	71	15	16	0.56	1.7
10.38mm SOL-R Clear 68 12mm / 6mm Clear	72	15	16	0.58	1.6
11.52mm SOL-R Clear 62 12mm / 6mm Clear	69	14	16	0.54	1.6
11.52mm SOL-R Clear 62 (5+5) 12mm / 6mm Clear	69	14	16	0.53	1.6
12.38mm SOL-R Clear 61 12mm / 6mm Clear	69	14	16	0.52	1.6
13.52mm SOL-R Clear 61 12mm / 6mm Clear	68	14	16	0.51	1.6
6.38mm SOL-R Neutral 52 12mm / 6mm Clear	52	10	15	0.43	1.6
8.38mm SOL-R Neutral 50 12mm / 6mm Clear	53	11	15	0.41	1.6
9.52mm SOL-R Neutral 50 12mm / 6mm Clear	53	10	15	0.41	1.6
10.38mm SOL-R Neutral 50 12mm / 6mm Clear	55	11	15	0.41	1.6
11.52mm SOL-R Neutral 50 12mm / 6mm Clear	54	11	15	0.41	1.6
12.38mm SOL-R Neutral 49 12mm / 6mm Clear	54	11	15	0.40	1.6
13.52mm SOL-R Neutral 48 12mm / 6mm Clear	54	10	15	0.39	1.6
6.38mm SOL-R Grey 50 12mm / 6mm Clear	34	7	14	0.41	1.6
8.38mm SOL-R Grey 49 12mm / 6mm Clear	36	7	15	0.40	1.7
9.52mm SOL-R Grey 49 12mm / 6mm Clear	36	7	15	0.39	1.7
10.38mm SOL-R Grey 48 12mm / 6mm Clear	39	7	15	0.39	1.7
10.38mm SOL-R Grey 47 12mm / 6mm Clear	35	7	15	0.38	1.6

**INSULATED GLASS UNITS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRi VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>DUO PLUS™ LOW-E (IGU'S)</b>					
<b>SOL-R™ LOW-E (2) CONTINUED</b>					
11.52mm SOL-R Grey 48 12mm / 6mm Clear	39	7	15	0.38	1.7
11.52mm SOL-R Grey 47 12mm / 6mm Clear	35	7	15	0.37	1.6
12.38mm SOL-R Grey 46 12mm / 6mm Clear	34	7	15	0.35	1.6
13.52mm SOL-R Grey 44 12mm / 6mm Clear	34	7	15	0.35	1.6
8.38mm SOL- R Grey 41 12mm / 6mm Clear	33	7	14	0.32	1.6
9.52mm SOL-R Grey 41 12mm / 6mm Clear	33	7	14	0.32	1.6
10.38mm SOL-R Grey 41 12mm / 6mm Clear	34	7	14	0.32	1.6
11.52mm SOL-R Grey 41 12mm / 6mm Clear	34	7	14	0.32	1.6
12.38mm SOL-R Grey 36 12mm / 6mm Clear	27	6	14	0.27	1.6
13.52mm SOL-R Grey 36 12mm / 6mm Clear	27	6	14	0.27	1.6
10.38mm SOL-R Green 43 (6+4) 12mm / 6mm Clear	56	11	16	0.34	1.7
11.52mm SOL-R Green 43 (6+4) 12mm / 6mm Clear	55	11	16	0.34	1.7
12.38mm SOL-R Green 42 12mm / 6mm Clear	55	11	15	0.33	1.6
13.52mm SOL-R Green 42 12mm / 6mm Clear	54	11	15	0.33	1.6
12.38mm SOL-R Super Green 35 12mm / 6mm Clear	41	8	14	0.25	1.6
13.52mm SOL-R Super Green 35 12mm / 6mm Clear	41	8	14	0.25	1.6
10.38mm SOL-R Dark Blue 45 12mm / 6mm Clear	46	9	15	0.35	1.7
11.52mm SOL-R Dark Blue 45 12mm / 6mm Clear	46	9	15	0.35	1.7
12.38mm SOL-R Dark Blue 44 12mm / 6mm Clear	45	9	15	0.35	1.7
13.52mm SOL-R Dark Blue 43 12mm / 6mm Clear	45	9	15	0.34	1.7
10.38mm SOL-R Dark Blue 37 12mm / 6mm Clear	34	7	14	0.28	1.6
11.52mm SOL-R Dark Blue 37 12mm / 6mm Clear	34	7	14	0.28	1.6
12.38mm SOL-R Dark Blue 37 12mm / 6mm Clear	35	7	14	0.28	1.6
13.52mm SOL-R Dark Blue 37 12mm / 6mm Clear	35	7	14	0.28	1.6
<b>SOL-XT™ LOW-E (2)</b>					
8.76mm SOL-XT Light 52 12mm / 6mm Clear	66	14	16	0.44	1.7
9.52mm SOL-XT Light 52 12mm/ 6mm Clear	66	14	16	0.43	1.7
10.76mm SOL-XT Light 51 12mm / 6mm Clear	65	13	16	0.42	1.7
11.52mm SOL-XT Light 51 12mm / 6mm Clear	64	13	16	0.42	1.6
12.76mm SOL-XT Light 50 12mm / 6mm Clear	64	13	16	0.41	1.6

