

GLAZING

OPERATIONAL FUNCTIONS

To meet the requirements of architects and regulations

SKYDÔME offers a wide choice of fillings.



SKYDÔME

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	Type de glazing	Heat transfer coefficient Ug (W/m ² .K)	TL D65 ⁽²⁾	FS ou g ⁽²⁾	Reaction to fire	R_w $R_A = R_w + C$ $R_{A,fr} = R_w + C_{fr}$ (dB) ⁽³⁾	L _{ia} (dB) ⁽⁴⁾
		U _{hor} ⁽¹⁾					
PCA 10	Transparent - 4 wall PCA 10	2,9	68%	65%	B-s1-d0	Rw = 19 dB	ND
	Opal - 4 wall PCA 10	2,9	61%	61%	B-s1-d0	Rw = 19 dB	ND
	Opal IR - 4 wall PCA 10	2,7	47%	51%	B-s1-d0	Rw = 17 dB	ND
	Pca10 - 4 parois gris	2,5	0%	0,9	B-s1-d0	Rw = 17 dB	ND
	Pca10 with transparent aéroge ™ lumira	ND	ND	ND	ND	ND	ND
	Pca10 with opal Lumira™ Aéroge	ND	ND	ND	ND	ND	ND
PCA 16	Transparent multi-wall PCA 16	1.9	55%	53%	B-s1-d0	Rw = 21 dB	ND
	Opal multi-wall PCA 16	1.9	45%	46%	B-s1-d0	Rw = 21 dB	ND
	Opal confort multi-wall PCA 16	2	50%	PND	B-s1-d0	ND	ND
	Aluminium grey multi-wall PCA 16	2	0%	55%	B-s2-d0	ND	ND
	Opal IR control multi-wall PCA 16	2	42%	43%	B-s2-d0	ND	ND
	PCA 16 with transparent Lumira™ Aéroge	1,5	67%	67%	B-s1-d0	ND	ND
	PCA 16 with opal Lumira™ Aéroge	1,5	57%	56%	B-s1-d0	ND	ND
PCA 20	Transparent multi-wall PCA 20	1.6	64%	51%	B-s1-d0	Rw = 21 dB	ND
	Opal multi-wall PCA 20	1.6	54%	47%	B-s2-d0	Rw = 21 dB	ND
PCA 32	Opal multi-wall PCA 32 (2 sheets of transparent PCA 16)	1,17	37%	38%	ND	ND	ND
	Transparent - 7 wall PCA 32	1,3	33%	49%	B-s2-d0	ND	ND
	Aluminium grey multi-wall PCA 32	1,45	0%	ND	B-s2-d0	ND	ND
	Pca32 aéroge lumira™ 50% - Transparent multi-wall	0,97	43%	45%	PND	ND	ND
PCA + DÔME	Transparent PCA 32 & solid PC single dome	0,8	ND	ND	ND	ND	ND
	Opal PCA 32 a solid PC single dome	0,8	ND	ND	ND	ND	ND
	Transparent PCA 32* & solid PC single dome	ND	ND	ND	ND	ND	ND
ACOUSTIK' LIGHT	Transparent PC 10 & transparent PCP 6	2,1	ND	ND	ND	Rw = 27 dB	ND

MAIN ADVANTAGES OF LUMIRA™ AEROGEL

+ Unmatched thermal insulation

Ug = 0.8 W/m2K for a 32 mm wall

+ Diffuse light

LUMIRA™ aerogel by SKYDÔME® absorbs external light and redistributes uniform light inside without direct radiation, reducing glare, areas of directional light and cast shadows.

+ Excellent light transmission

+ Minimal heat transmission

LUMIRA™ aerogel by SKYDÔME® provides maximum thermal protection by reducing heat loss and improving the solar factor. The thermal efficiency of buildings achieved with Lumira aerogel by SKYDÔME® is 4,5 times higher than that of buildings using standard window products.

+ Moisture resistant

Lumira™ aerogel by SKYDÔME® is hydrophobic, water-repellent and resistant to moisture and the development of mould inside the cells.

