

*Looks are still everything.*



## PPG ARCHITECTURAL GLASS PERFORMANCE

Comparisons for One-Inch Insulating Glass Units with PPG Glass



*Ideascapes*<sup>™</sup>  
Glass • Coatings • Paint

# One-Inch Insulating Glass Unit Comparisons with PPG Glass

Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear unless otherwise noted

Outdoor Lite: Coating if Any (Surface) Glass	Glass Type +	Indoor Lite: Coating if Any (Surface) Glass	Transmittance <sup>2</sup>			Exterior Reflectance <sup>2</sup>		U-Value <sup>3</sup> (Imperial)		European U-Value <sup>4</sup>	Shading Coeffi- cient <sup>5</sup>	Solar Heat Gain Coeffi- cient <sup>6</sup>	Light to Solar Gain (LSG) <sup>7</sup>
			Ultra- violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night- time	Summer Day- time				
<b>Uncoated</b>													
Clear Glass + Clear			50	79	61	15	12	0.47	0.50	2.81	0.81	0.70	1.13
STARPHIRE® + STARPHIRE			77	84	80	15	14	0.47	0.50	2.81	0.94	0.82	1.02
SOLEXIA™ + Clear			25	69	39	13	8	0.47	0.50	2.81	0.57	0.49	1.41
ATLANTICA™ + Clear			13	60	29	11	7	0.47	0.50	2.81	0.47	0.40	1.50
CARIBIA® + Clear			20	60	28	11	7	0.47	0.50	2.81	0.45	0.39	1.55
AZURIA™ + Clear			34	61	28	11	7	0.47	0.50	2.81	0.45	0.39	1.56
PACIFICA™ + Clear			12	38	23	7	6	0.47	0.50	2.81	0.41	0.35	1.07
SOLARBLUE™ + Clear			25	50	37	9	7	0.47	0.50	2.81	0.56	0.49	1.03
SOLARBRONZE® + Clear			21	47	39	8	7	0.47	0.50	2.81	0.59	0.51	0.93
SOLARGRAY® + Clear			20	40	33	7	7	0.47	0.50	2.81	0.53	0.45	0.88
OPTIGRAY® 23 + Clear			6	21	15	6	5	0.47	0.50	2.81	0.34	0.29	0.71
GRAYLITE® + Clear			6	12	19	5	5	0.47	0.50	2.81	0.39	0.34	0.36
<b>Coated</b>													
<b>SUNGATE® 500 Low-E Glass</b>													
SUNGATE 500 (2) + Clear			42	74	52	17	14	0.35	0.35	1.96	0.71	0.62	1.19
SOLEXIA + SUNGATE 500 (3) Clear			21	64	33	14	9	0.35	0.35	1.96	0.51	0.44	1.45
ATLANTICA + SUNGATE 500 (3) Clear			11	56	25	12	7	0.35	0.35	1.96	0.41	0.35	1.60
CARIBIA + SUNGATE 500 (3) Clear			17	56	24	12	7	0.35	0.35	1.96	0.40	0.34	1.65
AZURIA + SUNGATE 500 (3) Clear			29	57	24	12	7	0.35	0.35	1.96	0.40	0.34	1.66
PACIFICA + SUNGATE 500 (3) Clear			10	35	19	7	6	0.35	0.35	1.96	0.35	0.30	1.16
SOLARBLUE + SUNGATE 500 (3) Clear			21	46	32	10	9	0.35	0.35	1.96	0.51	0.44	1.06
SOLARBRONZE + SUNGATE 500 (3) Clear			18	44	33	9	9	0.35	0.35	1.96	0.53	0.46	0.96
SOLARGRAY + SUNGATE 500 (3) Clear			17	37	28	8	8	0.35	0.35	1.96	0.47	0.40	0.92
OPTIGRAY 23 + SUNGATE 500 (3) Clear			6	19	13	6	6	0.35	0.35	1.96	0.28	0.24	0.80
GRAYLITE + SUNGATE 500 (3) Clear			5	11	16	5	6	0.35	0.35	1.96	0.33	0.28	0.41
<b>SOLARBAN® 60 Solar Control Low-E Glass</b>													
SOLARBAN 60 (2) STARPHIRE + STARPHIRE			25	74	38	11	43	0.29	0.27	1.55	0.46	0.40	1.85
SOLARBAN 60 (2) Clear + Clear			19	70	33	11	29	0.29	0.27	1.55	0.44	0.38	1.85
SOLARBAN 60 (2) ATLANTICA + Clear			5	54	20	8	7	0.29	0.27	1.55	0.31	0.27	1.98
