28.May.2025
By Seier, Gordon
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GLASS FABRICATORS INC.

AGM Glass -triples

Only acceptable combinations without Tempering or Heat Treating.

Make-up Name	Glass 1 & Coating	Glass 2 & Coating	Glass 3 & Coating	Gap 1	Gap 2	Visible Light			Solar Energy						Thermal Properties			Light to Solar Gain (LSG)	Thermal Stress (COG) °F/C	Acoustic Values
						Transmittance	Reflectance		Transmittance	Reflectance		Solar Heat Gain Coefficient (SHGC)	Shading Coefficient (sc)	Relative Heat Gain (RHG)	U-Value		R-Value Winter Night (hr·ft²·F/Btu)			STC
						Visible (τ_v %)	ρ_v % out	ρ_v % in	Solar (τ_e %)	ρ_e % out	ρ_e % in				Winter Night (Btu/hr·ft²·F)	Summer Day (Btu/hr·ft²·F)				
80/71 #2 /argon/clear /argon/ 80/71 #5	ClimaGuard® 80/71 (North America) on Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	ClimaGuard® 80/71 (North America) on Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	72	18	18	49	24	24	0.58	0.67	136	0.137	0.143	7.32	1.22	Go	28
CG70 #2 /argon/clear/argon/CG 80/71 #5	ClimaGuard® 70 (North America) on Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	ClimaGuard® 80/71 (North America) on Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	61	18	20	28	43	38	0.32	0.36	74	0.129	0.131	7.75	1.94	Go	28

Make-up Name	Glass 1 & Coating	Glass 2 & Coating	Glass 3 & Coating	Gap 1	Gap 2	Visible Light			Solar Energy						Thermal Properties			Light to Solar Gain (LSG)	Thermal Stress (COG) °F/C	Acoustic Values
						Transmittance	Reflectance		Transmittance	Reflectance		Solar Heat Gain Coefficient (SHGC)	Shading Coefficient (sc)	Relative Heat Gain (RHG)	U-Value		R-Value Winter Night (hr·ft²·F/Btu)			STC
						Visible (τ_V %)	ρ_V % out	ρ_V % in	Solar (τ_e %)	ρ_e % out	ρ_e % in				Winter Night (Btu/hr·ft²·F)	Summer Day (Btu/hr·ft²·F)				
CG70 #2 /argon/clear/argon/clear	ClimaGuard® 70 (North America) on Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	63	19	22	29	44	42	0.32	0.37	76	0.182	0.176	5.49	1.96	Go	28
clear/argon /clear/argon/CG80/71 #5	Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	ClimaGuard® 80/71 (North America) on Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	73	20	19	55	23	24	0.64	0.73	149	0.186	0.199	5.37	1.15	Go	28
clear/argon /clear/argon/clear	Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	75	21	21	65	18	18	0.71	0.82	169	0.289	0.326	3.47	1.06	Go	28

Make-up Name	Glass 1 & Coating	Glass 2 & Coating	Glass 3 & Coating	Gap 1	Gap 2	Visible Light			Solar Energy						Thermal Properties			Light to Solar Gain (LSG)	Thermal Stress (COG) °F/C	Acoustic Values
						Transmittance	Reflectance		Transmittance	Reflectance		Solar Heat Gain Coefficient (SHGC)	Shading Coefficient (sc)	Relative Heat Gain (RHG)	U-Value		R-Value Winter Night (hr·ft²·F/Btu)			STC
						Visible (τ_V %)	ρ_V % out	ρ_V % in	Solar (τ_e %)	ρ_e % out	ρ_e % in				Winter Night (Btu/hr·ft²·F)	Summer Day (Btu/hr·ft²·F)				
SNX 62/27 #2 /argon/CG70 #4 /argon/clear	SunGuard® SNX 62/27 (North America) on Guardian Clear Glass (North America)	ClimaGuard® 70 (North America) on Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	48	15	19	17	47	49	0.21	0.24	50	0.119	0.120	8.38	2.30	Go	28
SNX 62/27 #2 /argon/clear/argon/clear	SunGuard® SNX 62/27 (North America) on Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	Guardian Clear Glass (North America)	10% Air, 90% Argon	10% Air, 90% Argon	58	15	19	22	46	44	0.24	0.27	57	0.181	0.174	5.52	2.40	Go	28

