PALRAM

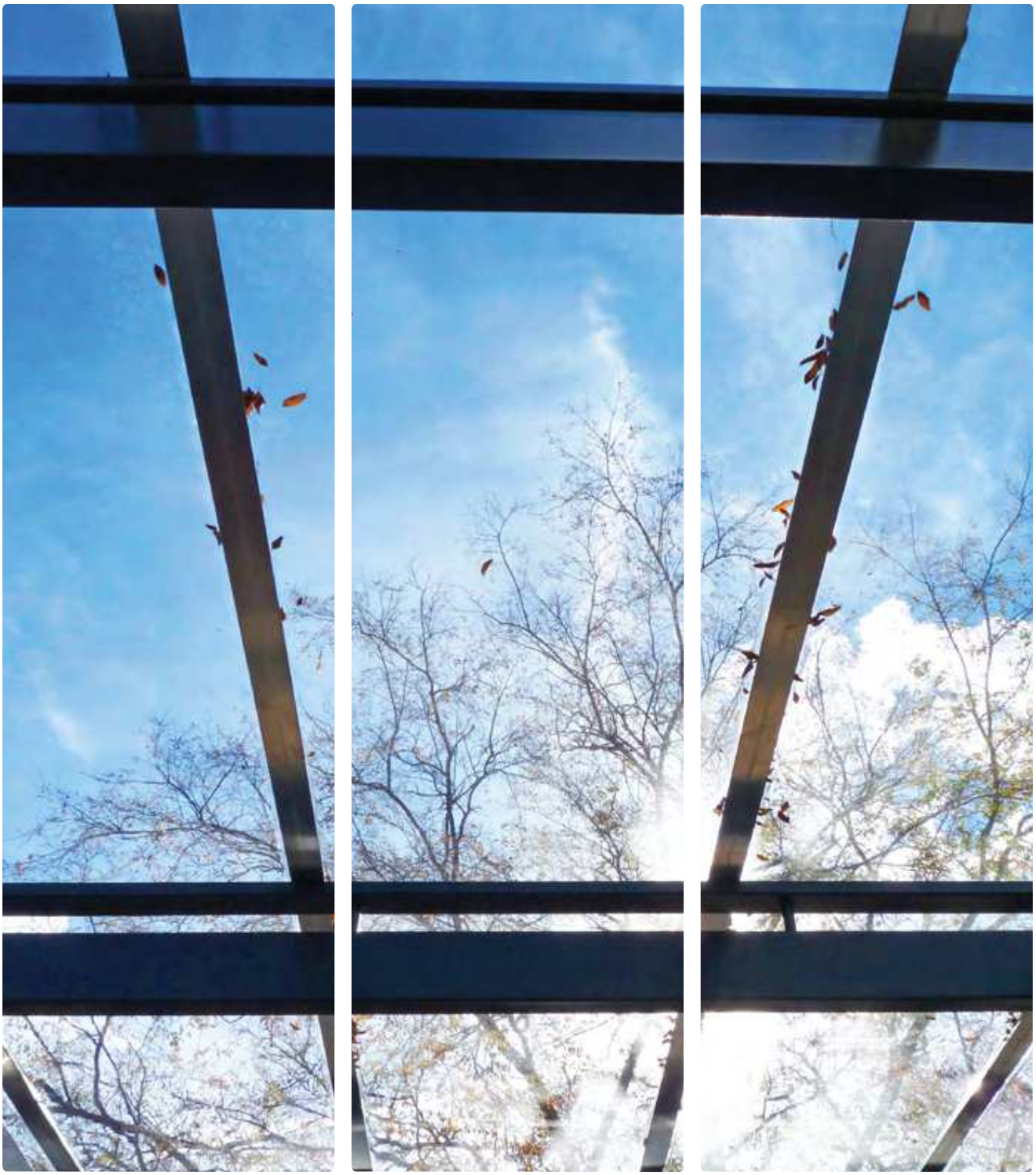
CONSTRUCTION ARCHITECTURE

SUNGLAZE™

Solid Polycarbonate Standing Seam Architectural System

Build On.

