

Vitro[®]
Architectural Glass



Project: Lafayette College – Markle Hall
Architect: ALMA Architecture LLC
Products: VacuMax™ Glass, Solarban® 90 Glass,
AviProtek® Bird-Friendly Glass
Photographer: Jim Cunningham

VacuMax[™]
Vacuum Insulating Glass

Add extraordinary insulation to any configuration

The next generation tempered *VacuMax*[™] vacuum insulating glass (VIG) units are made up of two lites of 4mm (0.16") glass. Surface #2 on the interior lite features *Solarban*[®] 70 solar control, low-e glass, and the lites are separated by a non-lead proprietary metal seal and a vacuum space. The entire VIG unit has a total thickness of 8.3mm (0.33"), only slightly thicker than a standard 6mm (0.24") glass lite.

The unit's slim construction and light weight allows it to be incorporated into virtually any traditional glazing system, window frame or curtainwall application. *VacuMax*[™] VIG units are available in sizes from 0.30m x 0.30m (12" x 12") to 1.47m x 3.00m (58" x 118").



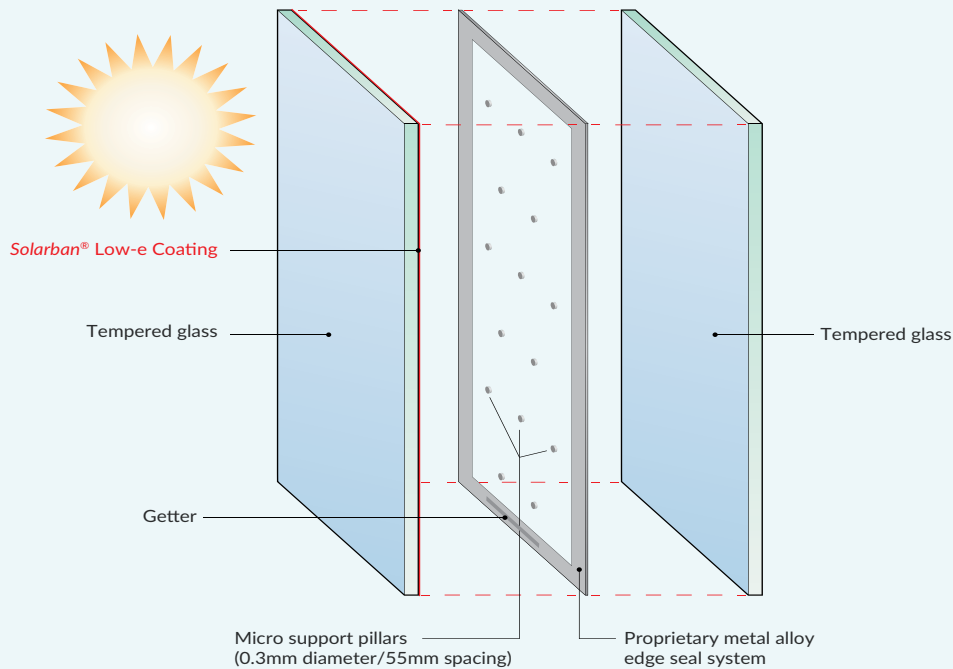
VacuMax[™] VIG Performance Data

Attribute	Monolithic (Single-Pane) Glass	Double-Glazed IGU with Low-e Coating	Triple-Glazed IGU with Low-e Coating	<i>VacuMax</i> [™] VIG
U-Value (Btu/hr•ft²•°F)	1.02	0.28	0.15	0.05
R-Value	1.0	3.6	6.7	20.0
Visible Light Transmittance (VLT)	89%	64%	47%	66%
Solar Heat Gain Coefficient (SHGC)	0.82	0.27	0.21	0.26
STC/OITC*	32/29	34/29	40/32	27/30
Seal Strength	N/A	150psi	150psi	3000psi
Thickness	6mm (0.24")	25mm (0.98")	44mm (1.73")	8.3mm (0.33")

*STC/OITC Tolerance +/-2

Thanks to its innovative insulating technology, *VacuMax*[™] VIG provides thermal insulation performance that is 3–5x better than conventional insulating glass units and up to 20x better than monolithic glass. *VacuMax*[™] VIG also offers extraordinary R-values and delivers energy savings and reduced carbon emissions.

Vacuum Insulating Glass (VIG) Unit



The strength of tempered glass

SGCC-certified fully tempered safety glass, *VacuMax™* VIG can be used globally across indoor and outdoor temperature extremes.

Built for the long term

With its proprietary metal alloy edge seal system, *VacuMax™* VIG has exceptionally long life compared to other VIG products and delivers superior resistance against thermal expansion or contraction caused by extreme indoor/outdoor temperature differences.

Aesthetic Improvements

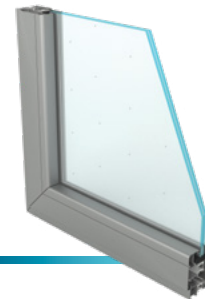
VacuMax™ VIG has been updated with a new design that eliminates the vacuum port and allows for a more concealed getter for enhanced aesthetics that don't compromise the performance of the VIG unit.

