



MANKO
 WINDOW SYSTEMS, INC.
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LOW-E GLASS CROSS REFERENCE CHART

Clear Hard Coat Low-E Performance

1/4" Clear Low-E #2 / 1/2" Spacer / 1/4" Clear

Manufacturer	Product	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
		Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
AGC	ES73	75%	16%	17%	0.63	0.33	0.29	0.38	0.34	0.36	0.32	1.19
Pilkington	Energy Adv.	74%	16%	18%	0.62	0.33	0.29	0.38	0.34	0.36	0.32	1.20

Clear Double Silver Soft Coat Low-E Performance

1/4" Clear Low-E #2 / 1/2" Spacer / 1/4" Clear

Manufacturer	Product	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
		Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
AGC	ES 36	63%	12%	16%	0.36	0.29	0.25	0.34	0.31	0.32	0.28	1.75
AGC	ES 40	70%	11%	13%	0.39	0.29	0.24	0.34	0.30	0.32	0.27	1.80
Cardinal	272	69%	10%	11%	0.40	0.29	0.25	0.34	0.31	0.32	0.28	1.72
Guardian	MC 37	67%	11%	13%	0.37	0.29	0.25	0.34	0.31	0.32	0.28	1.79
Guardian	SN 68	68%	11%	12%	0.38	0.29	0.25	0.34	0.31	0.32	0.28	1.80
PPG	SB 60	70%	11%	12%	0.38	0.29	0.24	0.34	0.30	0.32	0.27	1.84
Viracon	VE 1-2M	70%	11%	12%	0.37	0.29	0.25	0.34	0.31	0.32	0.28	1.87
Guardian	SN 54	54%	13%	18%	0.28	0.29	0.24	0.34	0.30	0.32	0.27	1.91
PPG	SB 67	54%	19%	16%	0.29	0.29	0.24	0.34	0.30	0.32	0.27	1.84
Viracon	VUE 1-50	49%	11%	12%	0.26	0.29	0.24	0.34	0.30	0.32	0.27	1.91
Gurdian	SNR 43	43%	27%	14%	0.23	0.29	0.24	0.34	0.30	0.32	0.27	1.89
PPG	SB R100	41%	32%	14%	0.23	0.29	0.25	0.34	0.31	0.32	0.28	1.78

Clear Triple Silver Soft Coat Low-E Performance

1/4" Clear Low-E #2 / 1/2" Spacer / 1/4" Clear

Manufacturer	Product	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
		Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
AGC	ES 28	61%	12%	14%	0.29	0.29	0.24	0.34	0.30	0.32	0.27	2.11
Cardinal	366	62%	11%	11%	0.28	0.29	0.24	0.34	0.30	0.32	0.27	2.24
Guardian	MC 27	62%	11%	12%	0.27	0.29	0.24	0.34	0.30	0.32	0.27	2.32
Guardian	SNX 62/27	62%	11%	12%	0.27	0.29	0.24	0.34	0.30	0.32	0.27	2.32
PPG	SB 70XL	62%	12%	13%	0.28	0.29	0.24	0.34	0.30	0.32	0.27	2.25
Viracon	VNE 1-63	63%	10%	11%	0.29	0.29	0.24	0.34	0.30	0.32	0.27	2.18
Guardian	SNX 51/23	51%	14%	13%	0.23	0.29	0.24	0.34	0.30	0.32	0.27	2.18
PPG	SB 90	51%	13%	20%	0.23	0.29	0.24	0.34	0.30	0.32	0.27	2.20

Tint Double Silver Soft Coat Low-E Performance

1/4" Tint / 1/2" Spacer / 1/4" Clear

Manufacturer	Tint	Product	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
			Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
AGC	Bronze	ES 25 #2	40%	8%	16%	0.27	0.29	0.25	0.34	0.31	0.32	0.28	1.50
Guardian	Bronze	SN 68 #3	40%	8%	10%	0.31	0.29	0.25	0.34	0.31	0.32	0.28	1.29
PPG	Bronze	SB 60 #2	42%	7%	11%	0.28	0.29	0.24	0.34	0.30	0.32	0.27	1.53
AGC	Gray	ES 25 #2	34%	6%	16%	0.25	0.29	0.25	0.34	0.31	0.32	0.28	1.36
Guardian	Gray	SN 68 #2	34%	6%	11%	0.25	0.29	0.25	0.34	0.31	0.32	0.28	1.37
Guardian	Gray	SN 68 #3	34%	7%	9%	0.30	0.29	0.25	0.34	0.31	0.32	0.28	1.18
PPG	Gray	SB 60 #2	35%	7%	11%	0.25	0.29	0.24	0.34	0.30	0.32	0.27	1.41
Guardian	Green	SN 68 #2	58%	9%	12%	0.30	0.29	0.25	0.34	0.31	0.32	0.28	1.91
Guardian	Green	SN 68 #3	58%	10%	10%	0.35	0.29	0.25	0.34	0.31	0.32	0.28	1.64
PPG	Solex	SB 60 #2	62%	10%	12%	0.32	0.29	0.24	0.34	0.30	0.32	0.27	1.92
Guardian	Crystal Gray	SN 68 #2	48%	8%	11%	0.30	0.29	0.25	0.34	0.31	0.32	0.28	1.64