+ UV resistant

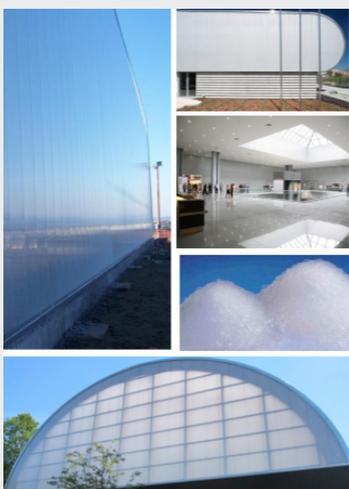
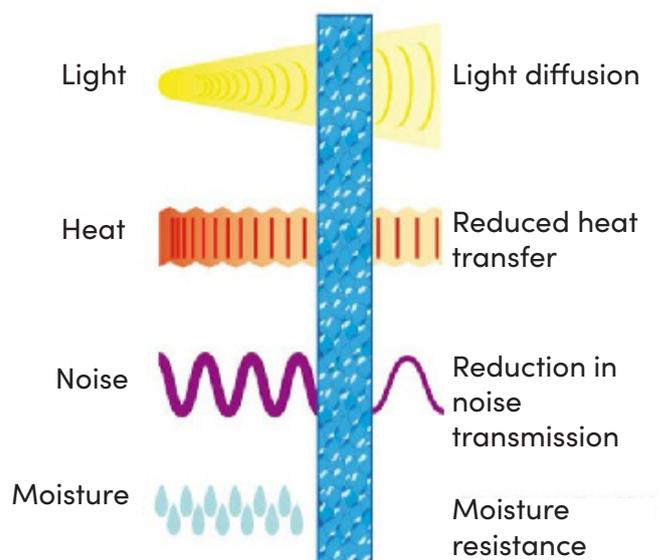
It's particles do not yellow or lose their light transmission and thermal properties due to ageing.

+ Energy savings generated

By improving light diffusion and reducing heat loss, Lumira™ aerogel by SKYDÔME® limits the need to use artificial light, heating, ventilation and air conditioning.

+ Integration into all architectural projects

It can be used on all types of construction and buildings, both for roofs and facades, allowing aesthetics and functionality to be combined in the building and giving a certain degree of architectural freedom in design.



What is Lumira™ Aerogel ?

LUMIRA™ Aerogel par SKYDÔME® is a new material combining a high light transmittance value with excellent insulation and energy performance properties. Incorporated in the SKYDÔME® arches, skylights, cladding and glass roofs, LUMIRATM technology boosts the thermal and acoustic properties of skylights, minimises heat loss, diffuses uniform light and reduce the solar factor.



DOMES

Type of glazing	Heat transfer coefficient Ug (W/m ² .K)	TL D65 ⁽²⁾	FS ou g ⁽²⁾	Reaction to fire	R_w $R_{A} = R_w + C$ $R_{A,fr} = R_w + C_{fr}$ (dB) ⁽³⁾	Lia (dB) ⁽⁴⁾
	U _{hor} ⁽¹⁾					
Transparent PMMA single dome	6.38	91%	92%	B-s1-d0	ND	ND
Simple dôme PMMA opale	6.38	91%	92%	B-s1-d0	ND	ND
Transparent PMMA double dome	6.38	91%	92%	B-s1-d0	ND	ND
Opal solid PC single dome	6.38	91%	92%	B-s1-d0	ND	ND
Transparent PMMA double dome <i>(Transp. upper dome + trans. lower dome)</i>	2.89	84%	ND	D-s3-d2	ND	ND
Opal PMMA double dome <i>(Opal upper dome + trans. lower dome)</i>	2.89	84%	ND	D-s3-d2	ND	ND
Solid PC double dome <i>(Opal PMMA PC upper dome + trans. solid PC lower dome)</i>	2.89	66%	ND	B-s1-d0	ND	ND
Double dôme <i>(Opal PMMA upper dome + trans. solid PC lower dome)</i>	2.89	ND	ND	D-S3-d2	ND	ND
Opal PMMA triple dome <i>(Opal PMMA upper dome + transp. PMMA int. dome + trans. PMMA lower dome)</i>	2.76	ND	ND	D-s3-d2	ND	ND
Opal solid PC triple dome <i>(Opal PMMA PC upper dome + trans. solid PC int. dome + trans. solid PC lower dome)</i>	2.76	ND	ND	B-s1-d0	ND	ND

⁽¹⁾ According to §2.31 of the Th-Bat rules.

