



CONSTRUCTION



ARCHITECTURE



# SUNGLAZE™

Solid Polycarbonate Standing Seam Architectural System



**SUNGLAZE™** Solid Polycarbonate Standing Seam Architectural System



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# Introduction

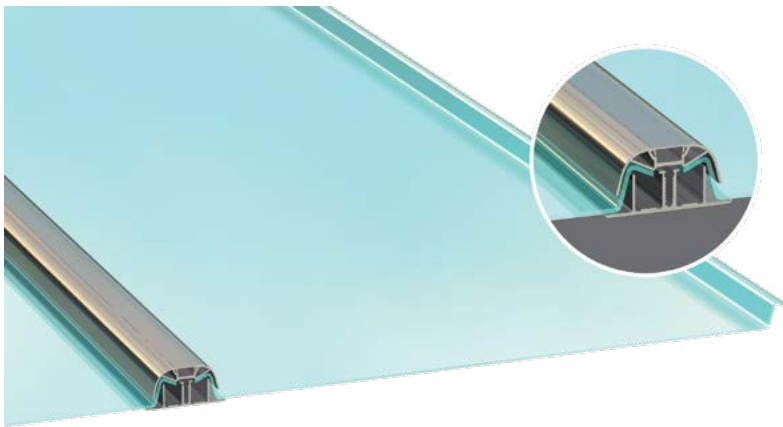
Sunglaze is an architectural system that offers smart design, elegant appearance, versatility, low maintenance and sustainable performance to various architectural challenges. Sunglaze incorporates proprietary standing-seam profiling and glazing that enable wide spans and high loading capacity. It can be specified in various lengths to match different structures, including flat and curved designs. Sunglaze is easy to fasten; the panels are simply joined by an aluminum profile set that is enclosed at the ends by end-closures. Screws lock the system and fix it to the structure without any penetration through the panels. The Cap-plug completes the assembly, covering the screw head and provides a smooth appearance from above.

## Main Benefits

- ✓ Clear and elegant appearance
- ✓ Standing seam leak-proof performance
- ✓ Free thermal expansion
- ✓ Caulking and silicone free
- ✓ Withstanding high loads
- ✓ Easy, fast and safe installation
- ✓ Minimal maintenance

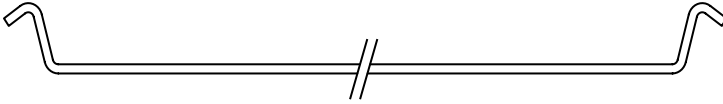
## Applications

- Architectural projects
- Commercial and retail
- Sports venues roofing
- Covered walkways
- Open markets
- Service stations
- Entrances
- Pool covers



# Panel Types

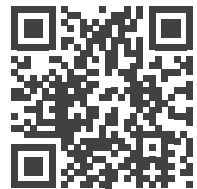
Sunglaze solid polycarbonate panels are offered in 3mm, 4mm and 6mm thickness. Panel width is determined by the system width, 600mm or 800mm. Maximum panel length is 11.9m (Typical stock length, equaling slightly more than 39 feet). Standard Sunglaze panels include UV protection on one side (UV protection on both sides is optional for special orders).






Property	SUNGLAZE™ 3/600	SUNGLAZE™ 4/600	SUNGLAZE™ 4/800	SUNGLAZE™ 6/800
Center to center width	600mm (23.625")	600mm (23.625")	800mm (31.5")	800mm (31.5")
Panel width	584mm (22.99")	585mm (23.03")	785mm (30.905")	785mm (30.905")
Height	20mm (0.787")	21mm (0.827")	21mm (0.827")	21mm (0.827")
Area weight	3.79 Kg/m <sup>2</sup> (0.776 lb/ft <sup>2</sup> )	5.05 Kg/m <sup>2</sup> (1.034 lb/ft <sup>2</sup> )	4.98 Kg/m <sup>2</sup> (1.02 lb/ft <sup>2</sup> )	7.453 Kg/m <sup>2</sup> (1.526 lb/ft <sup>2</sup> )
Linear meter weight	2.20 Kg/m (1.476 lb/ft)	2.94 Kg/m (1.972 lb/ft)	3.90 Kg/m (2.616 lb/ft)	5.96 Kg/m (3.997 lb/ft)
Min. cold bending radius* (For the polycarbonate panel)	4m (160")	4m (160")	4m (160")	4m (160")
System weight	6.14 Kg/m (4.118 lb/ft)	7.40 Kg/m (4.963 lb/f)	6.73 Kg/m (4.514 lb/ft)	9.25 Kg/m (6.204 lb/ft)

\* Sunglaze aluminum profiles must be roll formed separately to the desired radius, not below a minimum radius of 4m.

