

## PPG Monolithic Glass Comparisons

Glass Thickness		Transmittance <sup>2</sup>			Reflectance <sup>2</sup>		(BTU/hr•ft <sup>2</sup> •F) NFRC U-Value <sup>4</sup>		U-Value <sup>5</sup> EN 673 (W/m <sup>2</sup> •K)	Shading Coefficient <sup>6</sup>	Solar Heat Gain Coefficient <sup>7</sup>	Light to Solar Gain (LSG) <sup>8</sup>
Inches	mm	Ultra- violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night- time	Summer Day- time				
<b>Uncoated</b>												
<b>STARPHIRE® Glass</b>												
3/16	5	88	91	90	8	8	1.03	0.93	5.78	1.04	0.90	1.01
1/4	6	87	91	89	8	8	1.02	0.93	5.75	1.03	0.90	1.01
5/16	8	86	91	88	8	8	1.01	0.91	5.68	1.02	0.89	1.02
3/8	10	85	91	87	8	8	1.00	0.91	5.63	1.02	0.89	1.02
1/2	12	83	90	86	8	8	0.98	0.89	5.53	1.01	0.88	1.03
5/8	16	81	90	84	8	8	0.97	0.88	5.43	1.00	0.87	1.03
3/4	19	80	90	83	8	7	0.95	0.86	5.34	0.99	0.86	1.04
1	25	77	89	80	8	7	0.92	0.84	5.16	0.97	0.84	1.06
<b>CLEAR Glass</b>												
3/16	5	69	89	79	9	7	1.03	0.93	5.78	0.96	0.83	1.07
1/4	6	66	89	77	9	7	1.02	0.93	5.75	0.94	0.81	1.09
5/16	8	61	88	72	8	7	1.01	0.91	5.68	0.90	0.78	1.12
3/8	10	58	87	69	8	7	1.00	0.91	5.63	0.88	0.76	1.14
1/2	12	53	85	64	8	6	0.98	0.89	5.53	0.84	0.72	1.18
5/8	16	48	84	59	8	6	0.97	0.88	5.43	0.80	0.69	1.22
3/4	19	46	83	55	8	6	0.95	0.86	5.34	0.77	0.67	1.24
1	25	40	80	48	8	6	0.92	0.84	5.16	0.72	0.62	1.29
<b>OPTIBLUE® Glass</b>												
1/4	6	44	64	64	6	6	1.02	0.93	5.75	0.84	0.72	0.89
<b>SOLEXIA™ Glass</b>												
3/16	5	35	80	52	8	6	1.03	0.93	5.78	0.75	0.64	1.24
1/4	6	31	77	47	8	6	1.02	0.93	5.75	0.71	0.61	1.26
<b>ATLANTICA™ Glass</b>												
3/16	5	20	71	39	7	5	1.03	0.93	5.78	0.65	0.56	1.27
1/4	6	16	67	34	7	5	1.02	0.93	5.75	0.61	0.52	1.29
<b>CARIBIA® Glass</b>												
3/16	5	28	71	37	7	5	1.03	0.93	5.78	0.63	0.54	1.32
1/4	6	24	68	32	7	5	1.02	0.93	5.75	0.60	0.51	1.33
<b>AZURIA™ Glass</b>												
3/16	5	46	72	36	7	5	1.03	0.93	5.78	0.62	0.54	1.33
1/4	6	42	68	32	7	5	1.02	0.93	5.75	0.59	0.51	1.34
5/16	8	35	61	26	6	5	1.01	0.91	5.68	0.55	0.47	1.30
3/8	10	31	57	23	6	5	1.00	0.91	5.63	0.53	0.45	1.26
<b>PACIFICA™ Glass</b>												
1/4	6	15	42	27	5	5	1.02	0.93	5.75	0.56	0.48	0.88
<b>SOLARBLUE™ Glass</b>												
1/4	6	31	56	47	6	5	1.02	0.93	5.75	0.71	0.61	0.92
<b>SOLARBRONZE® Glass</b>												
3/16	5	30	59	55	6	6	1.03	0.93	5.78	0.77	0.66	0.89
1/4	6	26	53	50	6	6	1.02	0.93	5.75	0.73	0.63	0.84
5/16	8	18	43	39	6	5	1.01	0.91	5.68	0.65	0.56	0.77
3/8	10	14	37	34	5	5	1.00	0.91	5.63	0.61	0.52	0.72
1/2	12	9	27	24	5	5	0.98	0.89	5.53	0.54	0.46	0.59
<b>SOLARGRAY® Glass</b>												
3/16	5	29	50	48	6	5	1.03	0.93	5.78	0.71	0.62	0.81
1/4	6	24	44	42	6	5	1.02	0.93	5.75	0.67	0.58	0.77
5/16	8	17	33	31	5	5	1.01	0.91	5.68	0.59	0.51	0.65
3/8	10	13	28	26	5	5	1.00	0.91	5.63	0.55	0.47	0.59
1/2	12	8	18	17	5	5	0.98	0.89	5.53	0.49	0.41	0.44
<b>OPTIGRAY® 23 Glass</b>												
1/4	6	8	23	19	5	5	1.02	0.93	5.75	0.50	0.42	0.55
<b>GRAYLITE II Glass</b>												
1/4	6	2	9	8	4	4	1.02	0.93	5.75	0.41	0.35	0.25