⁽²⁾ Regular light transmittance TL D65 and total solar transmittance factor FS (TST or g) according to EN 410.

⁽³⁾ Glazing insulation to airborne noise R_w, pink noise RA (neighbourhood, airport and industrial activities), and road noise RA, Tr measured in the laboratory according to NF EN ISO 140.

⁽⁴⁾ The system's noise reduction indexes R and sound intensity levels LIA generated by rain measured in the laboratory according to NF EN ISO 140.

Choice of colours (by request)



CHOICE OF DOMES

Dropped edge dome



Dropped edge pyramid dome



Dropped edge circular dome



Flat edge dome



Flat edge pyramid dome



Dimensions (cm)	Opal PMMA triple dome	Opal PMMA double dome		Transparent PMMA double dome		Opal double dome		Opal solid PC double dome		Opal PMMA pyramid double dome		Opal circular dome
	Flat edges	Flat edges	Dropped edges	Flat edges	Dropped edges	Flat edges	Dropped edges	Flat edges	Dropped edges	Flat edges	Dropped edges	Drpped edges
40 x 40			✓				✓	✓	✓			
50 x 50	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
60 x 60		✓	✓			✓	✓	✓	✓			
72 x 72		✓	✓			✓	✓	✓	✓			
75 x 75	✓		✓				✓		✓	✓	✓	
80 x 80	✓	✓	✓			✓	✓	✓	✓	✓		✓
85 x 85	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
90 x 90	✓	✓	✓			✓	✓	✓	✓	✓		
100 x 100	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
110 x 110	✓	✓	✓			✓	✓	✓	✓	✓	✓	
115 x 115			✓				✓		✓			
120 x 120	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
130 x 130	✓	✓	✓			✓	✓	✓	✓	✓	✓	
140 x 140	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
150 x 150	✓	✓	✓	✓						✓		
160 x 160	✓	✓	✓	✓						✓		✓
180 x 180	✓	✓	✓	✓						✓	✓	✓
200 x 200	✓	✓		✓						✓		
50 x 100		✓	✓			✓	✓	✓	✓			
70 x 100	✓	✓	✓			✓	✓	✓	✓	✓		
100 x 140	✓	✓	✓	✓		✓	✓	✓	✓	✓		
100 x 150	✓	✓	✓	✓		✓	✓	✓	✓	✓		
100 x 200	✓	✓		✓						✓		
120 x 150		✓	✓			✓	✓	✓	✓			
120 x 160		✓	✓			✓	✓	✓	✓			
120 x 180		✓				✓		✓				
120 x 200	✓	✓										
120 x 240		✓										
140 x 200	✓											

✓ : Available

ALUMINIUM COVER

Cover	Type of glazing	Heat transfer coefficient Ug (W/m ² .K)	TL D65 ⁽²⁾	FS ou g ⁽²⁾	Reaction to fire	R_w $R_A = R_w + C$ $R_{A,tr} = R_w + C_{tr}$ (dB) ⁽³⁾	Lia (dB) ⁽⁴⁾
		U_{hor} ⁽¹⁾					
	40 mm aluminium cover	0.85	0%	ND	ND	ND	ND