SOLARBAN 60 (2) AZURIA + Clear			13	54	21	8	7	0.29	0.27	1.55	0.32	0.28	1.93
SOLARBAN 60 (2) CARIBIA + Clear			8	54	20	8	4	0.29	0.27	1.55	0.31	0.27	1.99
SOLARBAN 60 (2) SOLEXIA + Clear			10	61	25	10	11	0.29	0.27	1.55	0.36	0.32	1.92
SOLARBAN 60 (2) PACIFICA + Clear			5	34	15	6	7	0.29	0.27	1.55	0.26	0.22	1.52
SOLARBAN 60 (2) SOLARBLUE + Clear			10	45	21	7	13	0.29	0.27	1.55	0.32	0.28	1.60
SOLARBAN 60 (2) SOLARBRONZE + Clear			8	42	20	7	16	0.29	0.27	1.55	0.31	0.27	1.56
SOLARBAN 60 (2) SOLARGRAY + Clear			8	35	17	6	12	0.29	0.27	1.55	0.28	0.24	1.47
SOLEXIA + SOLARBAN 60 (3) Clear			10	61	25	11	11	0.29	0.27	1.55	0.42	0.36	1.70
ATLANTICA + SOLARBAN 60 (3) Clear			5	53	20	9	7	0.29	0.27	1.55	0.35	0.30	1.78
CARIBIA + SOLARBAN 60 (3) Clear			8	54	20	9	7	0.29	0.27	1.55	0.35	0.31	1.74
AZURIA + SOLARBAN 60 (3) Clear			13	54	21	9	7	0.29	0.27	1.55	0.36	0.31	1.75
PACIFICA + SOLARBAN 60 (3) Clear			5	34	15	6	7	0.29	0.27	1.55	0.29	0.25	1.36
SOLARBLUE + SOLARBAN 60 (3) Clear			10	45	21	8	13	0.29	0.27	1.55	0.37	0.32	1.39
SOLARBRONZE + SOLARBAN 60 (3) Clear			8	42	20	7	17	0.29	0.27	1.55	0.36	0.31	1.36
SOLARGRAY + SOLARBAN 60 (3) Clear			8	35	17	7	13	0.29	0.27	1.55	0.32	0.28	1.26
OPTIGRAY 23 + SOLARBAN 60 (3) Clear			3	18	9	5	6	0.29	0.27	1.55	0.21	0.18	1.02
GRAYLITE + SOLARBAN 60 (3) Clear			2	11	7	5	10	0.29	0.27	1.55	0.20	0.17	0.64
<b>SOLARBAN® 70XL Solar Control Low-E Glass †</b>													
SOLARBAN 70XL (2) + Clear			6	64	25	12	52	0.28	0.26	1.50	0.32	0.27	2.37
SOLARBAN 70XL (2) SOLEXIA + Clear			3	54	19	10	12	0.28	0.26	1.50	0.29	0.25	2.18
SOLARBAN 70XL (2) ATLANTICA + Clear			2	48	16	9	8	0.28	0.26	1.50	0.26	0.23	2.07
SOLARBAN 70XL (2) CARIBIA + Clear			2	48	16	9	7	0.28	0.26	1.50	0.27	0.23	2.07
SOLARBAN 70XL (2) AZURIA + Clear			4	48	17	9	7	0.28	0.26	1.50	0.27	0.23	2.09
SOLARBAN 70XL (2) PACIFICA + Clear			1	30	11	6	7	0.28	0.26	1.50	0.21	0.18	1.63
SOLARBAN 70XL (2) SOLARBLUE + Clear			3	40	15	7	15	0.28	0.26	1.50	0.25	0.21	1.84
SOLARBAN 70XL (2) SOLARBRONZE + Clear			2	37	14	7	19	0.28	0.26	1.50	0.23	0.20	1.87
SOLARBAN 70XL (2) SOLARGRAY + Clear			2	31	12	7	15	0.28	0.26	1.50	0.22	0.19	1.65
SOLEXIA + SOLARBAN 70XL (3)			3	56	20	11	13	0.28	0.26	1.50	0.37	0.32	1.74
ATLANTICA + SOLARBAN 70XL (3)			2	49	17	10	8	0.28	0.26	1.50	0.32	0.28	1.74
CARIBIA + SOLARBAN 70XL (3)			2	49	17	9	8	0.28	0.26	1.50	0.32	0.28	1.75
AZURIA + SOLARBAN 70XL (3)			4	49	17	10	8	0.28	0.26	1.50	0.33	0.29	1.70
PACIFICA + SOLARBAN 70XL (3)			2	31	12	6	7	0.28	0.26	1.50	0.26	0.22	1.38
SOLARBLUE + SOLARBAN 70XL (3)			3	41	16	8	16	0.28	0.26	1.50	0.32	0.27	1.48
SOLARBRONZE + SOLARBAN 70XL (3)			3	38	15	8	20	0.28	0.26	1.50	0.30	0.26	1.48
SOLARGRAY + SOLARBAN 70XL (3)			2	32	13	7	15	0.28	0.26	1.50	0.27	0.24	1.34
OPTIGRAY 23 + SOLARBAN 70XL (3)			1	17	7	5	7	0.28	0.26	1.50	0.19	0.16	1.04
GRAYLITE + SOLARBAN 70XL (3)			1	10	5	5	11	0.28	0.26	1.50	0.16	0.14	0.71