SUNGLAZE™ Solid Polycarbonate Standing Seam Architectural System



Content

Introduction

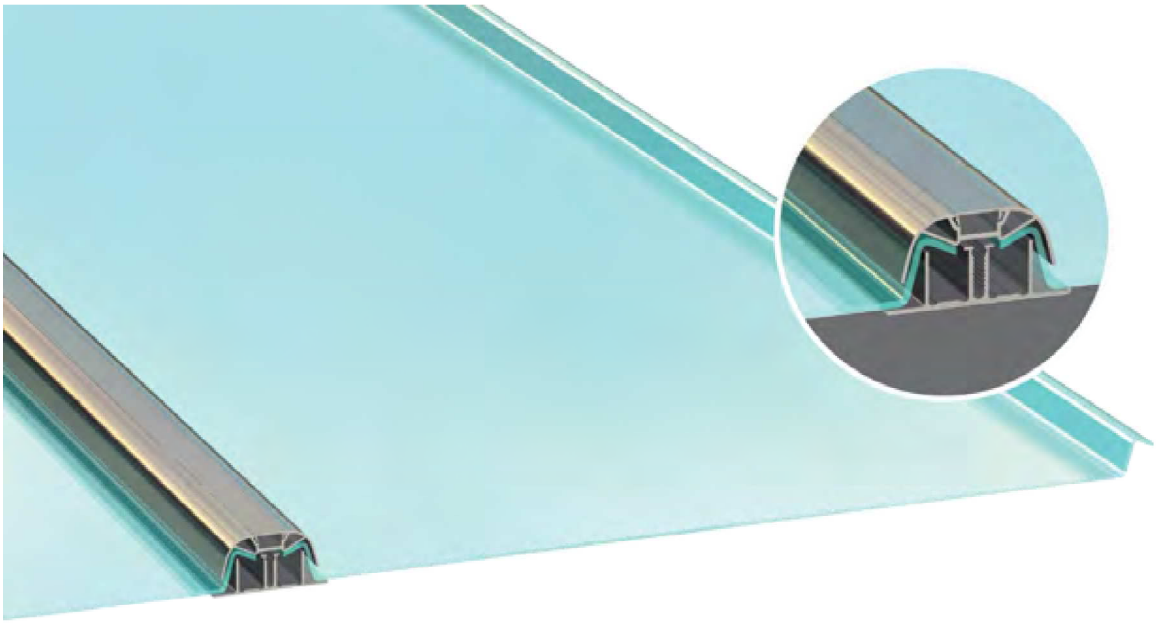
SUNGLAZE is an architectural system that offers smart design, elegant appearance, versatility, low maintenance and sustainable performance to various architectural challenges. SUNGLAZE incorporates proprietary standing-seam profiling and glazing that enable wide spans and high loading capacity. It can 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

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

Applications

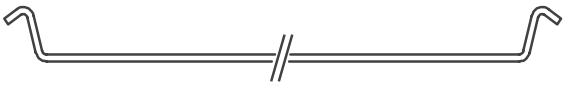
- Architectural projects
- Commercial and retail
- Sports venues roofing
- Covered walkways
- Open markets
- Service stations
- Entrances
- Pool covers



Scan for product video overview

Panel Types

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



SUNGLAZE™ 3/600	SUNGLAZE™ 4/600	SUNGLAZE™ 4/800
Width: 584mm (600mm system)	Width: 585mm (600mm system)	Width: 785mm (800mm system)
Height: 20mm	Height: 21mm	Height: 21mm
Weight: 3.79 Kg/m^2, (2.20 Kg/m)	Weight: 5.05 Kg/m^2, (2.94 Kg/m)	Weight: 4.98 Kg/m^2, (3.90 Kg/m)
Min. cold bending radius: 4m	Min. cold bending radius: 4m	Min. cold bending radius: 4m
System weight: 6.14 Kg/m	System weight: 7.40 Kg/m	System weight: 6.73 Kg/m

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
Bronze	20	<1	0.45	0.52
	35	<1	0.56	0.64
	50	<1	0.65	075
Solar Grey	20	<1	0.44	0.51
	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
Solar Olympic	20	50	0.41	0.47
	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

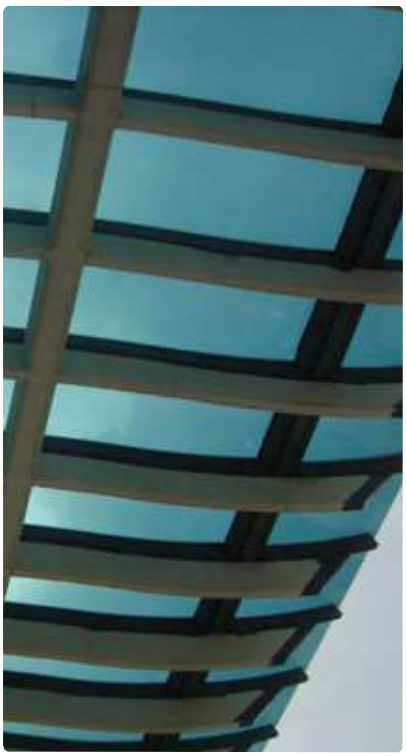
Note: Special color matches are available upon request, subject to minimum quantity.

SolarSmart™ - Energy Efficiency

SolarSmart™ products have "smart" tints that break the traditional ratio between light transmission and shading coefficient. They transmit "cool-light" by blocking Infrared energy that causes heat buildup, reduce air-conditioning costs and create a more comfortable ambience required in closed populated spaces.