Scan for product  
video overview



# Colors

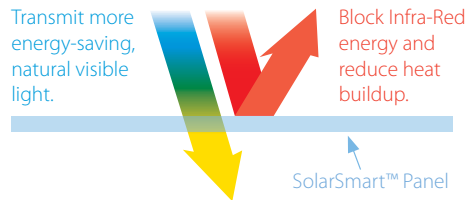
Color	% Light Transmission ASTM D-1003	%Haze ASTM D-1003	Solar Heat Gain (SHGC) ASTM E-424-71	Shading Coefficient ASTM E-424-71
 Clear	90	<1	0.87	1.00
	20	<1	0.45	0.52
 Bronze	35	<1	0.56	0.64
	50	<1	0.65	0.75
	20	<1	0.44	0.51
 Grey	35	<1	0.56	0.64
	50	<1	0.65	0.75
 White Opal	28	100	0.32	0.37
 White Diffuser	80	100	0.87	1.00
 Solar Ice	20	100	0.39	0.45
 Solar Control	20	67	0.33	0.36
	20	50	0.41	0.47
 Solar Olympic	35	35	0.52	0.60
	50	20	0.63	0.73
 Smart Green	70	26	0.58	0.67
 Smart Blue	50	26	0.57	0.65
 Bluish Breeze	70	1	0.55	0.63

Note: Other colors are available upon request, subject to a minimum quantity.



## SolarSmart™ Energetic Efficiency

SolarSmart™ are energy-efficient colors break the traditional ratio between light transmission and shading coefficient. SolarSmart™ panels block Infrared energy that causes heat buildup, and transmit “cool light” that reduces air-conditioning and lighting costs.



# Projects

Project: Hangzhou Airport, China | Architect: ZIAD

Application: Canopies - 1,900 sqm (20,500 sqft) | SUNGLAZE™ Type: Solar Olympic 4/800



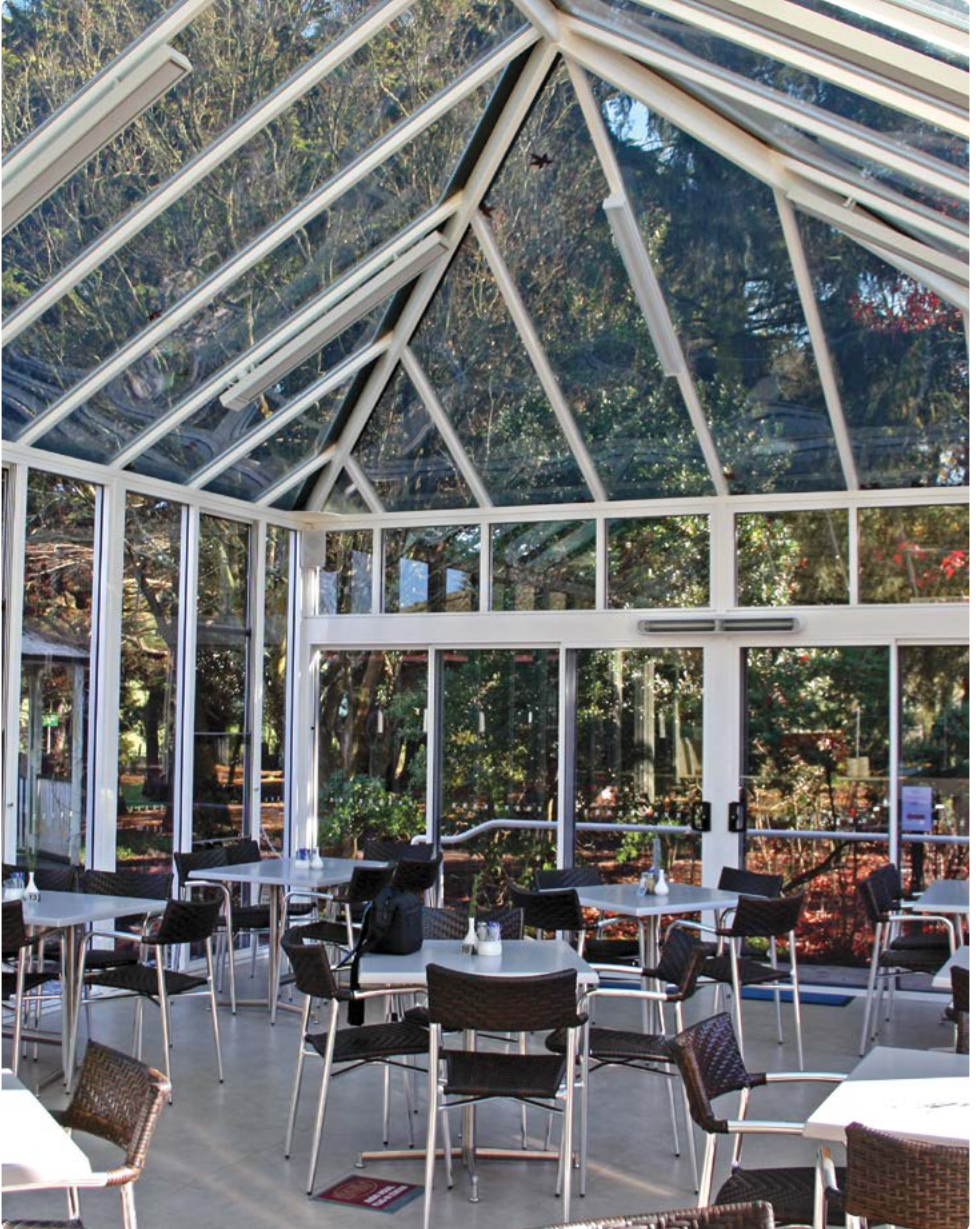
**Project:** Manufactura Outlet Village - Kiev, Ukraine  
**Application:** Skylight/Roof - 1,800 sqm (19,400 sqft) | **SUNGLAZE™ Type:** 4/800 Solar Grey





