



SUNLIGHT DUCTS.

IS IT:

Product

Technology

Equipment

APPLICABLE FOR:

Restoration

Rehabilitation

New Construction

APPLICABLE ON:

1. Foundations and underground structures

2. Vertical structures

3. Horizontal structures and vertical connections

4. Roof and terraces

5. Façade and building envelope

6. Finishes and completion elements

7. Integrated services

8. General strategies for building recovery

Related companies: DEPLOSUN

DESCRIPTION

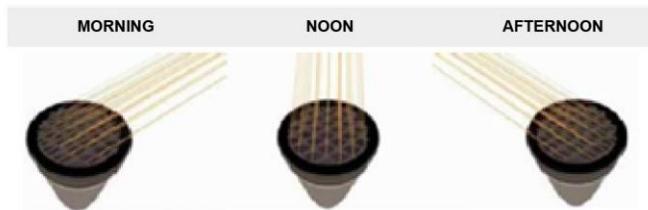
Light pipes transport sunlight through domes on the roofs of buildings and carry it several meters into the interior.

In residential buildings by means of residential Glass Top.

In industrial buildings using an industrial Glass Top.

Deplosun is a modular system with three main parts: the dome, the duct and the diffuser. In order to be able to adapt to different casuistry it has several accessories that allow to adapt to changes of direction, changes of section of the duct, to distribute the natural light to several floors at the same time with a single duct and a motorized closing system that allows to eliminate the light of the duct by means of a switch.

The *Deplocell* louver maximizes solar gain through three planes designed to capture morning, midday and afternoon sun. Improving performance in winter, with the sun's rays at a lower angle, and minimizing in summer by protecting from excessive radiation. Incorporating the louver into a dome doubles the amount of light at unfavorable times.



WHY TO USE

Light tubes provide natural light in interior spaces with poor lighting or without windows (communal stairwell, bathrooms, toilets, etc.).

1. Tempered glass domes, with mechanical impact and scratch resistance.
2. Deplocell reflective louvers capture sunlight and reflect it back into the duct, deflecting the rays inward, minimizing the number of reflections inside the tube and improving conventional performance.
3. With a sealed anti-condensation chamber, which in turn improves thermal performance.
4. Aluminum duct with 98% Silver-plus finish with super-reflective factor according to DIN5036 and good sun stability.

5. Electrostatically neutral, does not attract airborne dust.
6. The diffusers are 100% glass, with no plastic components.
7. Savings in electricity consumption..

HOW TO USE AND APPLY

Deplosun Glass Top consists of three elements:

1. Dome or skylight, capturing light and redirecting it to the interior through a reflective louver of triple tempered glass, anti-condensation air chamber, reflective louver and silk-screened finish. The installation of the Deplocell louver is oriented towards the south, thus achieving the maximum effectiveness of light collection throughout the day.
2. Conduit, which transports the light into the building by means of a silver surface treatment. Reflective duct 98% reflective.
3. Glass diffuser, distributing the light homogeneously and comfortably. UV protection.

TECHNICAL CHARACTERISTICS

Resistance to aging, the glass maintains its properties unalterable.

Scratch resistance, the glass has a high surface hardness of 6.5 on the Mohs scale.

Acoustic insulation, double glazing with airtight chamber and seal.

Thermal insulation, skylight $U=2,8 \text{ W/m}^2\text{K}$; total value of the chamber formed by the duct and diffuser $U=1,9 \text{ W/m}^2\text{K}$.

RECOMMENDATIONS AND OTHER INFORMATION

DEPLOCELL reflective louvers are inserted at the factory. They are mounted in the air gap inside the double layer of glass and thus remain fully protected from dirt and scratches. The louvre is made of SILVER PLUS 98% aluminum with a surface treatment of 98% according to DIN5030 and a 25-year warranty.

In the installation, the *DEPLOCCELL* louver should be oriented towards the south, to maximize sunlight gain throughout the day.

Deplosun light pipes are C2C certified systems that guarantee an industrial process that does not impact the environment and reduces industrial activity. Cradle to Cradle.

EXAMPLES



©HOSTALEMPURIES.COM

https://espaciosolar.com/wp-content/uploads/2017/05/es_FICHA_HOSTAL_EMPURIES.pdf



©SISTEMAMIND.COM

https://espaciosolar.com/wp-content/uploads/2017/05/es_FLAT_TOP_AticoCalleLlauerBarcelona.pdf



©SISTEMAMIND.COM

Rural house in Conill Barcelona:

https://espaciosolar.com/wp-content/uploads/2017/05/es_CASA-RURAL-CONILL.pdf

REFERENCES / SOURCES AND LITERATURE

<https://espaciosolar.com/tubo-de-luz/tubo-solar-tragaluz/>

J. Song, G. Luo, L. Li, K. Tong, Y. Yang, J. Zhao. Application of heliostat in interior sunlight illumination for large buildings (2018) *Renewable Energy*, vol. 121. <https://doi.org/10.1016/j.renene.2018.01.011>

V. García-Hansen, I. Edmonds. Methods for the illumination of multilevel buildings with vertical light pipes (2015) *Solar Energy*, vol. 117. <https://doi.org/10.1016/j.solener.2015.04.017>

M.S. Mayhoub. Dual ducting: An innovation to increase the use of daylight in buildings. (2014) *Lighting Research & Technology*. <https://doi.org/10.1177/1477153514548472>

R. Canziani, F. Peron, G. Rossi. Daylight and energy performances of a new type of light pipe (2004) *Energy & Buildings*, vol. 36. <https://doi.org/10.1016/j.enbuild.2004.05.001>

WEBSITE OF THE COMPANY

<https://www.deplosun.com/copia-de-glass-top>



IMAGES AND CAPTIONS



Fig.1: Sunlight ducts. ©DEPOSUN.COM



Fig.2-7: Examples of various installations of sunlight ducts. ©DEPOSUN.COM

Hostal SPA Empuries:

DEPLOSUN sun ducts (Cradle to Cradle certified) are used to illuminate different areas of the SPA Wellness area, improving lighting comfort and the well-being of the end user. Architect: Francesco Ranocchi.



Fig.8: Deplosun Glass-Top sun ducted lighted indoor pool. ©Francesco Ranocchi



Fig.9: Massage and therapy area illuminated with Deplosun Glass-Top sun ducts. ©Francesco Ranocchi



Rural house in Conill Barcelona:



Fig.10-12: In this rural house a Deplosun Glass-Top sun conduit with exposed tubular diffuser has been installed to illuminate the cellar, which has been converted into a Jacuzzi room. The duct crosses a floor being seen to finally peek through the stone vault. In this case the chamber incorporates the reflective louvre that improves the capture of the sun during the winter months, improving the performance of the system. ©DEPOSUN.COM