# One-Inch Insulating Glass Unit Comparisons with PPG Glass

Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear unless otherwise noted													
Outdoor Lite: Coating if Any (Surface) Glass	Glass Type +	Indoor Lite: Coating if Any (Surface) Glass	Transmittance <sup>2</sup>			Exterior Reflectance <sup>2</sup>		U-Value <sup>3</sup> (Imperial)		European U-Value <sup>4</sup>	Shading Coefficient <sup>5</sup>	Solar Heat Gain Coefficient <sup>6</sup>	Light to Solar Gain (LSG) <sup>7</sup>
			Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
<b>Coated</b>													
<b>SOLARBAN® 80 Solar Control Low-E Glass</b>													
			13	48	20	33	38	0.29	0.27	1.52	0.28	0.24	1.98
			10	34	15	32	38	0.29	0.27	1.52	0.27	0.23	1.48
			9	34	15	19	28	0.29	0.27	1.52	0.23	0.20	1.70
			7	25	11	19	28	0.29	0.27	1.52	0.23	0.20	1.23
<b>SOLARBAN® z50 Solar Control Low-E Glass††</b>													
			14	51	26	8	23	0.29	0.27	1.55	0.36	0.31	1.64
			11	37	20	7	23	0.29	0.27	1.55	0.35	0.31	1.18
			10	39	16	8	7	0.29	0.27	1.55	0.35	0.30	1.31
			4	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.28
			6	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.29
			8	44	19	10	11	0.29	0.27	1.55	0.41	0.35	1.26
			4	25	12	6	7	0.29	0.27	1.55	0.28	0.24	1.01
			8	32	17	7	13	0.29	0.27	1.55	0.36	0.31	1.03
			7	30	16	7	17	0.29	0.27	1.55	0.35	0.31	0.98
			6	25	14	6	13	0.29	0.27	1.55	0.32	0.28	0.91
<b>VISTACOOL™ Subtly Reflective Glass</b>													
			29	47	22	21	11	0.47	0.50	2.81	0.39	0.34	1.39
			16	47	22	21	10	0.47	0.50	2.81	0.39	0.34	1.38
			10	29	19	11	8	0.47	0.50	2.81	0.37	0.31	0.93
			17	31	28	17	9	0.47	0.50	2.81	0.47	0.40	0.77
<b>SOLARCOOL® Reflective Glass</b>													
			7	27	19	24	12	0.47	0.50	2.81	0.36	0.31	0.87
			6	24	12	19	9	0.47	0.50	2.81	0.30	0.25	0.94
			10	24	12	20	10	0.47	0.50	2.81	0.29	0.25	0.95
			4	15	11	10	7	0.47	0.50	2.81	0.29	0.25	0.59
			7	20	19	15	11	0.47	0.50	2.81	0.37	0.32	0.61
			6	19	21	14	12	0.47	0.50	2.81	0.40	0.34	0.55
			6	16	18	11	10	0.47	0.50	2.81	0.36	0.31	0.50
			2	5	12	5	6	0.47	0.50	2.81	0.31	0.26	0.18
<b>VISTACOOL™ and SOLARCOOL® with SUNGATE® 500 Low-E (3)</b>													
			24	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.53
			14	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.51
			9	27	16	11	8	0.35	0.35	1.96	0.31	0.27	1.03
			14	29	23	12	10	0.35	0.35	1.96	0.41	0.35	0.83
			3	14	9	10	7	0.35	0.35	1.96	0.23	0.20	0.70
			6	25	15	24	13	0.35	0.35	1.96	0.31	0.26	0.98
			5	22	10	19	10	0.35	0.35	1.96	0.24	0.20	1.11
			8	22	10	20	10	0.35	0.35	1.96	0.23	0.20	1.11
			6	18	15	15	12	0.35	0.35	1.96	0.32	0.27	0.67
			5	18	17	14	13	0.35	0.35	1.96	0.34	0.29	0.61
			5	15	14	11	10	0.35	0.35	1.96	0.30	0.26	0.56
			1	5	9	5	7	0.35	0.35	1.96	0.25	0.21	0.21