**INSULATED GLASS UNITS PERFORMANCE VALUES**

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M <sup>2</sup> K
<b>DUO PLUS™ LOW-E (IGU'S)</b>					
<b>SOL-XT™ LOW-E (2) CONTINUED</b>					
13.52mm SOL-XT Light 50 12mm / 6mm Clear	63	13	16	0.41	1.6
8.76mm SOL-XT Neutral 44 12mm / 6mm Clear	60	12	16	0.35	1.7
9.52mm SOL-XT Neutral 44 12mm / 6mm Clear	59	12	16	0.35	1.7
10.76mm SOL-XT Neutral 43 12mm / 6mm Clear	59	12	15	0.34	1.6
11.52mm SOL-XT Neutral 44 12mm / 6mm Clear	58	11	15	0.34	1.6
12.76mm SOL-XT Neutral 43 12mm / 6mm Clear	58	11	15	0.34	1.6
13.52mm SOL-XT Neutral 43 12mm / 6mm Clear	58	11	15	0.34	1.6
8.76mm SOL-XT Blue/Green 37 12mm / 6mm Clear	45	9	15	0.28	1.6
9.52mm SOL-XT Blue/Green 37 12mm / 6mm Clear	44	9	15	0.28	1.6
10.76mm SOL-XT Blue/Green 37 12mm / 6mm Clear	46	9	14	0.28	1.6
11.52mm SOL-XT Blue/Green 37 12mm / 6mm Clear	46	9	14	0.28	1.6
12.76mm SOL-XT Blue/Green 37 12mm / 6mm Clear	46	9	14	0.28	1.6
13.52mm SOL-XT Blue/Green 37 12mm / 6mm Clear	45	9	14	0.28	1.6
8.76mm SOL-XT Grey 37 12mm / 6mm Clear	38	7	15	0.27	1.7
9.52mm SOL-XT Grey 37 12mm / 6mm Clear	37	7	15	0.27	1.7
10.76mm SOL-XT Grey 36 12mm / 6mm Clear	37	7	15	0.26	1.6
11.52mm SOL-XT Grey 36 12mm / 6mm Clear	37	7	15	0.26	1.6
12.76mm SOL-XT Grey 33 12mm / 6mm Clear	29	6	14	0.23	1.6
13.52mm SOL-XT Grey 33 12mm / 6mm Clear	29	6	14	0.23	1.6
8.76mm SOL-XT Grey 32 12mm / 6mm Clear	28	6	14	0.22	1.6
9.52mm SOL-XT Grey 32 12mm / 6mm Clear	28	6	14	0.22	1.6
10.76mm SOL-XT Grey 32 12mm / 6mm Clear	29	6	14	0.22	1.6
11.52mm SOL-XT Grey 32 12mm / 6mm Clear	29	6	14	0.22	1.6
12.76mm SOL-XT Grey 30 12mm / 6mm Clear	23	5	14	0.20	1.6
13.52mm SOL-XT Grey 30 12mm / 6mm Clear	23	5	14	0.20	1.6
10.76mm SOL-XT Green 35 12mm / 6mm Clear	45	9	15	0.25	1.7
11.52mm SOL-XT Green 35 12mm / 6mm Clear	45	9	15	0.25	1.6
12.76mm SOL-XT Green 34 12mm / 6mm Clear	44	9	15	0.25	1.6
13.52mm SOL-XT Green 34 12mm / 6mm Clear	44	9	15	0.25	1.6
10.76mm SOL-XT Dark Blue 35 12mm / 6mm Clear	39	8	15	0.26	1.7