Calculation Standard: NFRC 2010

80/71 #2 /argon/clear /argon/ 80/71 #5 :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (2-ClimaGuard® 80/71 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (5-ClimaGuard® 80/71 (North America))

CG70 #2 /argon/clear/argon/CG80/71 #5 :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (2-ClimaGuard® 70 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (5-ClimaGuard® 80/71 (North America))

CG70 #2 /argon/clear/argon/clear :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (2-ClimaGuard® 70 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm)

clear/argon/clear/argon/CG80/71 #5 :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (5-ClimaGuard® 80/71 (North America))

clear/argon/clear/argon/clear :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm)

SNX 62/27 #2 /argon/CG70 #4 /argon/clear :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (2-SunGuard® SNX 62/27 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (4-ClimaGuard® 70 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm)

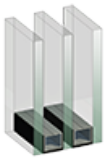
SNX 62/27 #2 /argon/clear/argon/clear :

GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) (2-SunGuard® SNX 62/27 (North America)) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm) GAP: 10% Air, 90% Argon 1/2" (12.7mm) GLASS: Guardian Clear Glass (North America) Glass, 1/8" (3mm)

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

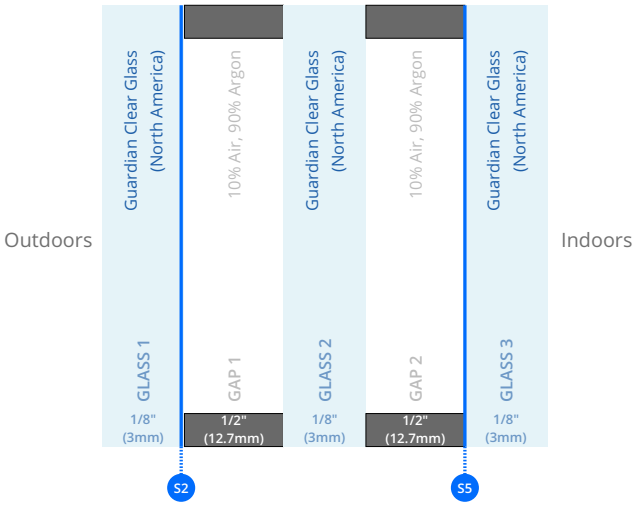
80/71 #2 /argon/clear /argon/ 80/71 #5



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²·F/Btu) wint. night Air 0.189 hr·ft²·F/Btu	Actual Thickness
GLASS 1	Surface #1		1.4	100.6	0.017	0.117"
	Substrate Overall					
	Surface #2	ClimaGuard® 80/71 (North America)	1.6	101.1		
GAP 1					3.177	0.5"
GLASS 2	Surface #3		32.1	113.1	0.017	0.117"
	Substrate Overall					
	Surface #4		32.2	113.1		
GAP 2					3.067	0.5"
GLASS 3	Surface #5	ClimaGuard® 80/71 (North America)	61.6	93.6	0.017	0.117"
	Substrate Overall					
	Surface #6		61.8	93.2		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.833 7.317 R total	Total Actual: 1.351 in

Summary Data

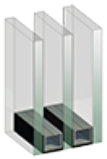
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	72	Solar Heat Gain Coefficient (SHGC)	0.58	STC	28
Reflectance-In % (ρ_v)	18	Shading Coefficient (sc)	0.67		
Reflectance-Out % (ρ_v)	18	Relative Heat Gain (RHG)	136		
Light to Solar Gain (LSG)	1.22	Transmittance % (τ_e)	49		
Thermal Properties		Reflectance-In % (ρ_e)	24		
U-Value Winter Night (Btu/hr·ft²·F)	0.137	Reflectance-Out % (ρ_e)	24		
U-Value Summer Day (Btu/hr·ft²·F)	0.143	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	7.32				