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Important glass design considerations and comprehensive technical information, including performance, thermal stress and wind load tools for all PPG glasses are available at [www.ppgideascape.com/glasstechnical](http://www.ppgideascape.com/glasstechnical). Monolithic Glass Data can also be found at [www.ppgideascape.com/glasstechnical](http://www.ppgideascape.com/glasstechnical) or by calling 1-888-PPG-IDEA (1-888-774-4332).

# One-Inch Insulating Glass Unit Comparisons with PPG Glass

Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear unless otherwise noted

Outdoor Lite: Coating if Any (Surface) Glass	Glass Type +	Indoor Lite: Coating if Any (Surface) Glass	Transmittance <sup>2</sup>			Exterior Reflectance <sup>2</sup>		U-Value <sup>3</sup> (Imperial)		European U-Value <sup>4</sup>	Shading Coefficient <sup>5</sup>	Solar Heat Gain Coefficient <sup>6</sup>	Light to Solar Gain (LSG) <sup>7</sup>
			Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
<b>Coated</b>													
<b>VISTACOOL™ and SOLARCOOL® with SOLARBAN® 60 Solar Control Low-E (3)</b>													
VISTACOOL (2) AZURIA + SOLARBAN 60 (3) Clear			11	42	16	20	11	0.29	0.27	1.55	0.30	0.26	1.61
VISTACOOL (2) CARIBIA + SOLARBAN 60 (3) Clear			7	42	16	20	11	0.29	0.27	1.55	0.29	0.25	1.66
VISTACOOL (2) PACIFICA + SOLARBAN 60 (3) Clear			4	26	12	11	9	0.29	0.27	1.55	0.24	0.21	1.23
VISTACOOL (2) SOLARGRAY + SOLARBAN 60 (3) Clear			7	27	14	11	15	0.29	0.27	1.55	0.28	0.24	1.13
SOLARCOOL (2) PACIFICA + SOLARBAN 60 (3) Clear			2	13	6	10	8	0.29	0.27	1.55	0.17	0.15	0.89
SOLARCOOL (2) SOLEXIA + SOLARBAN 60 (3) Clear			3	24	10	24	15	0.29	0.27	1.55	0.22	0.19	1.26
SOLARCOOL (2) CARIBIA + SOLARBAN 60 (3) Clear			2	21	8	19	10	0.29	0.27	1.55	0.19	0.16	1.30
SOLARCOOL (2) AZURIA + SOLARBAN 60 (3) Clear			4	21	8	19	10	0.29	0.27	1.55	0.19	0.16	1.31
SOLARCOOL (2) SOLARBLUE + SOLARBAN 60 (3) Clear			3	17	9	14	15	0.29	0.27	1.55	0.21	0.18	0.97
SOLARCOOL (2) SOLARBRONZE + SOLARBAN 60 (3) Clear			3	17	9	14	18	0.29	0.27	1.55	0.21	0.18	0.92
SOLARCOOL (2) SOLARGRAY + SOLARBAN 60 (3) Clear			2	14	7	11	14	0.29	0.27	1.55	0.19	0.16	0.86
SOLARCOOL (2) GRAYLITE + SOLARBAN 60 (3) Clear			1	4	3	5	10	0.29	0.27	1.55	0.14	0.12	0.36
<b>VISTACOOL™ and SOLARCOOL® with SOLARBAN® z50 Solar Control Low-E</b>													
VISTACOOL (2) AZURIA + SOLARBAN z50 (3) OPTIBLUE			9	30	12	20	11	0.29	0.27	1.55	0.29	0.25	1.20
VISTACOOL (2) CARIBIA + SOLARBAN z50 (3) OPTIBLUE			5	30	12	20	11	0.29	0.27	1.55	0.29	0.25	1.20
VISTACOOL (2) PACIFICA + SOLARBAN z50 (3) OPTIBLUE			4	19	9	11	9	0.29	0.27	1.55	0.24	0.21	0.91
VISTACOOL (2) SOLARGRAY + SOLARBAN z50 (3) OPTIBLUE			5	20	11	11	15	0.29	0.27	1.55	0.27	0.24	0.82
SOLARCOOL (2) PACIFICA + SOLARBAN z50 (3) OPTIBLUE			1	9	4	10	8	0.29	0.27	1.55	0.17	0.14	0.65
SOLARCOOL (2) SOLARBLUE + SOLARBAN z50 (3) OPTIBLUE			2	12	7	14	15	0.29	0.27	1.55	0.20	0.17	0.71
<b>VISTACOOL™ and SOLARCOOL® with SOLARBAN® 70XL Solar Control Low-E (3) †</b>													
VISTACOOL (2) AZURIA + SOLARBAN 70XL (3)			4	38	14	21	12	0.28	0.26	1.50	0.27	0.24	1.59
VISTACOOL (2) CARIBIA + SOLARBAN 70XL (3)			2	38	13	20	11	0.28	0.26	1.50	0.27	0.23	1.65
VISTACOOL (2) PACIFICA + SOLARBAN 70XL (3)			1	24	9	11	9	0.28	0.26	1.50	0.22	0.19	1.24
VISTACOOL (2) SOLARGRAY + SOLARBAN 70XL (3)			2	25	10	11	17	0.28	0.26	1.50	0.23	0.20	1.24
SOLARCOOL (2) SOLEXIA + SOLARBAN 70XL (3)			1	22	8	24	16	0.28	0.26	1.50	0.20	0.17	1.28
SOLARCOOL (2) CARIBIA + SOLARBAN 70XL (3)			1	19	6	19	10	0.28	0.26	1.50	0.18	0.15	1.27
SOLARCOOL (2) AZURIA + SOLARBAN 70XL (3)			1	19	7	19	10	0.28	0.26	1.50	0.18	0.15	1.27
SOLARCOOL (2) PACIFICA + SOLARBAN 70XL (3)			1	12	4	10	8	0.28	0.26	1.50	0.15	0.13	0.89
SOLARCOOL (2) SOLARBLUE + SOLARBAN 70XL (3)			1	16	6	14	16	0.28	0.26	1.50	0.18	0.15	1.03
SOLARCOOL (2) SOLARBRONZE + SOLARBAN 70XL (3)			1	15	6	14	19	0.28	0.26	1.50	0.17	0.15	1.01
SOLARCOOL (2) SOLARGRAY + SOLARBAN 70XL (3)			1	13	5	11	15	0.28	0.26	1.50	0.16	0.14	0.89
SOLARCOOL (2) GRAYLITE + SOLARBAN 70XL (3)			< 1	4	2	5	10	0.28	0.26	1.50	0.12	0.10	0.39