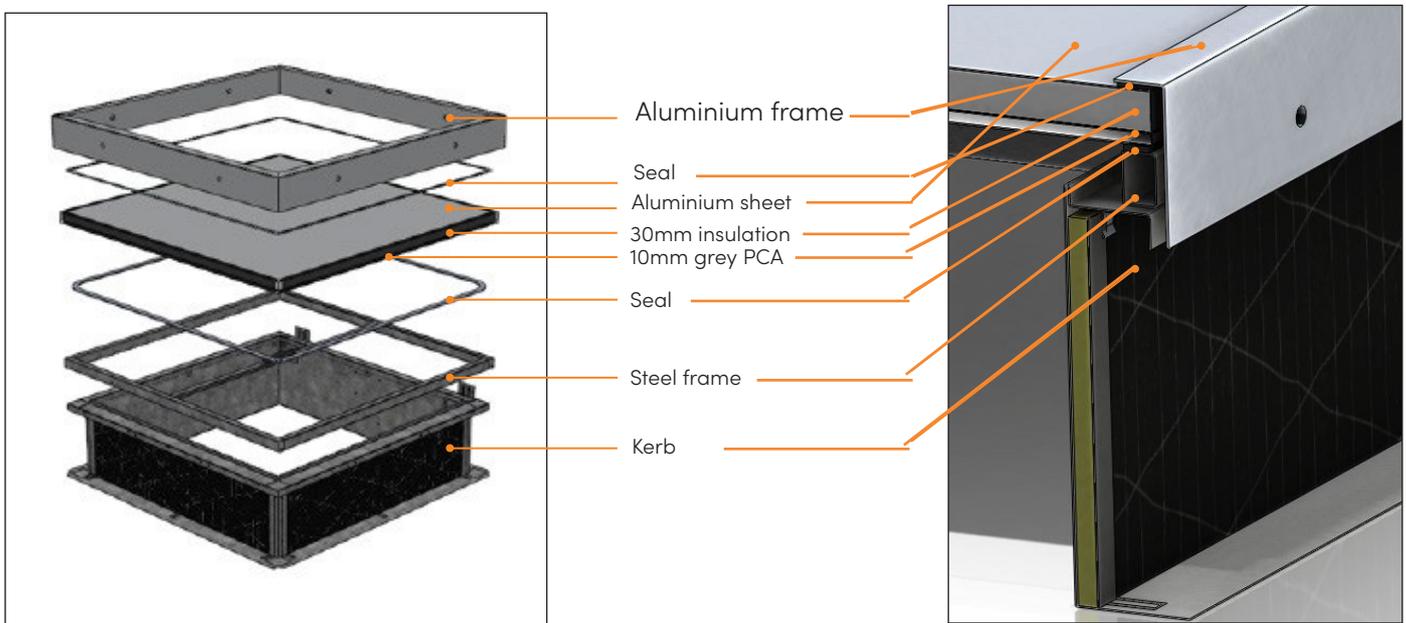
⁽¹⁾ According to §2.31 of the Th-Bat rules.

⁽²⁾ Regular light transmittance TL D65 and total solar transmittance factor FS (TST or g) according to EN 410.

⁽³⁾ Glazing insulation to airborne noise R_w , pink noise RA (neighbourhood, airport and industrial activities), and road noise RA, Tr measured in the laboratory according to NF EN ISO 140.

⁽⁴⁾ The system's noise reduction indexes R and sound intensity levels LIA generated by rain measured in the laboratory according to NF EN ISO 140.

Components of the 40 mm aluminium cover



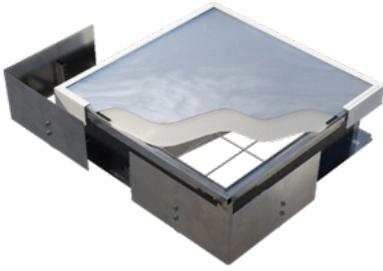
The 40 mm aluminium cover is composed of :

- an aluminium frame
- a seal between the frame and the glazing
- assembled glazing composed of :
 - an aluminium sheet
 - 30 mm insulation
 - a sheet of 10 mm grey structured polycarbonate
- a seal between the glazing and the frame

The total thickness is 40 mm ± 5%.

The aluminium cover adapts to the devices in our thermal insulation range : contact us

Hail-resistant complex



Our complex is made up of a solid 3mm polycarbonate infill that is directly impacted, and an annexed honeycomb polycarbonate infill of between 10 and 32 mm on the underside. The two polycarbonate infills are joined by a special SKYDÔME reinforced structure to resist hail.

There are 5 classes of Hail Resistance (HR); hail resistance is determined by the diameter of the projectile.