## INSULATED GLASS UNITS PERFORMANCE VALUES

	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRi VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE	%	EXTERNAL %	INTERNAL %		W/M2K
<b>DUO PLUS™ LOW-E (IGU'S)</b>					
<b>SOL-XT™ LOW-E (2) CONTINUED</b>					
11.52mm SOL-XT Dark Blue 35 12mm / 6mm Clear	39	8	15	0.26	1.7
12.76mm SOL-XT Dark Blue 35 12mm / 6mm Clear	38	6	15	0.25	1.7
13.52mm SOL-XT Dark Blue 35 12mm / 6mm Clear	38	6	15	0.25	1.7
<b>EVANTAGE™ LOW-E</b>					
6mm Clear EV (2) 12mm / 6mm Clear	61	27	28	0.56	1.7
6mm Grey EV (2) 12mm / 6mm Clear	29	10	29	0.33	1.7
6mm SuperGreen EV (2) 12mm / 6mm Clear	44	18	29	0.30	1.7
6mm Blue / Green EV (2) 12mm / 6mm Clear	51	21	29	0.38	1.7
6mm SuperBlue EV (2) 12mm / 6mm Clear	35	13	29	0.28	1.7
6mm Bronze EV (2) 12mm / 6mm Clear	34	12	29	0.37	1.7
<b>DUO ULTRA™ LOW-E (IGU'S)</b>					
<b>DUO ULTRA™ LO</b>					
Neutral 70 6mm (2) / 12mm / 6mm Clear	70	13	14	0.35	1.3
8mm (2) / 12mm / 8mm Clear	68	13	14	0.34	1.3
Neutral 50 6mm (2) / 12mm / 6mm Clear	50	14	14	0.25	1.3
8mm (2) / 12mm / 8mm Clear	48	16	12	0.25	1.3
Grey 35 6mm Grey / 12mm / 6mm (3)	35	6	11	0.26	1.3
Grey 25 6mm (2) / 12mm / 6mm Grey	25	13	6	0.24	1.3
Bronze 27 6mm (2) / 12mm / 6mm Bronze	27	13	7	0.24	1.3
<b>DUO ULTRA™ L1</b>					
Neutral 70 6mm (2) / 12mm / 6.38mm Clear	71	13	15	0.35	1.3
Neutral 50 6mm (2) / 12mm / 6.38mm Clear	50	14	14	0.25	1.3
<b>DUO ULTRA™ L2</b>					
Neutral 70 6mm (2) / 12mm / Acousta 6	71	13	14	0.35	1.3
Neutral 50 6mm (2) / 12mm / Acousta 6	50	14	14	0.25	1.3

**INSULATED GLASS UNITS PERFORMANCE VALUES**

	MM	VLT VISIBLE LIGHT TRANSMISSION	VLR VISIBLE LIGHT REFLECTANCE	VLRI VISIBLE LIGHT REFLECTANCE	SHGC	U-VALUE
COLOUR AND TYPE		%	EXTERNAL %	INTERNAL %		W/M2K
<b>STORMSAFE GLASS – CYCLONE RESISTANT (IGU'S)</b>						
<b>STORMSAFE 14</b>						
Clear /12mm /6mm Clear	31.80	76	14	14	0.61	2.4
Grey / 12mm /6mm Clear	31.80	38	6	12	0.43	2.4
Sol-R Clear Low-E / 12mm / 6mm Clear	31.80	70	15	16	0.56	1.6
Sunergy Neutral Low-E / 12mm / 6mm Clear	31.80	56	11	16	0.44	1.8
Sol-R Neutral Low-E / 12mm / 6mm Clear	31.80	52	10	16	0.40	1.6
Sol-R Grey Low-E / 12mm / 6mm Clear	31.80	35	7	15	0.37	1.6
<b>STORMSAFE 17</b>						
Clear /12mm /6mm Clear	34.56	75	13	14	0.59	2.4
Grey 12mm / 6mm Clear	34.56	37	6	12	0.42	2.4
Sol-R Clear Low-E / 12mm / 6mm Clear	34.56	68	15	17	0.52	1.6
Sunergy Neutral Low-E / 12mm / 6mm Clear	34.56	58	12	16	0.44	1.7
Sol-R Neutral Low-E / 12mm / 6mm Clear	34.56	54	11	16	0.40	1.6
Sunergy Grey Low-E / 12mm / 6mm Clear	34.56	28	6	15	0.30	1.7
Sol-R Grey Low-E / 12mm / 6mm Clear	34.56	33	7	15	0.34	1.6

## DEFINITIONS OF PERFORMANCE VALUES

### SOLAR CONTROL

The energy emitted from our Sun is referred to as solar energy or solar radiation. Solar control makes reference to the ability of glass to control or reduce the sun's direct heat energy on a window. Solar control also refers to the ability of a glass to reduce visible light and UV transmittance.