- † Solarban 70XL for annealed applications is applied to *Starphire* glass; heat treated applications will require either clear or *Starphire* glass depending on manufacturing process.
- †† *Optiblu* is a unique substrate by PPG designed specially for *Solarban z50*. It can also be used for spandrel glass and as an interior lite for *Solarban 80* glass.
- 1. Performance data is based on representative samples of factory production. Actual values may vary due to the production process and manufacturing tolerances. All tabulated data is based on NFRC methodology using the LBNL Window 5.2 software. Variations from previously published data are due to minor changes in the LBNL Window 5.2 software versus Version 4.1.
- 2. Transmittance and Reflectance values are based on spectrophotometric measurements and energy distribution of solar radiation.
- 3. U-Value is the overall coefficient of heat transmittance or heat flow measured in BTU/hr. • ft<sup>2</sup> • °F. Lower U-values indicate better insulating performance.

- 4. European U-Value is the overall coefficient of heat transmittance or heat flow measured in Watts/m<sup>2</sup>•°C, and is calculated using WinDat WIS version 3.0.1 software.
- 5. Shading Coefficient is the ratio of the total amount of solar energy that passes through a glass relative to 1/8-inch (3.0mm) thick clear glass under the same design conditions. It includes both solar energy transmitted directly plus any absorbed solar energy re-radiated and convected. Lower shading coefficient values indicate better performance in reducing solar heat gain. Note: Performance values were calculated using the LBNL Window 5.2 program using NFRC 100-2001 standard winter and summer design condition.
- 6. Solar Heat Gain Coefficient (SHGC) represents the solar heat gain through the glass relative to the incident solar radiation. It is equal to 86% of the shading coefficient.
- 7. Light to Solar Gain (LSG) ratio is the ratio of visible light transmittance to solar heat gain coefficient.

Glass colors represented in this brochure are approximate and reflect the effects of ambient lighting conditions as well as the photographic and lithographic processes.

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