

ALUCO AERO SUN

perfect translucent glazing



#LetThereBeDaylight

AERO SUN windows and façades insulated
with Lumira® aerogel

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Let there be daylight

The presence of daylight improves workplace environment, making it both natural and friendly

The presence of daylight improves workplace environment, making it both natural and friendly. This positive effect is partly based on psychology. Surveys have shown that people feel better and that their productivity increases when they have access to daylight. In addition, daylight helps save energy as it can replace artificial lighting in many areas.

Thus, ALUCO skylight systems are highly valued in modern architecture. For many years, property owners, planners and architects have chosen the high quality standards of our skylight systems and the multiple benefits they offer for both new buildings and roof renovation.

The systems are mounted on roof bases and can be perfectly combined with other elements from our offer. Together with the solutions of natural smoke and heat extraction, they constitute an excellent system of natural ventilation and cost-free natural lighting, and are also used to remove smoke and heat in the event of a fire.

And when there is too much sun...

Lumira Aerogel

Three years ago, ALUCO SYSTEM started using aerogel-filled polycarbonate panels in the manufactured skylights in order to optimize the access of light and its perfect diffusion in rooms.

Lumira aerogel by Cabot Corporation is the lightest solid material in the world – it is 95% air. Filling polycarbonate panels with aerogel results in excellent thermal insulation and light diffusion. It is an excellent material in solutions aimed at minimal heat transmission.





REGULAR GLASS



AERO SUN GLASS

Sunlight, which falls straight through windows and façades onto the floor, emits large amounts of heat inside rooms instead of illuminating the interior evenly. As a result, rooms are overheated, with glaring light, which causes discomfort for people inside.

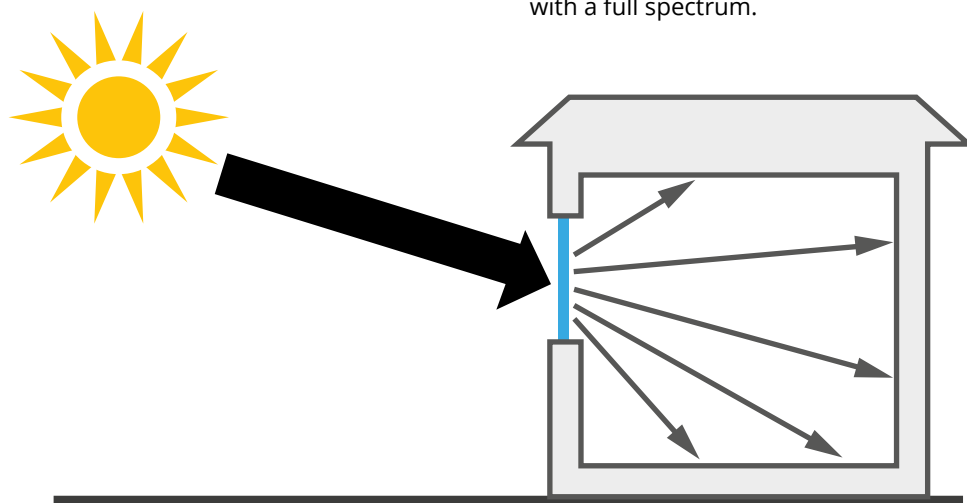
ALUCO SYSTEM has taken up the challenge of harnessing sunlight by designing the AERO SUN window and façade system. The combination of glass sets or polycarbonate panels filled with aerogel, or polycarbonate panels with aerogel, offers the perfect effect of light diffusion and minimizes the effect of room overheating.

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perfect translucent glazing

For years, designers have been trying to find the perfect balance between introducing natural light into the interior and its proper diffusion.

AERO SUN is an ideal light diffuser with an excellent LDP diffusion factor. The light is distributed in all directions and, as a result, we obtain the effect of comfortable lighting with a full spectrum.