**Project:** Anvers Confectionery - Tasmania, Australia

**Application:** Roof and window glazing - 80 sqm (900 sqft) | **SUNGLAZE™ Type:** 4/800 Solar Grey



**Project:** Derby school - Kansas, USA

**Application:** Canopy - 150sqm (1600 sqft) | **SUNGLAZE™ Type:** 4/600 White Opal 28%



**Project:** Burnie Cheese Factory - Tasmania, Australia

**Application:** Industrial Sidelights | **SUNGLAZE™ Type:** 4/600 Clear



**Project:** The Barker Hotel, Australia  
**Application:** Pergola | **SUNGLAZE™ Type:** 4/600 Clear



**Project:** Private home, Israel  
**Application:** Pergola - 70 sqm (750 sqft) | **SUNGLAZE™ Type:** 3/600 Solar Control



# Typical Physical Properties

Property	Method**	Conditions	Units	Value
<b>Mechanical</b>				
Density	D-792		g/cm <sup>3</sup>	1.2
Tensile modulus of elasticity	D-638	1 mm/min (0.4 inch/min)	Mpa (psi)	2,300 (333,550)
Flexural strength	D-790	1 mm/min (0.4 inch/min)	Mpa (psi)	93 (13,500)
Flexural modulus	D-790	1.3 mm/min (0.5 inch/min)	Mpa (psi)	2,600 (377,100)
Notched impact strength Izod	D-256	23°C (73°F)	J/m	800
Impact falling dart	ISO 6603/1d	3mm sheet (0.125")	J	158
Impact - fall through	E-695		m/kg (ft/lbs)	336 (500)
Charpy Impact after Xenon Arc Exposure (D-6110)	D-2565-08	3000 hrs	% Loss of Impact Strength	<10
<b>Thermal</b>				
HDT (Heat Deflection Temperature)	D-648	Load: 1.82Mpa	°C (°F)	135
Vicat softening temperature	D-1525	Load: 1kg	°C (°F)	150
Service temperature - Short term			°C (°F)	-50 to 120 (-58 to 248)
Service temperature - Long term			°C (°F)	-50 to 100 (-58 to 212)
Coefficient of linear thermal expansion	D-696		cm/cm °C (Inch/Inch °F)	$6.5 \times 10^{-5}$ ( $3.6 \times 10^{-5}$ )
Thermal conductivity	C-177		W/m °K (Btu-in/hr-ft <sup>2</sup> °F)	0.21 (1.46)
Specific heat capacity	C-351		kJ/kg °K (Btu/lb °F)	1.3 (0.31)
<b>Weathering</b>				
Color change	D-2244	60 months	ΔE	<3
Yellowing index	E-313	60 months	Δ Yellowness Index	<10
Light transmission	D-1003	10 years	%	<6
<b>Leakage / Structural</b>				
Water leakage	E-283	20 psf		None
Air leakage	E-331	6.24 pfs (Condition of air leakage test)	cfm/ft <sup>2</sup>	0.05
Uniform load	E-330		psf	+140 / -45

\*Properties in the table relate to the polycarbonate glazing panels in the Sunglaze system.

\*\*ASTM method except where noted otherwise.