RG		Diameter	Weight		Speed	Energy class	
		[mm]	[g] min.	[g] max.	[m/s]	[J] min.	[J] max.
RG1	Very low	10	0.43	0.51	13.77	0.04	0.09
RG2	Low	20	3.46	4.04	19.48	0.69	1
RG3	Medium	30	11.68	13.65	23.85	3.5	4.4
RG4	High	40	27.7	32.35	27.54	11.1	13.2
RG5	Very high	50	54.09	63.18	30.79	27	31.5

Polycarbonate sheets are tested for 'Waterproofing', 'Translucency' and 'Appearance'.

Functioning of the component	Hail resistance class
Waterproofing	RG5
Translucency	RG5
Aspect	RG4

SUN SCREEN

The sun screen is an innovative system made of perforated aluminium, combined with the cellular polycarbonate (PCA) glazing of Skydôme skylights. Positioned on the outside of the glazing, it provides effective solar protection for controlled natural lighting (light transmission factor 16% compared with 34% for the PCA infill).

It can also be fitted to ARCADE vaults and translucent covers for rooflights and smoke vents (see the dimensional availability tables for each range on page 3): in this case, it is factory-fitted and requires no additional work on site. Made from extruded aluminium or lacquered by us, it is impervious to corrosion.



Our solar protection solution complies perfectly with Thermal Regulations:

- Our solution avoids the discomforts of glare and overheating.
- The sunlight transmitted through the outlet is greatly reduced by the sun screen screen.
- The energy transmission factor is 16%. (Test carried out at the Centre Scientifique et Technique du Bâtiment (CSTB) in compliance with standard NF 13363);

SOLAR TRANSMISSION AND REFLECTION OF THE PCA WALL + BRISE SOLEIL SCREEN

Energy transmission factor	Light transmission factor
0.16	0.16

- Temperature measurements on the inside wall showed a 4°C reduction in the heating of the polycarbonate in the presence of the Brise Soleil screen.

	Inside wall temperature
Without screen Sunshade	36°C
With touch screen	32°C

It reduces energy consumption for cooling production by reducing the heat input to the roof (air-conditioned building).

- It is an asset for buildings wishing to adopt the High Environmental Quality (HEQ®) approach.
- It is perfectly discreet and blends in with the geometry of the skylights.
- It does not catch the wind and does not cause noise through vibration or whistling.
- It does not retain leaves or plant waste.

	Energy transmission	Light transmission
SOLAR TRANSMISSION AND REFLECTION OF THE PCA WALL + SUN SCREEN		
Reference illuminance	482W/m ²	68600lux
Transmitted illuminance	78W/m ²	10800lux
Transmission factor	0.16	0.16
Reference illuminance	577W/m ²	.
Reflected illuminance	132W/m ²	.
Reflection factor	0.23	.
SOLAR TRANSMISSION AND REFLECTION OF THE PCA WALL		
Reference illuminance	495W/m ²	71300lux
Transmitted illuminance	172W/m ²	24100lux
Transmission factor	0.35	0.34
Reference illuminance	577W	.
Reflected illuminance	97W/m ²	.
Reflection factor	0.17	0



SUNSHADE AVAILABILITY ACCORDING TO DIMENSIONS AND POLYCARBONATE INFILLS

> Pyrodôme Évolution Pneumatique and Rooflam Évolution Pneumatique

Width mm	Length mm	Origin range		Thermik range								
		Sun screen in PCA10		Sun screen in PCA16		Sun screen in PCA16+		Sun screen in PCA32		Sun screen in PCA32+		
		SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	
1000	1000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1000	1500	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
1000	2000	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
1100	1100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1200	1200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1200	2000	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
1200	2500	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
1300	1300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1400	1400	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1400	2000	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
1500	1500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1600	1600	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800	1800	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
2000	1950	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗



Pyrodôme Évolution Treuil et Rooflam Évolution Treuil

Width	Length	Origin range		Thermik range							
		Sun screen in PCA10		Sun screen in PCA16		Sun screen in PCA16+		Sun screen in PCA32		Sun screen in PCA32+	
		SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500
mm	mm										
1000	1000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1000	1500	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗
1000	2000	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗
1100	1100	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1200	1200	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1200	2000	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1200	2500	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
1300	1300	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1400	1400	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1400	2000	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗
1500	1500	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗
1600	1600	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
1800	1800	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
2000	1950	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗