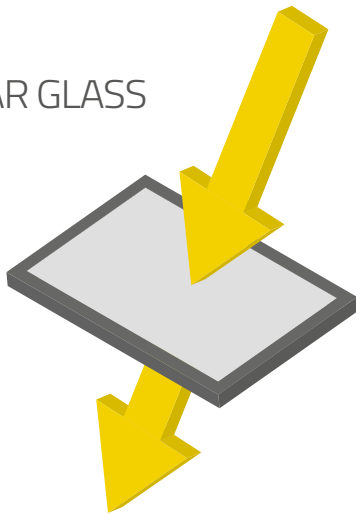


Perfect light diffusion

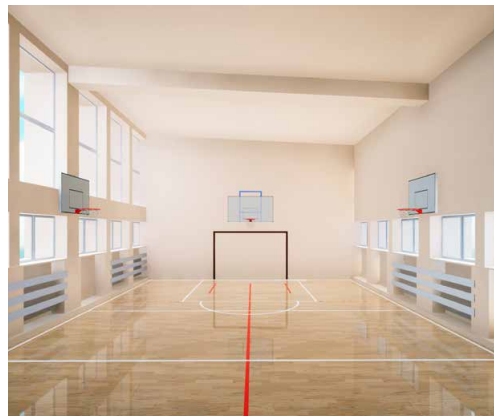
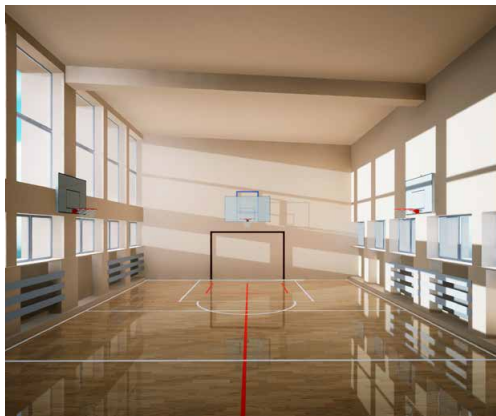
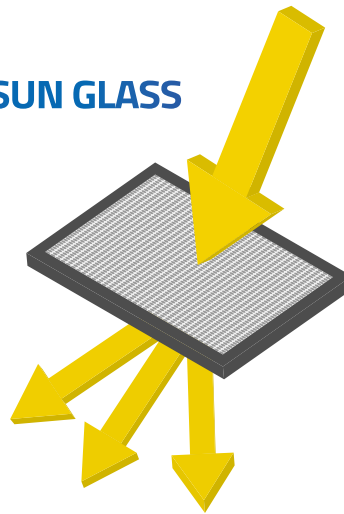
For many users, a particularly important aspect is the huge light scattering property. Daylight that penetrates the Lumira® aerogel filling the panels spreads evenly throughout the building. As a result, glare and direct sunlight are avoided, thereby increasing illumination conditions and the comfort of rooms. This effect is clearly visible in the two

photos below, which show a production hall before and after the application of Lumira® aerogel to the skylights. Working in all parts of the place has become much more enjoyable and productive.

REGULAR GLASS



AERO SUN GLASS

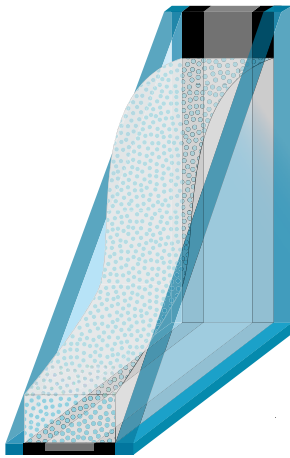


Outstanding parameters of thermal transmission

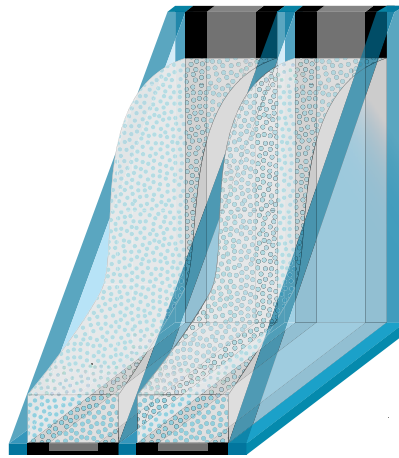
AERO SUN roof and façade elements with aerogel filling make it possible to use natural light better with minimal heat loss, which creates a huge potential for architectural freedom. Building standards are easy to achieve and even better results can be achieved without having to forgo natural light.