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).

Glass Thickness		Transmittance <sup>2</sup>			Reflectance <sup>2</sup>		(BTU/hr•ft <sup>2</sup> •F) NFRC U-Value <sup>4</sup>		U-Value <sup>5</sup> EN 673 (W/m <sup>2</sup> •K)	Shading Coefficient <sup>6</sup>	Solar Heat Gain Coefficient <sup>7</sup>	Light to Solar Gain (LSG) <sup>8</sup>
Inches	mm	Ultra- violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night- time	Summer Day- time				
<b>Coated</b>												
<b>VISTACOOL™ (2) AZURIA™ Glass</b>												
1/4	6	35	52	26	19	10	1.02	0.92	5.73	0.52	0.45	1.16
5/16	8	29	46	20	16	9	1.01	0.91	5.66	0.49	0.42	1.10
<b>VISTACOOL™ (2) CARIBIA™ Glass</b>												
1/4	6	20	52	26	19	9	1.02	0.92	5.73	0.53	0.45	1.15
5/16	8	14	46	20	16	8	1.01	0.91	5.66	0.49	0.42	1.09
<b>VISTACOOL™ (2) PACIFICA™ Glass</b>												
1/4	6	12	32	22	10	7	1.02	0.93	5.75	0.51	0.44	0.74
<b>VISTACOOL™ (2) SOLARGRAY® Glass</b>												
1/4	6	20	34	35	11	8	1.02	0.92	5.73	0.60	0.52	0.65
5/16	8	14	26	26	8	7	1.01	0.91	5.66	0.54	0.46	0.55
<b>SOLARCOOL® (1) SOLEXIA™ Glass</b>												
1/4	6	9	30	23	37	30	1.03	0.93	5.75	0.43	0.37	0.80
<b>SOLARCOOL® (2) SOLEXIA™ Glass</b>												
1/4	6	9	30	23	23	12	1.03	0.93	5.78	0.50	0.43	0.69
<b>SOLARCOOL® (1) CARIBIA® Glass</b>												
1/4	6	7	26	14	36	30	1.03	0.93	5.75	0.36	0.31	0.83
<b>SOLARCOOL® (2) CARIBIA® Glass</b>												
1/4	6	7	26	14	19	9	1.03	0.93	5.78	0.44	0.38	0.68
<b>SOLARCOOL® (1) AZURIA™ Glass</b>												
3/16	5	13	27	16	36	30	1.03	0.93	5.78	0.37	0.32	0.85
1/4	6	12	26	14	36	30	1.03	0.93	5.75	0.36	0.30	0.86
<b>SOLARCOOL® (2) AZURIA™ Glass</b>												
3/16	5	13	27	16	20	10	1.04	0.94	5.81	0.45	0.38	0.72
1/4	6	12	26	14	19	10	1.03	0.93	5.78	0.44	0.37	0.70
<b>SOLARCOOL® (1) PACIFICA™ Glass</b>												
1/4	6	4	16	13	36	30	1.02	0.93	5.75	0.35	0.30	0.53
<b>SOLARCOOL® (2) PACIFICA™ Glass</b>												
1/4	6	4	16	13	10	7	1.02	0.93	5.75	0.44	0.37	0.43
<b>SOLARCOOL® (1) SOLARBLUE™ Glass</b>												
1/4	6	9	21	24	36	30	1.02	0.93	5.75	0.44	0.38	0.57
<b>SOLARCOOL® (2) SOLARBLUE™ Glass</b>												
1/4	6	9	21	24	14	11	1.02	0.93	5.75	0.51	0.44	0.49
<b>SOLARCOOL® (1) SOLARBRONZE® Glass</b>												
1/4	6	7	21	27	36	30	1.03	0.93	5.75	0.46	0.40	0.52
<b>SOLARCOOL® (2) SOLARBRONZE® Glass</b>												
1/4	6	7	21	27	13	11	1.03	0.93	5.78	0.53	0.46	0.45
<b>SOLARCOOL® (1) SOLARGRAY® Glass</b>												
1/4	6	7	17	23	36	30	1.03	0.93	5.75	0.43	0.37	0.46
<b>SOLARCOOL® (2) SOLARGRAY® Glass</b>												
1/4	6	7	17	23	11	9	1.03	0.93	5.78	0.51	0.43	0.40
<b>SOLARCOOL® (1) GRAYLITE II Glass</b>												
1/4	6	<1	3	4	36	30	1.03	0.93	5.75	0.29	0.24	0.14
<b>SOLARCOOL® (2) GRAYLITE II Glass</b>												
1/4	6	<1	3	4	5	4	1.03	0.93	5.78	0.39	0.33	0.10

