GÜNIŞIĞI NATURAL LIGHTING

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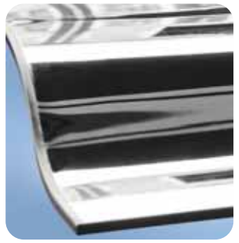
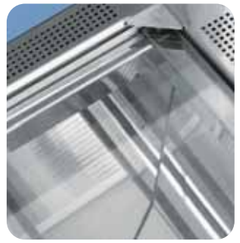
SOLATUBE nanoLUX SkyBOX™

ADVANCED DAYLIGHTING SYSTEMS • GÜN IŞIĞI





INNOVATIVE SOLUTIONS FOR DAYLIGHTING

ADVANCED TECHNOLOGY FOR A HIGH PERFORMANCE

We, as being Günışığı Aydınlatma Energy systems, entered the natural lighting industry in 2007. In these days with the growing importance of energy sources, we began to implement new and advanced systems in order to bring natural daylight in any environment and to change the way people use natural lighting. Our applications and the products we use, have pioneered the creation of a new sector in Turkey.

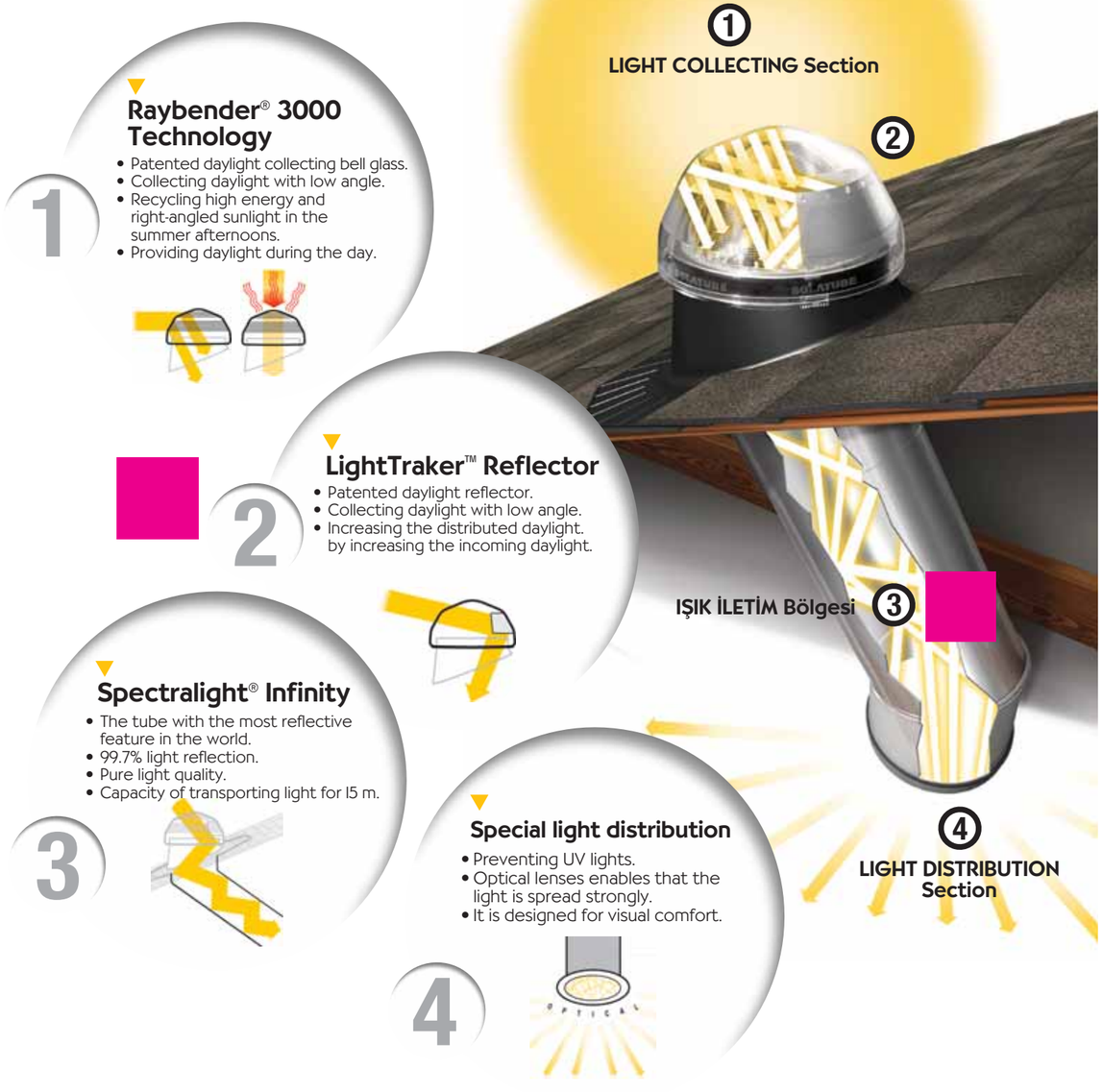
Since 2007, we have been the general distributor in Turkey for the revolutionary "Solatube®" brand of Solatube® International which is a company with 20 years of experience. Besides, we are also the general distributor in Turkey for the Lumira® product of Cabot Corporation which is the sole manufacturer at the natural lighting sector in the world for the aerogel material we use in our own product nanoLUX®.

