



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 ²			Exterior Reflectance ²		U-Value ³ (Imperial)		European U-Value ⁴	Shading Coeffi- cient ⁵	Solar Heat Gain Coeffi- cient ⁶	Light to Solar Gain (LSG) ⁷
			Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
Coated													
SOLARBAN® 70XL Solar Control Low-E Glass**													
		SOLARBAN 70XL (2) STARPHIRE + Clear	6	64	25	12	52	0.28	0.26	1.50	0.32	0.27	2.37
		SOLARBAN 70XL (2) SOLEXIA + Clear	3	55	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) SOLARBRONZE + Clear	2	38	14	7	19	0.28	0.26	1.50	0.23	0.20	1.88
		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) STARPHIRE	3	56	20	11	13	0.28	0.26	1.50	0.37	0.32	1.74
		ATLANTICA + SOLARBAN 70XL (3) STARPHIRE	2	49	17	10	8	0.28	0.26	1.50	0.32	0.28	1.74
		CARIBIA + SOLARBAN 70XL (3) STARPHIRE	2	49	17	9	8	0.28	0.26	1.50	0.32	0.28	1.75
		AZURIA + SOLARBAN 70XL (3) STARPHIRE	4	49	17	10	8	0.28	0.26	1.50	0.33	0.29	1.70
		Bronze + SOLARBAN 70XL (3) STARPHIRE	3	38	15	8	20	0.28	0.26	1.50	0.30	0.26	1.48
		Gray + SOLARBAN 70XL (3) STARPHIRE	2	32	13	7	15	0.28	0.26	1.50	0.27	0.24	1.34
		OPTIGRAY 23 + SOLARBAN 70XL (3) STARPHIRE	1	17	7	5	7	0.28	0.26	1.50	0.19	0.16	1.04
		GRAYLITE + SOLARBAN 70XL (3) STARPHIRE	1	10	5	5	11	0.28	0.26	1.50	0.16	0.14	0.71
VISTACOO™ Subtly Reflective Glass													
		VISTACOO (2) AZURIA + Clear	29	47	22	21	11	0.47	0.50	2.81	0.39	0.34	1.39
		VISTACOO (2) CARIBIA + Clear	16	47	22	21	10	0.47	0.50	2.81	0.39	0.34	1.38
		VISTACOO (2) SOLARGRAY + Clear	17	31	28	17	9	0.47	0.50	2.81	0.47	0.40	0.77
SOLARCOOL® Glass													
		SOLARCOOL (2) SOLEXIA + Clear	7	27	19	24	12	0.48	0.50	2.82	0.36	0.31	0.87
		SOLARCOOL (2) CARIBIA + Clear	6	24	12	19	9	0.48	0.50	2.82	0.30	0.25	0.94
		SOLARCOOL (2) AZURIA + Clear	10	24	12	20	10	0.48	0.50	2.82	0.29	0.25	0.95
		SOLARCOOL (2) Bronze + Clear	6	19	21	14	12	0.48	0.50	2.82	0.40	0.34	0.55
		SOLARCOOL (2) Gray + Clear	6	16	18	11	10	0.48	0.50	2.82	0.36	0.31	0.50
		SOLARCOOL (2) GRAYLITE + Clear	2	5	12	5	6	0.48	0.50	2.82	0.31	0.26	0.18
VISTACOO™ and SOLARCOOL® with SUNGATE® 500 Low-E (3)													
		VISTACOO (2) AZURIA + SUNGATE 500 (3) Clear	24	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.53
		VISTACOO (2) CARIBIA + SUNGATE 500 (3) Clear	14	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.51
		VISTACOO (2) SOLARGRAY + SUNGATE 500 (3) Clear	14	29	23	12	10	0.35	0.35	1.96	0.41	0.35	0.83
		SOLARCOOL (2) SOLEXIA + SUNGATE 500 (3) Clear	6	25	15	24	13	0.35	0.35	1.96	0.31	0.26	0.98
		SOLARCOOL (2) CARIBIA + SUNGATE 500 (3) Clear	5	22	10	19	10	0.35	0.35	1.96	0.24	0.20	1.11
		SOLARCOOL (2) AZURIA + SUNGATE 500 (3) Clear	8	22	10	20	10	0.35	0.35	1.96	0.23	0.20	1.11
		SOLARCOOL (2) Bronze + SUNGATE 500 (3) Clear	5	18	17	14	13	0.35	0.35	1.96	0.34	0.29	0.61
		SOLARCOOL (2) Gray + SUNGATE 500 (3) Clear	5	15	14	11	10	0.35	0.35	1.96	0.30	0.26	0.56
		SOLARCOOL (2) GRAYLITE + SUNGATE 500 (3) Clear	1	5	9	5	7	0.35	0.35	1.96	0.25	0.21	0.21
VISTACOO™ and SOLARCOOL® with SOLARBAN® 60 Solar Control Low-E (3)													
		VISTACOO (2) AZURIA + SOLARBAN 60 (3) Clear	11	42	16	20	11	0.29	0.27	1.55	0.30	0.26	1.61
		VISTACOO (2) CARIBIA + SOLARBAN 60 (3) Clear	7	42	16	20	11	0.29	0.27	1.55	0.29	0.25	1.66
		VISTACOO (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) 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) Bronze + SOLARBAN 60 (3) Clear	3	17	9	14	18	0.29	0.27	1.55	0.21	0.18	0.92
		SOLARCOOL (2) Gray + 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
VISTACOO™ Subtly Reflective, Color-Enriched Glass with SOLARBAN® z50 Solar Control Low-E													
		VISTACOO (2) AZURIA + SOLARBAN z50 (3) OPTIBLUE	9	30	12	20	11	0.29	0.27	1.55	0.29	0.25	1.20
		VISTACOO (2) CARIBIA + SOLARBAN z50 (3) OPTIBLUE	5	30	12	20	11	0.29	0.27	1.55	0.29	0.25	1.20
		VISTACOO (2) SOLARGRAY + SOLARBAN z50 (3) OPTIBLUE	5	20	11	11	15	0.29	0.27	1.55	0.27	0.24	0.82
VISTACOO™ and SOLARCOOL® with SOLARBAN® 70XL Solar Control Low-E (3)**													
		VISTACOO (2) AZURIA + SOLARBAN 70XL (3) STARPHIRE	4	38	14	21	12	0.28	0.26	1.50	0.27	0.24	1.59
		VISTACOO (2) CARIBIA + SOLARBAN 70XL (3) STARPHIRE	2	38	13	20	11	0.28	0.26	1.50	0.27	0.23	1.65
		VISTACOO (2) SOLARGRAY + SOLARBAN 70XL (3) STARPHIRE	2	25	10	11	17	0.28	0.26	1.50	0.23	0.20	1.24
		SOLARCOOL (2) SOLEXIA + SOLARBAN 70XL (3) STARPHIRE	1	22	8	24	16	0.28	0.26	1.50	0.20	0.17	1.28
		SOLARCOOL (2) CARIBIA + SOLARBAN 70XL (3) STARPHIRE	1	19	6	19	10	0.28	0.26	1.50	0.18	0.15	1.27
		SOLARCOOL (2) AZURIA + SOLARBAN 70XL (3) STARPHIRE	1	19	7	19	10	0.28	0.26	1.50	0.18	0.15	1.27
		SOLARCOOL (2) Bronze + SOLARBAN 70XL (3) STARPHIRE	1	15	6	14	19	0.28	0.26	1.50	0.17	0.15	1.01
		SOLARCOOL (2) Gray + SOLARBAN 70XL (3) STARPHIRE	1	13	5	11	15	0.28	0.26	1.50	0.16	0.14	0.89
		SOLARCOOL (2) GRAYLITE + SOLARBAN 70XL (3) STARPHIRE	< 1	4	2	5	10	0.28	0.26	1.50	0.12	0.10	0.39