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

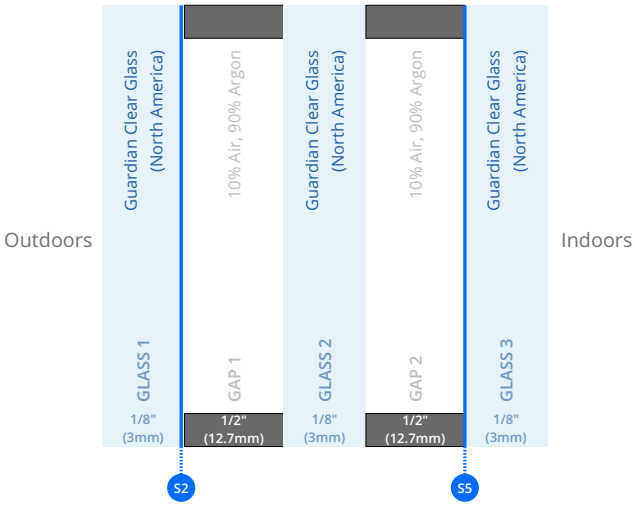
CG70 #2 /argon/clear/argon/CG80/71 #5



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²·F/Btu) wint. night Air 0.189 hr·ft²·F/Btu	Actual Thickness
GLASS 1	Surface #1		1.3	105.9	0.017	0.117"
	Substrate Overall					
	Surface #2	ClimaGuard® 70 (North America)	1.5	106.7		
GAP 1					3.602	0.5"
GLASS 2	Surface #3		34.1	98.9	0.017	0.117"
	Substrate Overall					
	Surface #4		34.2	98.8		
GAP 2					3.075	0.5"
GLASS 3	Surface #5	ClimaGuard® 80/71 (North America)	62.1	84.3	0.017	0.117"
	Substrate Overall					
	Surface #6		62.2	84.1		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.836 7.754 R total	Total Actual: 1.351 in

Summary Data

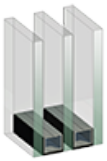
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	61	Solar Heat Gain Coefficient (SHGC)	0.32	STC	28
Reflectance-In % (ρ_v)	20	Shading Coefficient (sc)	0.36		
Reflectance-Out % (ρ_v)	18	Relative Heat Gain (RHG)	74		
Light to Solar Gain (LSG)	1.94	Transmittance % (τ_e)	28		
Thermal Properties		Reflectance-In % (ρ_e)	38		
U-Value Winter Night (Btu/hr·ft²·F)	0.129	Reflectance-Out % (ρ_e)	43		
U-Value Summer Day (Btu/hr·ft²·F)	0.131	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	7.75				

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

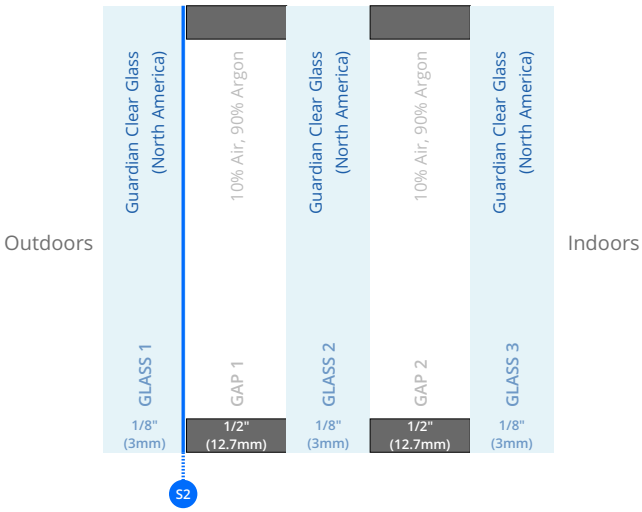
CG70 #2 /argon/clear/argon/clear



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

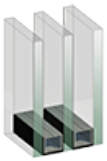
Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²-F/Btu) wint. night Air 0.189 hr·ft²-F/Btu	Actual Thickness
GLASS 1	Surface #1		2.0	105.3	0.017	0.117"
	Substrate Overall					
	Surface #2	ClimaGuard® 70 (North America)	2.2	106.0		
GAP 1					3.331	0.5"
GLASS 2	Surface #3		44.8	90.2	0.017	0.117"
	Substrate Overall					
	Surface #4		45.0	90.1		
GAP 2					1.101	0.5"
GLASS 3	Surface #5		59.1	83.1	0.017	0.117"
	Substrate Overall					
	Surface #6		59.3	83.0		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.820 5.492 R total	Total Actual: 1.351 in