In addition to this, we continue working in order to develop new Natural Lighting Systems and we go on adding new products for the natural lighting sector through the three functional models we designed in 2012 and presented via our SkyBOX™ brand.

As Günışığı Aydınlatma Energy Systems, we are proud of sharing our natural, healthy, economic and eco-friendly products and applications presented by a sustainable energy design and architecture, with you.

Günışığı Aydınlatma Energy Systems

20 YEARS OF EXPERIENCE IN REVOLUTIONARY TECHNOLOGY



Raybender® 3000 Technology

1

- Patented daylight collecting bell glass.
- Collecting daylight with low angle.
- Recycling high energy and right-angled sunlight in the summer afternoons.
- Providing daylight during the day.

LightTraker™ Reflector

2

- Patented daylight reflector.
- Collecting daylight with low angle.
- Increasing the distributed daylight. by increasing the incoming daylight.

Spectralight® Infinity

3

- The tube with the most reflective feature in the world.
- 99.7% light reflection.
- Pure light quality.
- Capacity of transporting light for 15 m.

Special light distribution

4

- Preventing UV lights.
- Optical lenses enables that the light is spread strongly.
- It is designed for visual comfort.

SolaMaster® Series

Solatube 330DS
Solatube 750DS

The need to light wide and high environments can be met with our Solamaster® Series 330 DS and 750 DS.

For suspended roofs, 60x60 square models and for spaces such as store production area, round finishing diffusors are available.

Areas of Use

• Markets • Factories • Offices • Sports Hall • Schools

Model	Tube Diameter	Lighting Area	Potential Tube Length	Light Intensity (LUMEN)
Solatube 330DS 750DS	530 mm	38 m²	15 m	App. 13.500 Lumen Max. 20.500 Lumen

Brighten Up® Series

Solatube 160DS
Solatube 290DS

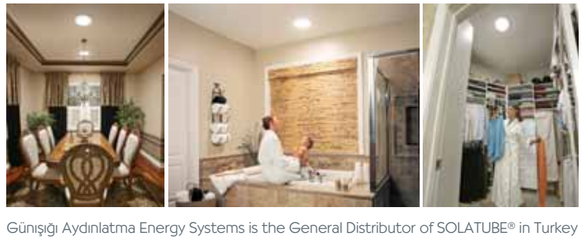
Brighten Up® Series provides service with a unique performance with its 160 DS and 290 DS models. As it is high quality and easy to install, this series is suitable for small spaces such as home, office etc. Optical curves on the glass ball help collecting more lights.

In Brighten Up® series, vusion and optiview diffusors are used.

Areas of Use

• Bathrooms • Kitchens • Home Offices • Living rooms • Corridors

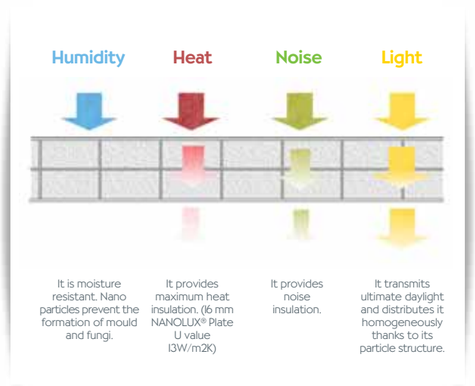
Model	Tüp Çapı	Aydınlatma Alanı	Potansiyel Tüp Uzunluğu	Işık Şiddeti (LUMEN)
Solatube 160DS	250 mm	14-19 m²	6 m	App. 3.300 Lumen Max. 4.600 Lumen
Solatube 290DS	350 mm	23-28 m²	9 m	App. 6.000 Lumen Max. 9.100 Lumen



SPECIAL SOLUTIONS EVEN IN THE LARGEST SPACES, THANKS TO BIO-TECHNOLOGY

In order to illuminate the wide spaces, wide spans are required. High light levels are attained through these spans. However, the heating effect of the sun is an issue.