Types of AERO SUN glass sets

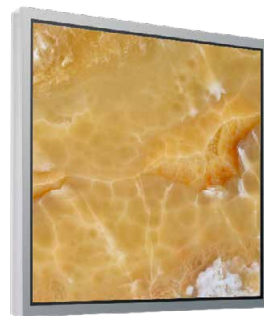
- Single-chamber frosted glass with aerogel
- Single chamber colourless glass with aerogel
- Double-chamber frosted glass (the warmest we can make) with aerogel
- Double-chamber colourless glass (the warmest we can make) with aerogel
- Single-chamber frosted glass with a polycarbonate insert
- Single-chamber colourless glass with a polycarbonate insert



Single-chamber glass
with aerogel



Double-chamber glass
with aerogel



AERO SUN glass has different
finishing options, including attractive
overprints

Parameters of AERO SUN glass sets with Lumira aerogel

The table below shows tests for single- and double-chamber glass sets filled with Aerogel Lumira.

1. Sampling

Following samples of insulating glass units with dimensions 800 x 800 mm were supplied to testing:

- float glass 4 mm / 32 mm, Aerogel / coated glass Silverstar 1.0 4 mm (#3) - 2 pcs.
- coated glass Silverstar 1.0 4 mm (#2) / 32 mm, Aerogel / float glass 4 mm / 32 mm, Aerogel / coated glass Silverstar 1.0 4 mm (#5) - 2 pcs.

2. Test results :

Observed characteristic: Energy conservation and heat retention

Light transmittance acc. to EN 410

Thermal transmittance acc. to EN 674

type	thermal transmittance $U (W.m^{-2}K^{-1})$	light transmittance $\tau_v (1)$
float glass 4 mm / 32 mm, Aerogel / coated glass Silverstar 1.0 4 mm (#3)	0,5	0,54
coated glass Silverstar 1.0 4 mm (#2) / 32 mm, Aerogel / float glass 4 mm / 32 mm, Aerogel / coated glass Silverstar 1.0 4 mm (#5)	0,2	0,25

Statement : Test results, given in this report, apply only to the tested items and do not replace other documents, e.g. administrative character, issued by other bodies, according to particular regulations.

Advantages of AERO SUN glazing with Lumira aerogel

Discover numerous advantages of aerogel insulated AERO SUN glazing system

Reduction of solar transmission

Sun shade blinds are becoming redundant due to a significantly reduced heat impact during the summer. There are savings in investment and maintenance costs, and the design of buildings or the appearance of façades does not need to be changed.

Chemically and UV stable

Even after many years of use, there are no changes in the chemical and physical properties of Lumira® aerogel.

Permanently hydrophobic

Lumira® aerogel is permanently resistant to moisture. Therefore, it is not susceptible to the development of mould or fungi. It is attractive in particular for the food industry.

Non-flammable and smokeless

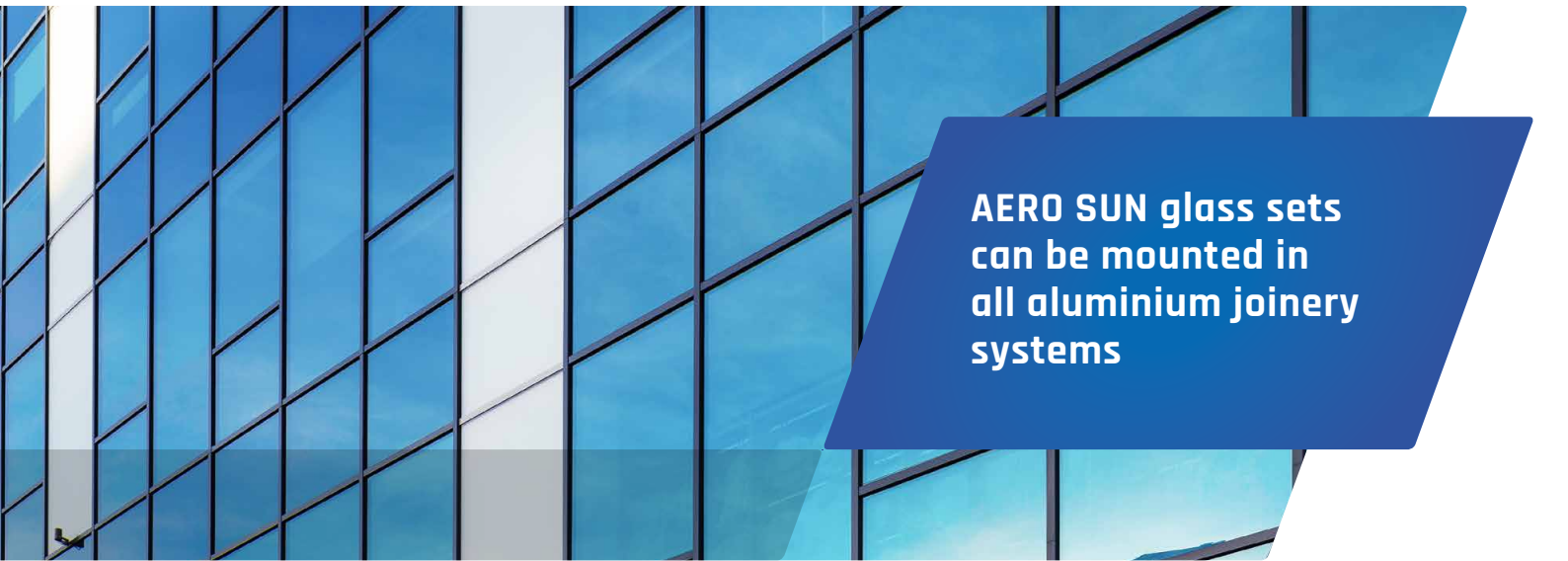
Bs 1.0 classification according to EN 13501-1