Tint Triple Silver Soft Coat Low-E Performance

1/4" Tint / 1/2" Spacer / 1/4" Clear

Manufacturer	Tint	Product	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
			Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
AGC	Bronze	ES 20 #2	39%	8%	14%	0.21	0.29	0.24	0.34	0.30	0.32	0.27	1.81
Guardian	Bronze	SNX 62/27 #3	37%	7%	10%	0.26	0.29	0.24	0.34	0.30	0.32	0.27	1.39
PPG	Bronze	SB 70 #2	41%	8%	12%	0.22	0.29	0.24	0.34	0.30	0.32	0.27	1.88
AGC	Gray	ES 20 #2	33%	7%	14%	0.20	0.29	0.24	0.34	0.30	0.32	0.27	1.64
Guardian	Gray	SNX 62/27 #2	31%	6%	11%	0.18	0.29	0.24	0.34	0.30	0.32	0.27	1.71
Guardian	Gray	SNX 62/27 #3	31%	7%	10%	0.24	0.29	0.24	0.34	0.30	0.32	0.27	1.27
PPG	Gray	SB 70 #2	34%	7%	12%	0.20	0.29	0.24	0.34	0.30	0.32	0.27	1.71
Guardian	Green	SNX 62/27 #2	52%	9%	11%	0.25	0.29	0.24	0.34	0.30	0.32	0.27	2.14
Guardian	Green	SNX 62/27 #3	52%	10%	11%	0.32	0.29	0.24	0.34	0.30	0.32	0.27	1.66
PPG	Solex	SB 70 #2	59%	11%	13%	0.27	0.29	0.24	0.34	0.30	0.32	0.27	2.17
Guardian	Crystal Gray	SNX 62/27 #2	44%	8%	11%	0.22	0.29	0.24	0.34	0.30	0.32	0.27	1.99
Guardian	Crystal Gray	SNX 51/23 #2	36%	9%	13%	0.20	0.29	0.24	0.34	0.30	0.32	0.27	1.85

Clear 2nd & 4th Surface Low-E Performance

1/4" Clear / 1/2" Spacer / 1/4" Clear

Manufacturer	Second Surface	Fourth Surface	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
			Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
Guardian	SN 68	IS 20	66%	12%	13%	0.36	0.24	0.20	0.27	0.23	0.26	0.22	1.82
Guardian / AGC	SN 68	ES 73	63%	12%	15%	0.36	0.23	0.20	0.26	0.23	0.25	0.22	1.78
Guardian	SNX 62/27	IS 20	60%	12%	13%	0.26	0.23	0.20	0.26	0.23	0.25	0.22	2.34
Guardian / AGC	SNX 62/27	ES 73	57%	12%	14%	0.25	0.23	0.19	0.26	0.22	0.25	0.21	2.29
Guardian	SNX 51/23	IS 20	50%	14%	14%	0.22	0.23	0.20	0.26	0.23	0.25	0.22	2.23
Guardian / AGC	SNX 51/23	ES 73	47%	14%	16%	0.22	0.23	0.19	0.26	0.22	0.25	0.21	2.18

Clear Triple Pane Low-E Performance

1/4" Clear / 1/2" Spacer / 1/4" Clear / 1/2" Spacer / 1/4" Clear

Manufacturer	Second Surface	Fourth Surface	Visible Light			Solar Heat Gain Coefficient	Winter U-Value Center of Glass		IG Winter U-Value Aluminum Spacer		IG Winter U-Value Tri-Seal Spacer		Light to Solar Gain
			Transmittance	Exterior Reflectance	Interior Reflectance		Air	Argon	Air	Argon	Air	Argon	
Guardian	SN 68	SN 68	52%	13%	15%	0.29	0.16	0.12	0.23	0.19	0.21	0.17	1.77
PPG	SB 60	SB 60	56%	13%	15%	0.31	0.16	0.12	0.23	0.19	0.21	0.17	1.82
Guardian	SNX 62/27	SNX 62/27	43%	13%	14%	0.20	0.15	0.12	0.22	0.19	0.20	0.17	2.14
PPG	SB 70	SB 70	44%	13%	15%	0.21	0.15	0.12	0.22	0.19	0.20	0.17	2.11

* Data calculated with Guardian's Performance Calculator

* IG U-Values (Aluminum Spacer & Tri-Seal Spacer) calculated with Quanex's IG Optimizer using a standard 36" x 48" unit