Pyrotop

Width	Length	Origin range		Thermik range							
		Sun screen in PCA10		Sun screen in PCA16		Sun screen in PCA16+		Sun screen in PCA32		Sun screen in PCA32+	
		SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500
mm	mm										
1000	1000	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗

Pyropass

Width	Length	Origin range		Thermik range							
		Sun screen in PCA10		Sun screen in PCA16		Sun screen in PCA16+		Sun screen in PCA32		Sun screen in PCA32+	
		SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500
mm	mm										
1000	1000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1200	1200	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Pyromax

Width mm	Length mm	Origin range		Thermik range							
		Sun screen in PCA10		Sun screen in PCA16		Sun screen in PCA16+		Sun screen in PCA32		Sun screen in PCA32+	
		SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500	SL250	SL500
1200	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1200	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1200	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1400	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1400	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1400	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1500	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1500	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1500	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1600	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1600	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1600	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2000	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2000	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2000	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2200	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2200	2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2200	3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The Sun screen infill is available in all the dimensions and polycarbonate infills of our comfort ranges (SKYCLAIR, AIRDÔME, PASSADÔME, ROOFDÔME, ROOFAERATION).

100% opaque sheet for all applications requiring blackout and heat reduction.



Total opacity



Long-term UV protection



Optimum thermal comfort

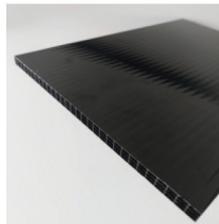


Energy saving

PCA with a white side always facing upwards (outside the building) and a black side facing downwards (inside the building).

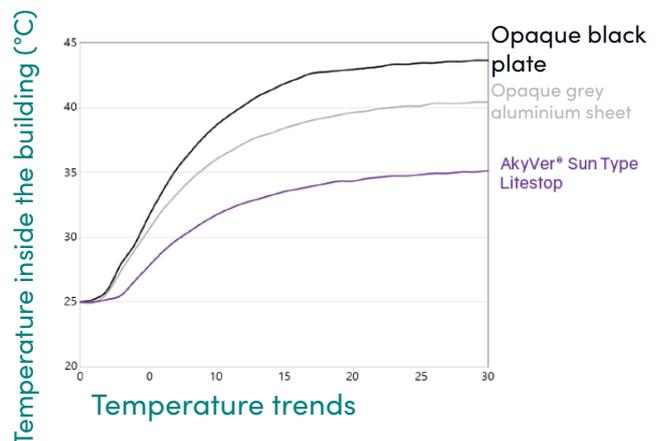
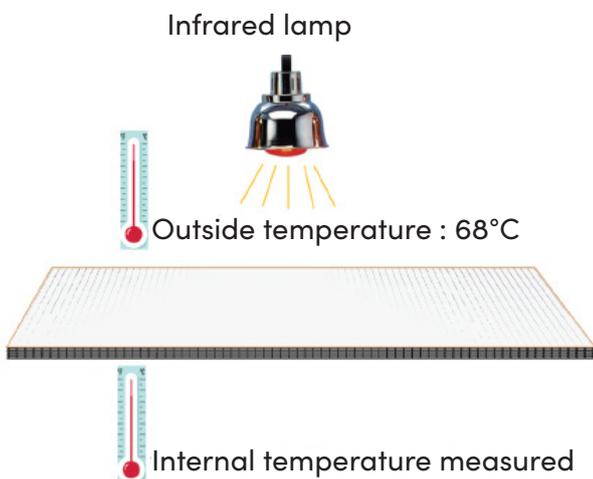
Visual product

Inside black / outside reflective white



The white side reflects the sun's rays and absorbs less heat than a conventional opaque sheet. The black side makes the PCA opaque.

LABORATORY TEST



SKYDÔME

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For the product range in other countries, please contact your local representative or visit www.skydome.eu.

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