Improved acoustics & condensation performance

VacuMax™ VIG also delivers increased acoustic performance for dramatic noise dampening plus reduced center of glass condensation at temperatures as low as -58°F.

Perfect for a range of applications

VacuMax™ VIG is an ideal solution for any commercial or residential renovation or new construction project requiring extraordinary insulating performance, including office buildings, educational institutions, hospitality and healthcare.



With wall-like center of glass R-values of up to R20, *VacuMax™* VIG delivers the ultimate in thermal insulation performance.

For additional technical and logistics information about *VacuMax™* VIG, visit VacuMaxVIG.com, call 1-855-VTRO-GLS (887-6457) or contact your Vitro representative.

Vitro VacuMax™ Vacuum Insulating Glass Unit Performance Data

* All information represents Center of Glass Performance Data *	Visible Light Transmittance (VLT) %	Visible Light Reflectance		(Btu/hr•ft ² •°F) NFRC U-Value		Solar Heat Gain Coefficient (SHGC)	Light-to-Solar Gain (LSG)	R-Value
		Exterior %	Interior %	Winter Night	Summer Day			
4mm								
4mm Solarban® 60 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	72	11	12	0.07	0.07	0.38	1.89	14.3
4mm Solarban® 60 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	75	11	12	0.07	0.07	0.40	1.88	14.3
4mm Solarban® 65 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	71	15	15	0.06	0.07	0.34	2.09	16.7
4mm Solarban® 65 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	74	15	15	0.07	0.07	0.36	2.06	14.3
4mm Solarban® 70 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	66	14	14	0.05	0.06	0.26	2.54	20.0
4mm Solarban® 72 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	68	13	14	0.05	0.06	0.27	2.52	20.0
4mm Solarban® 90 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	52	12	19	0.06	0.06	0.21	2.48	16.7
4mm Solarban® 90 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	54	13	20	0.06	0.06	0.21	2.57	16.7
4mm Solarban® R67 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	55	19	16	0.07	0.07	0.28	1.96	14.3
4mm Solarban® R67 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	58	19	16	0.07	0.07	0.29	2.00	14.3
4mm Solarban® R77 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	48	26	16	0.06	0.06	0.23	2.09	16.7
4mm Solarban® R77 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	50	26	16	0.06	0.06	0.24	2.08	16.7
4mm Solarban® R100 (2) Clear + 0.3mm VacuMax™ + 4mm Clear	42	33	14	0.07	0.07	0.21	2.00	14.3
4mm Solarban® R100 (2) Starphire® + 0.3mm VacuMax™ + 4mm Starphire®	44	33	14	0.07	0.07	0.22	2.00	14.3
6mm								
6mm Solarban® 60 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	70	11	12	0.07	0.07	0.37	1.89	14.3
6mm Solarban® 60 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	74	11	12	0.07	0.07	0.40	1.85	14.3
6mm Solarban® 65 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	70	14	15	0.06	0.07	0.33	2.12	16.7
6mm Solarban® 65 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	73	15	15	0.06	0.07	0.36	2.03	16.7
6mm Solarban® 70 (2) + 0.3mm VacuMax™ + 6mm Clear	64	13	14	0.05	0.06	0.25	2.56	20.0
6mm Solarban® 72 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	68	13	14	0.05	0.06	0.27	2.52	20.0
6mm Solarban® 90 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	51	12	19	0.06	0.06	0.21	2.43	16.7
6mm Solarban® 90 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	54	13	20	0.06	0.06	0.21	2.57	16.7
6mm Solarban® R67 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	54	19	16	0.07	0.07	0.27	2.00	14.3
6mm Solarban® R67 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	57	20	16	0.07	0.07	0.29	1.97	14.3
6mm Solarban® R77 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	47	25	16	0.06	0.06	0.23	2.04	16.7
6mm Solarban® R77 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	50	26	16	0.06	0.06	0.24	2.08	16.7
6mm Solarban® R100 (2) Clear + 0.3mm VacuMax™ + 6mm Clear	42	32	14	0.07	0.07	0.21	2.00	14.3
6mm Solarban® R100 (2) Starphire® + 0.3mm VacuMax™ + 6mm Starphire®	44	33	14	0.07	0.07	0.22	2.00	14.3

Simulations were ran using LBNL Window 7.8 and Optics6 software with version 106.0 of the International Glazing Database and represents center of glass performance data.

Performance data is based on representative samples of factory production. Actual values may vary slightly due to variations in the production process. This data is to be used for comparison purposes and should not be considered a contract or guarantee of product availability. **For configurations that include diffuse components, such as fritted and etched, performance results cannot be verified and should only be used as a general indication of performance.** It is the recipient's responsibility to ensure the manufacturability of the above glazing configurations as well as evaluating appropriate design considerations such as wind and snow load analysis, thermal stress analysis, and local building code compliance. Vitro recommends that a full size mock-up be reviewed under the specific job-site conditions and retain the mock-up as a basis of acceptable product.



VacuMaxVIG.com



Tempered Vacuum Insulated Glass