

PRODUCT DESCRIPTION

Optigray® glass by Vitro Architectural Glass is a soda-lime float glass product with an ultra-netural, warm light gray color. Optigray® glass was designed to complement Solarban® solar control low-e glasses by maximizing light transmittance and clarity, but can be used monolithically. In a 6mm thickness, Optigray® glass provides 63% visible light transmittance, with a solar heat gain coefficient of 0.65 for improved solar control. Optigray® glass mechanical and physical properties are similar to other soda-lime float glass products.

APPROXIMATE WEIGHTS

Per m ²		Per ft ²	
thickness	weight	thickness	weight
6.0 mm	14.2 kg	1/4	2.9 lbs

MECHANICAL PROPERTIES

Knoop Hardness Number (indentation hardness) indenter load--500 gm	470 kgf/mm ²	
Poisson's Ratio	0.22	
Modulus of Elasticity (Young's)	73.1 GPa	10,600,000 psi
Tensile Strength (Determined as Modulus of Rupture, ultimate)	41.4 MPa	6,000 psi
Density at 21°C (70°F)	2.51 g/cm ³	157 lb/ft ³

COLOR

	6.0mm
Transmitted Color: D65, 10° L*	83.4
a*	-1.5
b*	-0.1
Hue Angle (°)	185
Dominant wavelength: C, 2°	496 nm

THERMAL PROPERTIES

Hemispherical Emissivity at -18 to 66 °C (0 to 150°F) glass	0.84	
Expansion Coefficient (linear) 20 to 300°C (68 to 572°F)	8.7*10 ⁻⁶ / °C	4.9*10 ⁻⁶ / °F
Specific heat at 0 to 100°C (32 to 212°F)	858 J/kg-K	0.205 Btu/lb-°F
Thermal Conductivity (k) at 50°C (122°F)	0.937 W/m-K	0.542 Btu/hr-ft-°F
Softening Point	717°C	1323°F
Annealing Point	540°C	1004°F
Strain Point	498°C	928°F

CHEMICAL COMPOSITION

SiO ₂	73%
Na ₂ O	14%
CaO	9%
MgO and Trace elements	4%

SUSTAINABILITY

To provide architects with the assurance and documentation they need to meet and verify their sustainability goals, Vitro Architectural Glass participates in a range of programs and initiatives. Resources available include, but are not limited to:

- Type III Environmental Product Declarations
- Cradle to Cradle Certified™ Bronze with associated Gold Material Health Certificate
- LEED® and Living Building Challenge documentation
- Material Ingredient Disclosure and Safety Data Sheets
- Annual Corporate Sustainability Report

Further information is available through VitroGlazings.com or by calling 855-887-6457 (VTRO GLS)



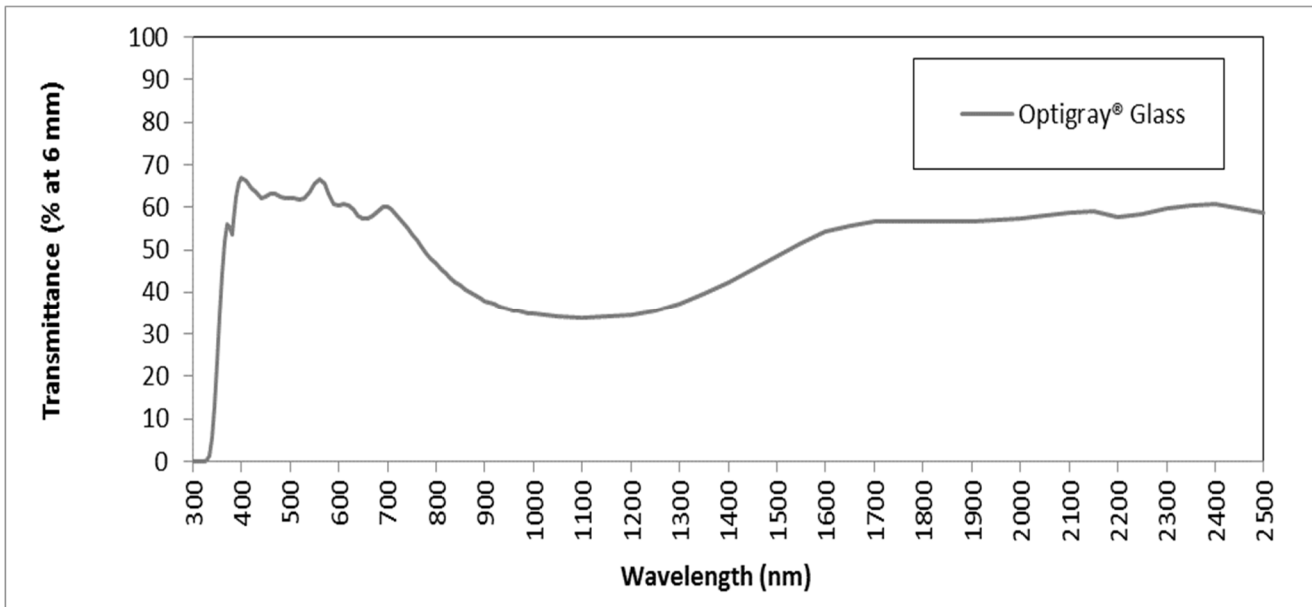
SOLAR PERFORMANCE VALUES COATED SURFACE ^[1]