SUNGLAZE™ Projects

Project: Hangzhou Airport, China | **Architect:** ZIAD | **Application:** Canopies - 1,900 sqm | **SUNGLAZE™ Type:** Solar Olympic 4mm



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

Project: The Lounge Bar, Melbourne / Australia | **Application:** Canopy | **SUNGLAZE™ Type:** Clear 3mm

Project: Private home, Point Cook - Australia | **Application:** Pergola | **SUNGLAZE™ Type:** Clear 3mm

Project: Residential Pergola, Israel | **Application:** Residential Pergola | **SUNGLAZE™ Type:** Solar Control 3mm

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 infra-red solar energy, which will further assist in reducing the air-conditioning costs during summer time.

Thickness (mm)	SUNGLAZE™ U Value ($W \cdot m^2 \cdot K$)	Glass U Value ($W \cdot m^2 \cdot K$)
3	5.43	5.79
4	5.29	5.76

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

Typical Physical Properties

Property	Method**	Conditions	Units	Value
Mechanical				
Density	D-792		g/cm^3	1.2
Tensile modulus of elasticity	D-638	1 mm/min	Mpa	2,300
Flexural strength	D-790	1 mm/min	Mpa	93
Flexural modulus	D-790	1.3 mm/min	Mpa	2,600
Notched impact strength Izod	D-256	23°C	J/m	800
Impact falling dart	ISO 6603/1d	3mm	J	158
Impact - fall through	E-695		m/kg	336
Charpy Impact after Xenon Arc Exposure (D-6110)	D-2565-08	3000 hrs	% Loss of Impact Strength	<10
Thermal				
HDT (Heat Deflection Temperature)	D-648	Load: 1.82Mpa	°C	135
Vicat softening temperature	D-1525	Load: 1kg	°C	150
Service temperature - Short term			°C	-50 to 120
Service temperature - Long term			°C	-50 to 100
Coefficient of linear thermal expansion	D-696		cm/cm °C	6.5×10^{-5}
Thermal conductivity	C-177		W/m °K	0.21
Specific heat capacity	C-351		kJ/kg °K	1.3
Weathering				
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
Leakage / Structural				
Water leakage	E-283	20 psf		none
Air leakage	E-331		cfm/ft^2	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.

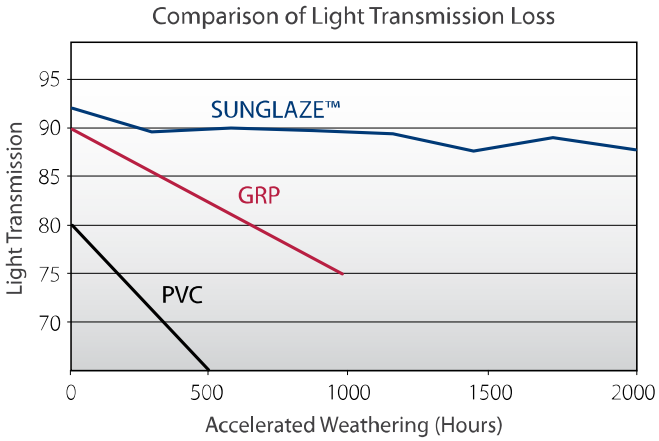
Acoustic Properties

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)
4mm	23
3mm	24

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. SUNGLAZE is offered with upper-side UV protection as standard, althought a UV2 version with protection on both sides is available upon request. 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.



Chemical Characteristics

To obtain a wide listing of Palram's polycarbonate sheets resistance to chemical agents please visit the Palram Americas website at www.palramamericas.com or contact your Palram distributor.

System Principles

SUNGLAZE system components fit all panel types, except end closures 07, 08.

Glazing Set

Base Cap Cap Plug

The Base is 65mm wide by 21mm high, mill-finished extruded aluminum profile. Its maximum length is 6m. The Base is the lower part of the glazing set, placed under the panels and fixed to the structure by the Fixing screws.
The Cap is 53mm wide and 23mm high, mill-finished extruded aluminum profile. Its maximum length is 6m. The Cap is the upper profile of the glazing assembly, positioned onto the panel edges and Base, and attached to the Base by the Locking screws.
The Cap-Plug is 19.5mm wide aluminum strip mill-finished. Its maximum length is 6m. The Plug is clicked into place onto the Cap, concealing the Locking screws from the top, and providing a smooth surface.

Screws

Locking Screw Fixing Screw

The fixing screw is a cross-head self drilling screw, 4.8x19mm (10x0.75"). These screws fix the Base to the structure.
The locking screw is a cross-head tapping screw, 5.5x19mm (12x0.75"). These screws attach the Cap onto the Base and panel edges.

End Closure

These are mill-finished aluminum plates that plug the two ends of the profiles assembly.
3mm End Closure is used for 3/600 panel assembly.
4mm End Closure is used for 4/600 panel and 4/800 panel assembly.