Low weight

70 - 100 kg/m³: when Lumira® aerogel is used in multi-wall panels, the wind load on the panels does not have to be statically calculated due to the low weight of Lumira® aerogel.

Environmentally friendly and ecological

Less energy is needed for heating, air conditioning or lighting. It results in significant savings in building maintenance costs and reduced carbon dioxide emissions.



**AERO SUN glass sets
can be mounted in
all aluminium joinery
systems**

APPLICATION EXAMPLES



Warsaw swimming pool

Lumira aerogel is hydrophobic. It has permanent resistance to moisture, so it is not susceptible to the development of mould or fungi. This is a special advantage in facilities with high humidity, such as swimming pools. The perfect light diffusion effect does not dazzle swimmers and helps them achieve outstanding results.



EUROPOL S.A. bakery

The interior of the industrial bakery of Europol S.A., Aluco Skylight roof skylights with aerogel provide a large amount of diffused daylight.

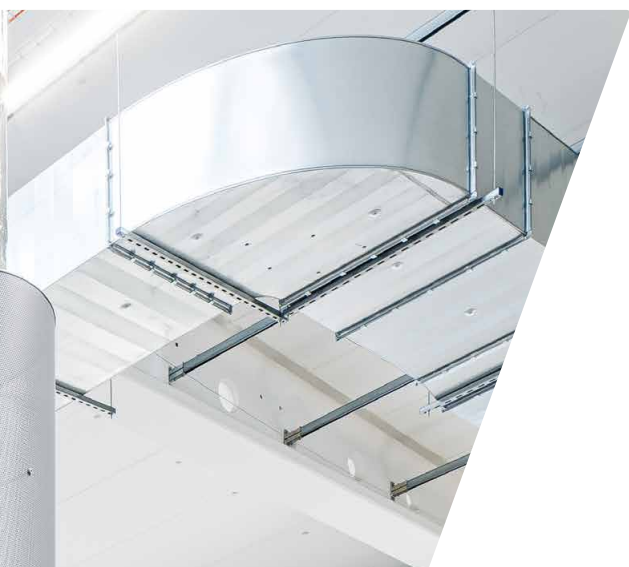


FCA Poland

The photo shows one of the production halls of the FCA POLAND group. The building has ALUCO SKYLIGHT SL skylights filled with Lumira aerogel. The interior of the building is intensely and evenly illuminated with natural daylight.



Let There Be
Daylight



Selected customers: Fiat Chrysler Automobiles, Skanska, Volkswagen, LOT, PKP CARGO, MAN, Eiffage, Budimex, Castorama, Cersanit, MediaMarkt, Rockwool, Echo Investment, Targi Kielce, DS Smith, Cerrad, Forte, Browary Tyskie.

About us

We help our customers take full advantage of natural light

At Aluco System, we have been helping our customers to make the most of the benefits of natural daylight for over 20 years.

Our company's product range includes:

- roof skylight systems,
- natural smoke exhaust systems,
- polycarbonate facades,
- aluminium joinery,
- industrial ventilation,
- Lumira aerogel ,
- thermal modernization.

Our priorities are technological development, energy efficiency and top materials. Our solutions have been used in dozens of facilities throughout Poland, both in industrial buildings and architectural projects with a bold concept. We are a 100% Polish capital company.

We perform orders all over the European Union and beyond.

ALUCO SYSTEM SP. Z O.O.

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Design your AERO SUN glazing with ALUCO SYSTEM!



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