Summary Data

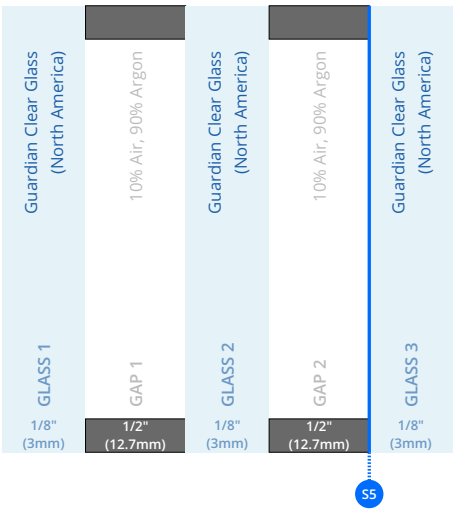
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	63	Solar Heat Gain Coefficient (SHGC)	0.32	STC	28
Reflectance-In % (ρ_v)	22	Shading Coefficient (sc)	0.37		
Reflectance-Out % (ρ_v)	19	Relative Heat Gain (RHG)	76		
Light to Solar Gain (LSG)	1.96	Transmittance % (τ_e)	29		
Thermal Properties		Reflectance-In % (ρ_e)	42		
U-Value Winter Night (Btu/hr·ft²·F)	0.182	Reflectance-Out % (ρ_e)	44		
U-Value Summer Day (Btu/hr·ft²·F)	0.176	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	5.49				

clear/argon/clear/argon/CG80/71 #5



Total Unit (Nominal):
1 3/8 in
Glazing Weight:
4.56 lb/ft²
Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²-F/Btu) wint. night Air 0.189 hr·ft²-F/Btu	Actual Thickness
GLASS 1	Surface #1		2.1	97.4	0.017	0.117"
	Substrate Overall					
	Surface #2		2.3	97.7		
GAP 1					1.333	0.5"
GLASS 2	Surface #3		19.7	106.9	0.017	0.117"
	Substrate Overall					
	Surface #4		20.0	106.9		
GAP 2					2.977	0.5"
GLASS 3	Surface #5	ClimaGuard® 80/71 (North America)	58.9	94.3	0.017	0.117"
	Substrate Overall					
	Surface #6		59.1	93.9		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.818 5.368 R total	Total Actual: 1.351 in

Summary Data

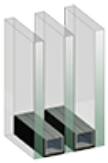
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	73	Solar Heat Gain Coefficient (SHGC)	0.64	STC	28
Reflectance-In % (ρ_v)	19	Shading Coefficient (sc)	0.73		
Reflectance-Out % (ρ_v)	20	Relative Heat Gain (RHG)	149		
Light to Solar Gain (LSG)	1.15	Transmittance % (τ_e)	55		
Thermal Properties		Reflectance-In % (ρ_e)	24		
U-Value Winter Night (Btu/hr·ft²·F)	0.186	Reflectance-Out % (ρ_e)	23		
U-Value Summer Day (Btu/hr·ft²·F)	0.199	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	5.37				

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

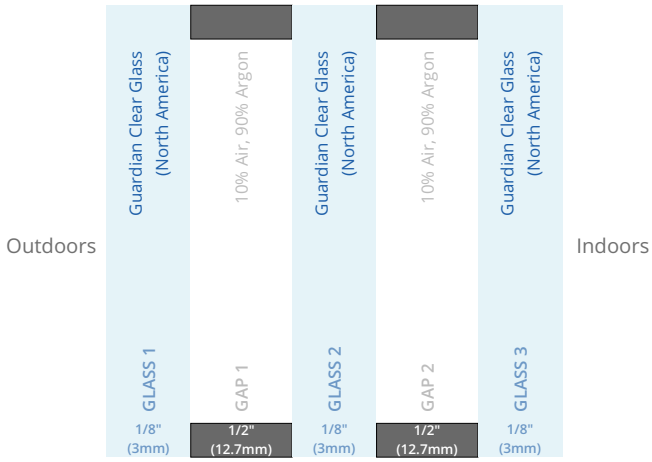
clear/argon/clear/argon/clear



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²·F/Btu) wint. night Air 0.189 hr·ft²·F/Btu	Actual Thickness
GLASS 1	Surface #1		3.4	95.3	0.017	0.117"
	Substrate Overall					
	Surface #2		3.8	95.5		
GAP 1					1.279	0.5"
GLASS 2	Surface #3		29.7	99.1	0.017	0.117"
	Substrate Overall					
	Surface #4		30.0	99.1		
GAP 2					1.148	0.5"
GLASS 3	Surface #5		53.3	90.4	0.017	0.117"
	Substrate Overall					
	Surface #6		53.6	90.2		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.798 3.466 R total	Total Actual: 1.351 in