Look for the following performance values to measure solar control:

- > Solar heat gain co-efficient (SHGC);
- > Visible light transmittance;
- > UV transmission.

### THERMAL CONTROL

The Sun's direct transmission on the glass is not the only way in which heat is transferred. Heat is also transferred by method of re-radiation, conduction and convection. Thermal control refers to the ability of a glazing to resist heat transfer through these three methods. (Similar to the functional performance of batt or insulation foil for walls and ceilings).

Adding an additional pane of glass (IGU) and modifying the surface of the glass with a low-E coating will improve the insulation properties of the glass when compared to ordinary non coated glass. These thermal or insulation improvements work day and night in both summer and winter conditions, reducing heat entry and heat loss. Only low-E coated glass and IGU's can provide improved thermal control.

See also "U-value".

### SHGC - SOLAR HEAT GAIN CO-EFFICIENT

Refers to the total amount of solar energy transmittance entering a building through the glazing as heat gain. This measure equates to the Sun's direct transmittance energy plus the part of this energy absorbed by the glass and re-radiated inside. The lower the number the less heat gain.

### U-VALUE

U-value measures the rate of heat flow through the glazing by conduction, convection and re-radiation. It does not measure heat transfer by the Sun's direct transmittance as measured by the SHGC. The lower the U-value the better the thermal insulation properties of the glazing system.

### VISIBLE LIGHT TRANSMITTANCE (VLT%)

This term is used to describe the percentage level of interior daylight that a particular glass lets through. The higher the number the brighter the interior will be.

### VISIBLE LIGHT EXTERNAL REFLECTANCE (VLR%)

This refers to the percentage level of visible light that is reflected externally by a glass as detected by the human eye. This is a useful measure for glass where:

- > Restrictions exist on the level of reflection allowed;
- > The higher the percentage number the greater the mirror like appearance.

### VISIBLE LIGHT INTERNAL REFLECTANCE (VLRi%)

This refers to the percentage level of visible light that is reflected internally by a glass as detected by the human eye. This is a useful measure when determining the level of internal reflectance at night time. All glass products (apart from specialty anti-reflecting) have internal reflectances which make it difficult to see clearly out of a window at night time (with lights on inside) conditions. Internal reflectances increase with the use of reflective coated glass products.

## ENERGY DATA CALCULATION

Energy values stated in this document based on NFRC 100-2010 glass only values.

## GLASS SURFACE POSITIONS

**Coating Position** - For single glazed low-E glass, the coating should always be facing the inside of the building with no prolonged contact with moisture or direct weathering. To aid correct specification and make-ups an industry numbering sequence is used which identifies glass surface positions for the coatings e.g., #1,2,3,4 as shown Fig's 1-4. For single monolithic low-E glass the default position is #2 and for single low-E laminated is #4. The low-E coated surface needs to be air side for it to function in relation to thermal heat control (U-value). It is possible to make-up a laminated glass such that the coating is #2 or #3. The coating would now be sandwiched between the two glass panels and would lose its thermal control function (eg., the U-value would be the same as that of ordinary non-coated single glass). This same make-up does not retain all of the solar control properties (SHGC value) you have when the coating is normally on #4.

For IGU's the general rule is that the low-E coating is always surface position #2 (facing the IGU cavity). This provides optimal solar control whilst protecting the coating itself.