NanoLUX® solves this issue. Thanks to the 99% air bubble type silica based dust inside; heat insulation is at the highest level. In addition to the heat insulation, its particle structure provides homogeny distribution of daylight while transferring the sunlight inside. This enables that tailor-made sunroofs for the project give the required light level.



NanoLUX® technology offers a very new application for natural lighting.

Special nanoparticles injected inside the polycarbonate plates provide sunlight and minimizes the problems of heat and noise insulation. By means of the particle structure of nanoparticles, light is spread homogeneously.

Günışığı Aydınlatma Energy Systems is the distributor in Turkey for the Lumira® product of Cabot Corporation which is the manufacturer of the aerogel material produced by nanotechnology.

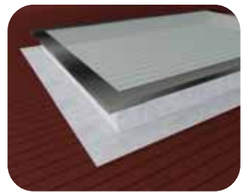
Privileges offered by NanoLUX® technology:

- 80% light transmission per cm
- Light is spread and distributed homogeneously.
- It is produced by non-flammable material and it is very light.
- It provides a high quality noise and heat insulation
- It offers architectural freedom for wall and roof applications.
- It is eco-friendly.

Areas of Use

NanoLUX® has large application areas. Heat isolated NanoLUX® can be used as a wall, roof window or smoke flue. It can be produced in different thickness and length. Tailor made applications are done for the project.

nanoLUX® Wall



nanoLUX® Roof window

nanoLUX® Smoke flue

Lumira® Aerogel Performance Values

Thickness (mm)	Light Transmission (%)	Direct Sunlight Transmission (%)	U Value (W/m2K)	R Value (Reflection)
10	80	80	1.38	3.2
16	70	70	1.00	4.3
20	62	62	0.78	7.2
25	55	55	0.64	8.0
32	47	47	0.51	11.1
40	39	39	0.42	12.0
50	31	31	0.34	16.0
70	19	19	0.25	20.0

In NanoLUX® daylighting system, polycarbonate plates are filled with a substance enabling light transmission called aerogel. While this material provides heat insulation; its particle structure enables that the light is distributed homogeneously.

Günışığı Aydınlatma Energy Systems is the General Distributor of CABOT CORP. in Turkey

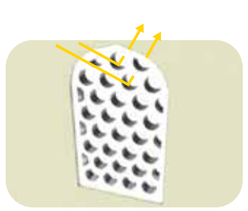
NEW PRODUCTS TO REFLECT SUNLIGHT

Materials with a high reflection parameters has encouraged renovations in natural lighting. Transmitting and transferring the light has become possible.

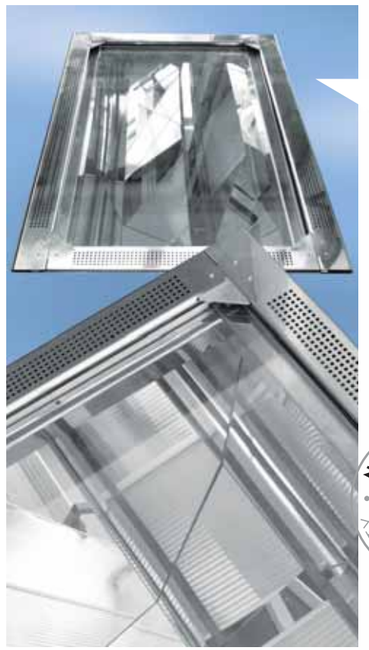
SkyBOX™ series is proud of offering these innovative products to you. These products are the developed and re-interpreted version of previous systems. The reason for the visual comfort while transmitting the sunlight and transmitting the sunlight to the dark spaces derives for the design.

SkyBOX™ G Model

SkyBOX™ S Model



SkyBOX™ O Model

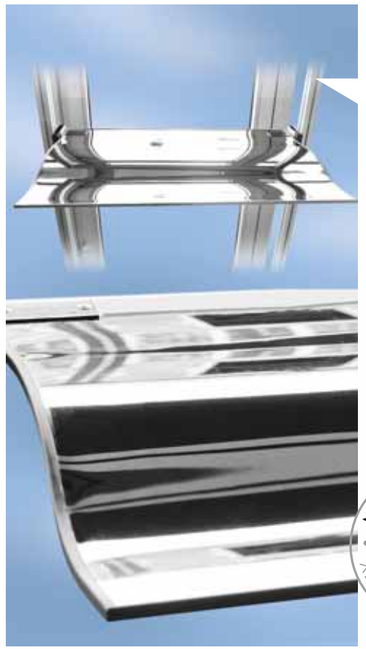


SkyBOX™ G Model

SkyBOX™ Ground

SkyBox™ G series have basement air flues called areaways receiving daylight and allows the daylight into the basement.