## Thermal Insulation

The attached table compares “U” values of glass and Sunglaze panels of equivalent thickness. For any given thickness, the “U” value of Sunglaze is lower than that of glass. This can result in a significant 6.5-9% reduction in energy expenditure both for heating in winter and air-conditioning during the summer time. Note that the use of SolarSmart™ panels will partially block heat generating infrared solar energy, which will further assist in reducing the air-conditioning costs during summer time.

Thickness (mm)	SUNGLAZE™ U Value W•m <sup>2</sup> •K (Btu / (hr•ft <sup>2</sup> •°F))	Glass U Value W•m <sup>2</sup> •K (Btu / (hr•ft <sup>2</sup> •°F))
3mm (0.125")	5.43 (0.96)	5.79 (1.02)
4mm (0.156")	5.29 (0.93)	5.76 (1.01)
6mm (0.236")	5.04 (0.89)	5.52 (0.97)

## Flammability

All flammability results for Sunglaze have been verified through 3rd party accredited testing agencies.

Test	ASTM Standard	Classification
Flammability	EN-13501	B, s1, d0
Self ignition	D-1929	628°C
Smoke density	D-2843	<75%
Burn extent	D-635	CC1
Flame spread / smoke	E-84	Class B

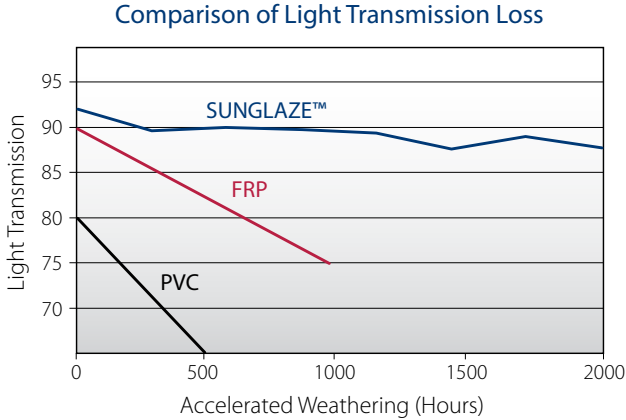
## Acoustic Properties

Sunglaze panels sound insulation properties are indicated in the table to the right. The attenuation of sound waves together with its impact resistance, has made Sunglaze a material of choice for cladding.

Thickness	Acoustic Insulation DIN 52210-75 RW (dB)
3mm (0.125")	23
4mm (0.156")	24
6mm (0.236")	26

# Resistance to UV Radiation

Palram polycarbonate panels retain their mechanical properties and transparency throughout a long time of external service due to Integrated co-extruded UV protection. The protection will not peel off over time. The attached graph presents typical results from Sunglaze panels tested under accelerated weathering (QUV exposure simulation) that is equivalent to 20 years of actual field exposure. The light transmission of Sunglaze was essentially stable.



# System Components

Component	Part No.	Drawing	Suppliance Data
Base	(4mm & 3) 0404 (6mm) 0406		Length: Up to 6m (236.22") Finish: Grey paint
Cap	(3mm) 0503 (4mm) 0504 (6mm) 0506		Length: Up to 6m (236.22") Finish: Grey paint
Cap Plug	06 (6mm & 4 ,3)		Length: Up to 6m (236.22") Finish: Grey paint
3mm (0.125") End Closure for SUNGLAZE 3/600	07		Quantity: 100 Units/Box Finish: Mill (Natural)
4mm (0.156") End Closure for SUNGLAZE 4/600 and 4/800	08		Quantity: 100 Units/Box Finish: Mill (Natural)
6mm (0.25") End Closure for SUNGLAZE 6/800	09		Quantity: 100 Pcs/Box Finish: Mill (Natural)
Galvanized Steel Fixing Screw Pan cross head self-drilling screw 4.8x19mm (#10x3/4")	10		Quantity: 500 Units/Box
Galvanized Steel Locking Screw Pan cross head tapping screw 5.5x19mm (#12x3/4")	11 (3, 4 mm)		Quantity: 500 Units/Box
Galvanized Steel Locking Screw Pan cross head tapping screw 5.5x25mm (#12x1")	12 (mm 6)		Quantity: 500 Pcs/Box

# Manufacturer's Lifetime Warranty

Sunglaze panels are guaranteed for water leak-proof performance for 25 years. Sunglaze panels bear a limited lifetime warranty not to lose more than 6% of light transmission for 10 years and no more than 1% per year thereafter, when measured according to ASTM D1003-77 standard. Sunglaze panels are warranted for up to 10 years from the date of purchase not to break or fail as a result of impact by hail measuring up to 20mm (0.78") in diameter, in speed of up to 21 m/s (69 ft/sec).

**Note:** these warranties will apply only if the panels are installed and maintained according to Palram specifications and installation instructions.



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