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 ²			Exterior Reflectance ²		U-Value ³ (Imperial)		European U-Value ⁴	Shading Coefficient ⁵	Solar Heat Gain Coefficient ⁶	Light to Solar Gain (LSG) ⁷
			Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
Uncoated													
	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
	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
SUNGATE® 500 Low-E Glass													
	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
	Bronze + SUNGATE 500 (3) Clear		18	44	33	9	9	0.35	0.35	1.96	0.53	0.46	0.96
	Gray + 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
SOLARBAN® 60 Solar Control Low-E Glass													
	SOLARBAN 60 (2) STARPHIRE + STARPHIRE		25	74	38	11	42	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	7	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) 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
	Bronze + SOLARBAN 60 (3) Clear		8	42	20	7	17	0.29	0.27	1.55	0.36	0.31	1.36
	Gray + 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
SOLARBAN® 80 Solar Control Low-E Glass													
	SOLARBAN 80 (2) Clear + Clear		13	48	20	33	38	0.29	0.27	1.52	0.28	0.24	1.98
	SOLARBAN 80 (2) Clear + OPTIBLUE [†]		10	34	15	32	38	0.29	0.27	1.52	0.27	0.23	1.48
	SOLARBAN 80 (2) OPTIBLUE + Clear		9	34	15	19	28	0.29	0.27	1.52	0.23	0.20	1.70
	SOLARBAN 80 (2) OPTIBLUE + OPTIBLUE		7	25	11	19	28	0.29	0.27	1.52	0.23	0.20	1.23
SOLARBAN® z50 Solar Control Low-E Glass[†]													
	SOLARBAN z50 (2) OPTIBLUE + Clear		14	51	26	8	23	0.29	0.27	1.55	0.36	0.31	1.64
	SOLARBAN z50 (2) OPTIBLUE + OPTIBLUE		11	37	20	7	23	0.29	0.27	1.55	0.35	0.31	1.18
	AZURIA + SOLARBAN z50 (3) OPTIBLUE		10	39	16	8	7	0.29	0.27	1.55	0.35	0.30	1.31
	ATLANTICA + SOLARBAN z50 (3) OPTIBLUE		4	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.28
	CARIBIA + SOLARBAN z50 (3) OPTIBLUE		6	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.29
	SOLEXIA + SOLARBAN z50 (3) OPTIBLUE		8	44	19	10	11	0.29	0.27	1.55	0.41	0.35	1.26
	Bronze + SOLARBAN z50 (3) OPTIBLUE		7	30	16	7	17	0.29	0.27	1.55	0.35	0.31	0.98
	Gray + SOLARBAN z50 (3) OPTIBLUE		6	25	14	6	13	0.29	0.27	1.55	0.32	0.28	0.91

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

† Optiblue is a unique substrate by PPG designed specifically for Solarban z50. It can also be used for spandrel glass and as an interior lite for Solarban 80 glass.

†† Solarban 70XL requires the coating on Starphire glass.

- Figures may vary due to 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.
- Transmittance and Reflectance values are based on spectrophotometric measurements and energy distribution of solar radiation.
- U-Value is the overall coefficient of heat transmittance or heat flow measured in BTU/hr. • ft² • °F. Lower U-values indicate better insulating performance.
- European U-Value is the overall coefficient of heat transmittance or heat flow measured in Watts/m²•°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.

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