Summary Data

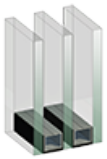
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	75	Solar Heat Gain Coefficient (SHGC)	0.71	STC	28
Reflectance-In % (ρ_v)	21	Shading Coefficient (sc)	0.82		
Reflectance-Out % (ρ_v)	21	Relative Heat Gain (RHG)	169		
Light to Solar Gain (LSG)	1.06	Transmittance % (τ_e)	65		
Thermal Properties		Reflectance-In % (ρ_e)	18		
U-Value Winter Night (Btu/hr·ft²·F)	0.289	Reflectance-Out % (ρ_e)	18		
U-Value Summer Day (Btu/hr·ft²·F)	0.326	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	3.47				

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

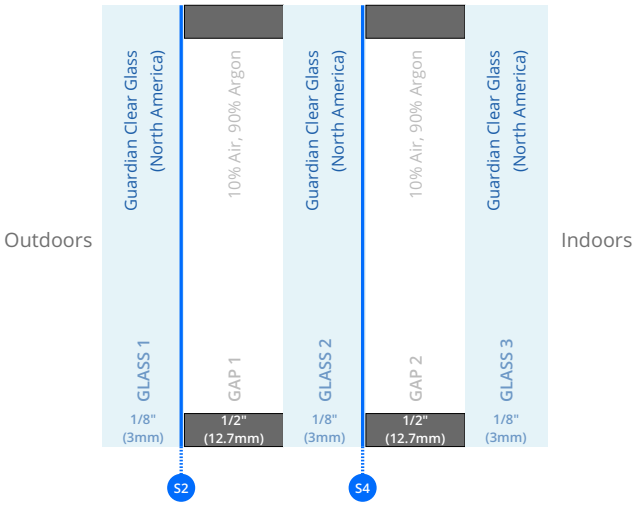
SNX 62/27 #2 /argon/CG70 #4 /argon/clear



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²·F/Btu) wint. night Air 0.189 hr·ft²·F/Btu	Actual Thickness
GLASS 1	Surface #1		1.2	111.2	0.017	0.117"
	Substrate Overall					
	Surface #2	SunGuard® SNX 62/27 (North America)	1.3	112.2		
GAP 1					3.692	0.5"
GLASS 2	Surface #3		32.3	119.5	0.017	0.117"
	Substrate Overall					
	Surface #4	ClimaGuard® 70 (North America)	32.4	119.5		
GAP 2					3.610	0.5"
GLASS 3	Surface #5		62.6	84.3	0.017	0.117"
	Substrate Overall					
	Surface #6		62.8	84.1		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.840 8.382 R total	Total Actual: 1.351 in

Summary Data

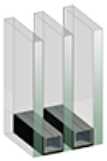
Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	48	Solar Heat Gain Coefficient (SHGC)	0.21	STC	28
Reflectance-In % (ρ_v)	19	Shading Coefficient (sc)	0.24		
Reflectance-Out % (ρ_v)	15	Relative Heat Gain (RHG)	50		
Light to Solar Gain (LSG)	2.30	Transmittance % (τ_e)	17		
Thermal Properties		Reflectance-In % (ρ_e)	49		
U-Value Winter Night (Btu/hr·ft²·F)	0.119	Reflectance-Out % (ρ_e)	47		
U-Value Summer Day (Btu/hr·ft²·F)	0.120	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	8.38				

PERFORMANCE CALCULATOR

GLASS FABRICATORS INC.