FIG.1 SINGLE LOW-E

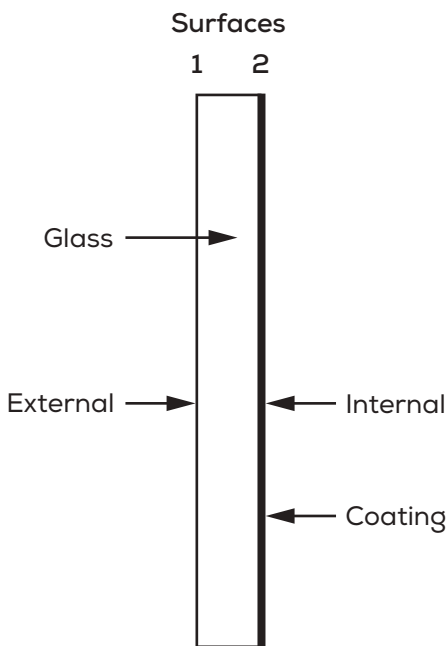


FIG.2 SINGLE LOW-E LAMINATED

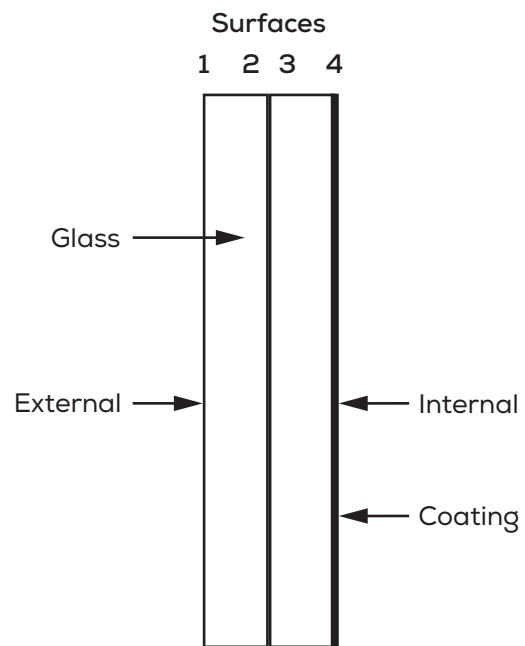


FIG.3 IGU LOW-E

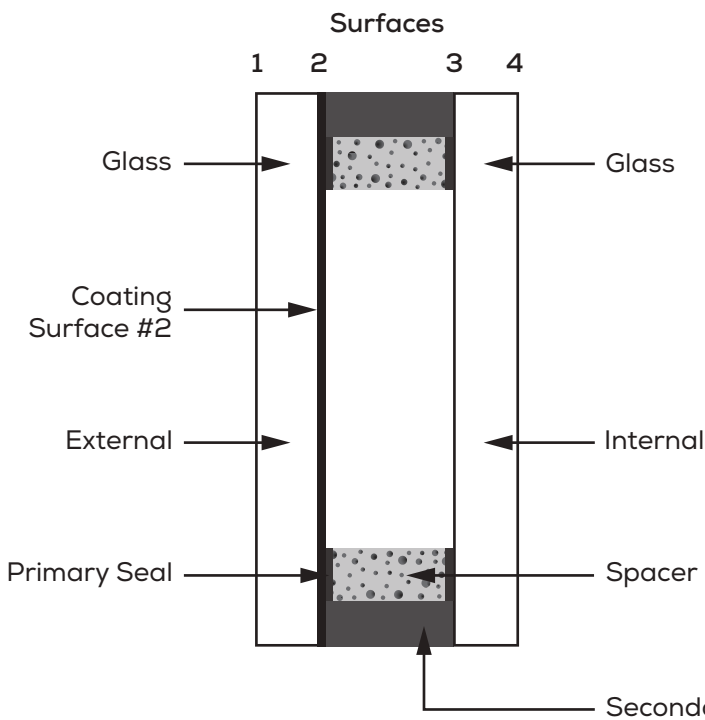
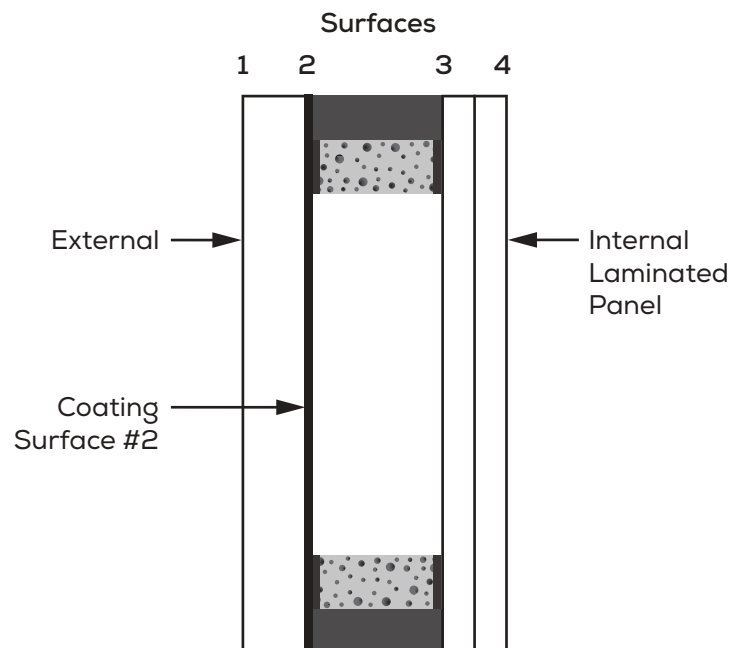


FIG.4 IGU LAMINATED



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