\* Performance data is based on representative samples of factory production. Actual values may vary slightly due to variations in the production process.

- Figures may vary due to manufacturing tolerances. All tabulated data is based on NFRC methodology using the LBNL's Window 5.2 software.
- Transmittance and reflectance values based on spectrophotometric measurements and energy distribution of solar radiation.
- Solar infrared transmittance between 800 and 2150 nm (Parry Moon AM 2 irradiance).
- 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. Winter nighttime U-values are calculated using an outdoor temperature of 89°F (32°C), outdoor air velocity of 15 mph (6.7 m/s), indoor air temperature of 70°F (21°C), outdoor air velocity of 15 mph (6.7 m/s), indoor air velocity of 0 mph (0 m/s) and a solar intensity of 0 BTU/hour/square foot (0 w/m<sup>2</sup>). Summer daytime U-values are calculated using an outdoor air temperature of 89°F (32°C), indoor air temperature of 75°F (24°C), outdoor air velocity of 7.5 mph (3.4 m/s), indoor air velocity of 0 mph (0 m/s), and a solar intensity of 248 BTU/hour/square foot (783 w/m<sup>2</sup>).
- European U-Value is the overall coefficient of heat transmittance or heat flow measured in Watts/m<sup>2</sup> • K and is calculated using WinDat WIS version 3.0.1 software.
- Shading Coefficient is the ratio of the total amount of solar energy that passes through a glass relative to 1/8-in. (3.0 mm) thick clear glass under the same design conditions. It includes both solar energy transmitted directly plus any absorbed solar energy re-radiated and converted. Lower shading coefficient values indicate better performance in reducing summer heat gain. Shading coefficients at outdoor air temperature of 89°F (32°C), outdoor air velocity of 7.5 mph (3.4 m/s), indoor air temperature of 75°F (24°C), indoor air velocity of 0 mph (0 m/s) and solar intensity of 248 BTU/hour/square foot (783 w/m<sup>2</sup>).
- 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.
- Light to Solar Gain (LSG) ratio is the ratio of visible light transmittance to solar heat gain coefficient.

One-inch insulating glass data and comparisons can be found at [www.ppgideasces.com](http://www.ppgideasces.com) or by calling the PPG Solutions Hotline at 1-888-774-4332.

For data on: Solargreen® Glass — see Atlantica™ Glass  
Solex® Glass — see Solexia™ Glass  
Azurite® Glass — see Azuria™ Glass

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