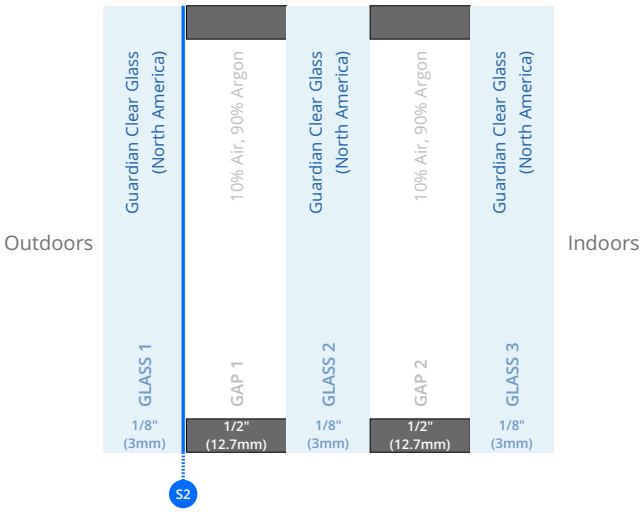
SNX 62/27 #2 /argon/clear/argon/clear



Total Unit (Nominal):
1 3/8 in

Glazing Weight:
4.56 lb/ft²

Slope: 90°



LAYER DATA

Layer		Coating	Winter Night Temps Air -0.4	Summer Day Temps Air 89.6	R Value (hr·ft²-F/Btu) wint. night Air 0.189 hr·ft²-F/Btu	Actual Thickness
GLASS 1	Surface #1		2.0	108.9	0.017	0.117"
	Substrate Overall					
	Surface #2	SunGuard® SNX 62/27 (North America)	2.2	109.8		
GAP 1					3.364	0.5"
GLASS 2	Surface #3		45.0	89.2	0.017	0.117"
	Substrate Overall					
	Surface #4		45.2	89.1		
GAP 2					1.100	0.5"
GLASS 3	Surface #5		59.2	82.2	0.017	0.117"
	Substrate Overall					
	Surface #6		59.4	82.0		
			Air 69.8 (°F)	Air 75.2 (°F)	Air 0.820 5.524 R total	Total Actual: 1.351 in

Summary Data

Calculation Standard: NFRC 2010

Visible Light		Solar Energy		Acoustic Values	
Transmittance % (τ_v)	58	Solar Heat Gain Coefficient (SHGC)	0.24	STC	28
Reflectance-In % (ρ_v)	19	Shading Coefficient (sc)	0.27		
Reflectance-Out % (ρ_v)	15	Relative Heat Gain (RHG)	57		
Light to Solar Gain (LSG)	2.40	Transmittance % (τ_e)	22		
Thermal Properties		Reflectance-In % (ρ_e)	44		
U-Value Winter Night (Btu/hr·ft²·F)	0.181	Reflectance-Out % (ρ_e)	46		
U-Value Summer Day (Btu/hr·ft²·F)	0.174	Thermal Stress Guidance (Center of	Go		
R-Value Winter Night (hr·ft²·F/Btu)	5.52				

Important Notes

Calculations and terms in this report are based on NFRC 2010. The performance values shown above represent nominal values for the center of glass with no spacer system or framing.

Embodied CO2 [eq. kg/m2] A1-A3 is estimated based on material Embodied Carbon Factor (ECF), derived from Guardian Glass Regional third-party independently verified and published / current Environmental Product Declarations (EPDs) which are produced to EN 15804 and are compliant with the requirements of ISO 14044, the International Life Cycle Assessment (LCA) standard, and ISO 14025 and ISO 21930, the international standards covering EPD for construction products. The A1–A3 ECF is an estimate of the embodied carbon due to production of that material, taking into account an average value of glass production thickness. The resulting material value should then be multiplied by the square area of glazing to provide an estimate of embodied carbon of the material at the project scale. Embodied CO2 estimates provided by Guardian represent only values associated with the glass components manufactured by Guardian. The estimated values do not represent in any way a plant-specific and/or product specific guarantee.

Laminated products:
The Performance Calculator allows the user to model a wide variety of laminated glass makeups using different float glass substrates, coatings and interlayer material, including those makeups where the coating faces the interlayer. It is the user's responsibility to assess whether the laminated glass makeup meets relevant regional standards and complies with applicable laminated glass safety regulations.

In addition, when the laminated glass makeup includes a coating facing the interlayer material, there may be a loss of thermal insulation performance and a color change compared to non-embedded coated class.

Non-specular products (translucent or diffuse):
The performance measurement for non-specular (translucent or diffuse) materials such as translucent interlayers or acid etched glass surface, or surface with ceramic frit is limited by the current experimental technologies. Since measurements capture physically only a part of the resulting radiation, calculated performance results provided herein and based on such measurements are not compliant with any standard (including EN 410) and may only be used as a general reference. Actual values may vary significantly based upon exact fabrication process, as well as type, thickness and color of used non-specular material.

Please note that the Thermal Stress Guideline is only a general guide to the thermal safety of a glazing, and it is not a replacement for detailed thermal stress analysis.

Explanation of Terms

Visible Light Transmittance (Tv, %) is the percentage of incident light in the wavelength range of 380 nm to 780 nm that is transmitted by the glass.

Ultraviolet (UV) Transmittance (Tuv, %) is the percentage of the incident solar radiation transmitted by the glazing in the 300 nm to 380 nm range.