Glass Thickness		Transmittance				Reflectance	
inches	mm	Ultra-violet (%)	Visible (%)	Infrared (%)	Total Solar (%)	Visible (%)	Total Solar (%)
1/4	6.0	33	63	42	51	6	6

^[1] Figures may vary due to manufacturing tolerances. All tabulated solar performance data are based on the methodology prescribed in ISO 9050, 2003 except Infrared, which is based on the solar irradiance data prescribed by ISO 9050, 2003 from 780 to 2500 nm. Slight changes in transmitted optical properties may occur on exposure to sunlight.

Transmittance (% at 6 mm/0.223")

Wavelength (nm)	Optigray® Glass %T	Wavelength (nm)	Optigray® Glass %T	Wavelength (nm)	Optigray® Glass %T	Wavelength (nm)	Optigray® Glass %T	Wavelength (nm)	Optigray® Glass %T
300	0.0	430	63.4	660	57.3	890	38.6	1600	54.1
305	0.0	440	62.3	670	57.9	900	38.0	1650	55.7
310	0.0	450	62.6	680	59.0	910	37.5	1700	56.5
315	0.0	460	63.1	690	60.0	920	37.1	1750	56.7
320	0.0	470	63.0	700	60.0	930	36.7	1800	56.7
325	0.0	480	62.6	710	59.4	940	36.3	1850	56.6
330	0.3	490	62.2	720	58.2	950	35.9	1900	56.8
335	1.5	500	62.2	730	56.8	960	35.6	1950	57.0
340	5.4	510	62.0	740	55.2	970	35.4	2000	57.4
345	12.8	520	62.0	750	53.8	980	35.1	2050	58.0
350	23.3	530	62.2	760	52.1	990	34.9	2100	58.7
355	34.5	540	63.5	770	50.7	1000	34.8	2150	59.1
360	44.5	550	65.5	780	49.3	1050	34.2	2200	57.8
365	51.9	560	66.5	790	47.9	1100	33.9	2250	58.3
370	55.9	570	65.5	800	46.7	1150	34.0	2300	59.7
375	55.4	580	63.0	810	45.5	1200	34.5	2350	60.5
380	53.6	590	60.8	820	44.4	1250	35.6	2400	60.6
385	57.1	600	60.6	830	43.3	1300	37.3	2450	59.7
390	62.3	610	60.6	840	42.4	1350	39.7	2500	58.8
395	65.7	620	60.3	850	41.5	1400	42.3		
400	67.0	630	59.3	860	40.5	1450	45.4		
410	66.2	640	58.1	870	39.8	1500	48.6		
420	64.5	650	57.3	880	39.2	1550	51.7		



ADDITIONAL INFORMATION/DOCUMENTS

The following documents can be referenced for additional information regarding Optigray® glass;
 Optigray® Performance Data, Vitro Float Glass Warranty, Vitro Float Glass SDS, C2C Material Health Certificate, Vitro Float Glass EPD