SkyBox™ areaway detail is placed onto your air flues constructed right next to the building in order to bring light to your basement. SkyBOX Ground has its inner side covered with a shiny and reflecting mirror. As a result of this, sunlight does not go inside directly but rather indirectly by being reflected increasingly. Reflector crystal mirrors transmit the view to the basement, as well. It has a carriage capacity of high weight resistance and it has protective glass of 20 mm thickness. Thanks to the air spaces on the outer frame, the space is filled with clean air. Insulation problem that might derive from rainy or snowy weather conditions is solved via special details. More comfortable and light-well spaces are achieved.



SkyBOX™ S Model

SkyBOX™ Shelf

SkyBOX™ S series is an architectural element enabling that the natural light is penetrated into the depths of the building.

It is installed in front of the windows and above the eye level. It has a curved surface covered with a reflecting material. It reflects the incoming daylight onto the ceiling over the shiny plate. Thanks to the curved structure of the light shelf, sun light is transferred to the deeper parts of the building. It enlightens the spaces that remained dark and provides a homogeneous light by decreasing the high light level in front of the windows.

SkyBOX™ S model has an aesthetic appearance and low weight thanks to its thickness reduced to minimum. Its installation detail enables removing and dismount at any time, it is easy-to-clean and it can be removed upon request. Cleaning the system is very important in terms of keeping the reflecting parameter high.

SkyBOX™ O Model

SkyBOX™ Orient

SkyBOX™ series re-interprets one of the Turkish architectural elements; roof window. SkyBOX™ I model is modernized with the known plaster roof windows and thus the isolation problem is solved.

SkyBOX™ O model has an insulation material of I0-20 cm thickness placed between the two metal frameworks. The holes on the framework and the insulation material are covered by plates with a high reflecting parameter. Incoming daylight is reflected into the inner spaces through these plates. While using transparent acrylic plates on the outer façade to control the air conditions such as heat of the sun, rain and water; special diffusers having a light distributing effect is used on the sections where lights are. Diffusers might be used in different colours and types for decorative purposes. Besides; the system might be built in a round, rectangular or any other form although its original form is a traditional Turkish window.

SkyBOX™ O model enables climate control in the buildings during the winter and the summer; as it is heat insulated. It brings visual richness onto the space and forms a visual and thermal comfort.

SkyBOX™ Serisi Günışığı Aydınlatma'nın Patent Koruması Altındaki Ürünleridir.

Energy, comfort and efficiency

IMPORTANCE OF NATURAL LIGHTING

Light has always been one of the most significant elements influencing the people's lives since the beginning of mankind. The Sun has always been a determining factor for the building shapes, settlement and even urban construction since the first ages. With the advent of electricity and technology, multi-storey buildings were constructed and working spaces became wider indoor environments; this led to the use of artificial lighting. Although artificial lighting meets the required light levels; it lacks the comfort and visual requirements, particularly in terms of health.

The recent sensitivity on energy increased the importance of energy saving. Natural lighting is one of the most important and influential methods in that respect. As a result of the researches, innovative products in natural lighting have better thermal conditions and distribute the sunshine better and thus become more efficient systems. The importance of daylight for the human health and efficiency might be listed as such:

Productivity
Daylight increases the productivity of a working person 6-16%. This causes an increase in the work quality and it decreases the absence ratio in the workplace.

Increasing Students' Performances
It has been observed that daylight provides a great increase in the students' performances. According the survey on 21.000 students at 3 different states in the USA; it has been detected that the students' success increased 20% for Math tests and 26% for reading tests.

Employee's Health and Opportunities It Offers
Employees working by the windows and thus using the sunlight during the day have 20% less illness. This fact results in medical savings as it will prevent unnecessary and expensive medical costs.

Reducing the Negative Environmental Effects of the Buildings
There is no heating problem in the spaces illuminated by the daylight lighting. Besides, during the use of artificial lighting systems, energy used in thermal plants and the carbon dioxide production it causes are reduced. This decreases environment pollution.

Energy Saving
More than 40% of the annual energy consumption in Turkey is used for lighting. Natural lighting significantly reduces this amount. It provides 97% energy saving for lighting workplaces such as office, warehouse, etc. Moreover, that the use of energy is most needed when the most efficient hours for daylight is between 11.00 and 16.00 contributes an increasing efficiency in natural lighting and reduces the artificial lighting need to the minimum.

Light is about visuality,
Visual quality determines perception quality.