Solar Energy Direct Transmittance (Te, %) is the percentage of incident solar energy in the wavelength range of 300 nm to 2500 nm that is directly transmitted by the glass.

Visible Light Reflectance Outdoors/Indoor (Rv out/in, %) is the percentage of incident visible light directly reflected by the glass.

Solar Direct Reflectance Outdoors/Indoors (Re out/in, %) is the percentage of incident solar energy directly reflected by the glass.

Solar Energy Absorptance (Ae, %) is the percentage of the sun's energy that is absorbed by glass.

U-Value is the glazing parameter that characterizes the heat transfer through the central part of the glazing, i.e. without edge effects, and expresses the steady-state density of heat transfer rate per temperature difference between the environmental temperatures on each side. US Standard units are Btu/hr·ft²·F and SI / Metric units are W/m2 K.

Relative Heat Gain (RHG) is the total net heat gain to the indoors due to both the air-to-air thermal conductance and the solar heat gain. US Standard units are Btu/hr.ft² and SI / Metric units are W/m².

Shading Coefficient (sc) is Solar Factor divided by 0.87. It is a measure of the solar heat gain referenced to 3 mm clear glass which has the designated value of 1.00.

Solar Heat Gain Coefficient (SHGC) is the sum of the solar direct transmittance and the secondary heat transfer factor of the glazing towards the inside, the latter resulting from heat transfer by convection and longwave IR-radiation of that part of the incident solar radiation which has been absorbed by the glazing.

Light-to-Solar Gain (LSG) is the ratio of visible light gain to solar gain. LSG = (Visible Transmittance) / (SHGC)

Color Rendering Index in transmission, D65 (R_a) is the change in color of an object as a result of the light being transmitted by the glass.

Weighted Sound Reduction Index (Rw) is a single-number quantity which characterizes the airborne sound insulation of a material or building element over a range of frequencies.

Sound Transmission Class (STC) is a single-number quantity which characterizes the airborne sound insulation of a material or building element over a range of frequencies.

Disclaimer for Acoustic Performance

Disclaimer for Acoustic Performance: The acoustic performance data provided in the reports is based on a test protocol or an estimation and may be used if user actual glazing is identical to input data described herein. Acoustic performance data herein is only applicable for glazing dimensions 1,23 m x 1,48 m (as per testing standard). Estimation of acoustic performance is based on component-similarity assumptions which are derived from measured data and interpolation to expand the database of values from test protocols. Due to inherent variations in acoustic performance when testing in accordance with EN ISO 10140-3/EN ISO 10140-2, some variation in the calculated performance can also be expected. As such, the weighted performance, Rw, and adaptation terms, C and Ctr, should typically be considered to be accurate within ±2 dB. However, wider deviations can occur. Actual performance may vary according to the glazing dimensions, frame system, noise sources and many other parameters. The acoustic performance data herein should not be used as a substitute for tests of actual glazing. For more information, please consult Assumptions and Terminology section in Guardian Acoustic Assistant.
By accessing this calculator, you agree not to alter or modify the generated report data and information, by any means. Any manual alteration will be your own responsibility and will annul all the content of the report.

Disclaimer

This performance analysis is provided for the limited purpose of assisting the user in evaluating the performance of the glass products identified on this report. Spectral data for products manufactured by Guardian reflect nominal values derived from typical production samples or CE Initial Type Testing and subject to variations due to manufacturing and calculation tolerances. Spectral data for products not manufactured by Guardian were derived from the LBNL International Glazing Database and have not been independently verified by Guardian. Guardian recommends a full-size mock-up be approved. The values provided herein are generated according to established engineering practices and applicable calculation standards. Many factors may affect glazing characteristics, including glass size, building orientation, shading, wind speed, type of installation, production process and others. The applicability and results of the analysis are directly related to user inputs and any changes in actual conditions can have a significant effect on the results. It is the responsibility of the users of the analysis to ensure that the intended application is appropriate and complies with all relevant laws, regulations, standards, codes of practices,

processing guidelines and other requirements. Guardian makes no guarantee that any glazing modeled herein is available from Guardian or any other manufacturer. The user has the responsibility to check with the manufacturer regarding availability of any glass type or make-up.

All the HT/T coatings must undergo heat treatment. The specified values for these coatings are valid only once the heat treatment process has been completed.

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