

Experience the Sky

CoeLux @Biosphera Equilibrium 2018



CoeLux participates in Biosphera Equilibrium 3.0, a project promoted by Aktivhaus/ Nexlogic, a company that creates eco-sustainable buildings with high energy efficiency.

Three CoeLux LS Ice systems have been installed in Biosphera Equilibrium 3.0, the reconstruction on wheels of a 42m² studio apartment, which left Milan in October 2018 and will travel for two years, touching numerous locations between Italy and Switzerland.



CoeLux® LS ICE

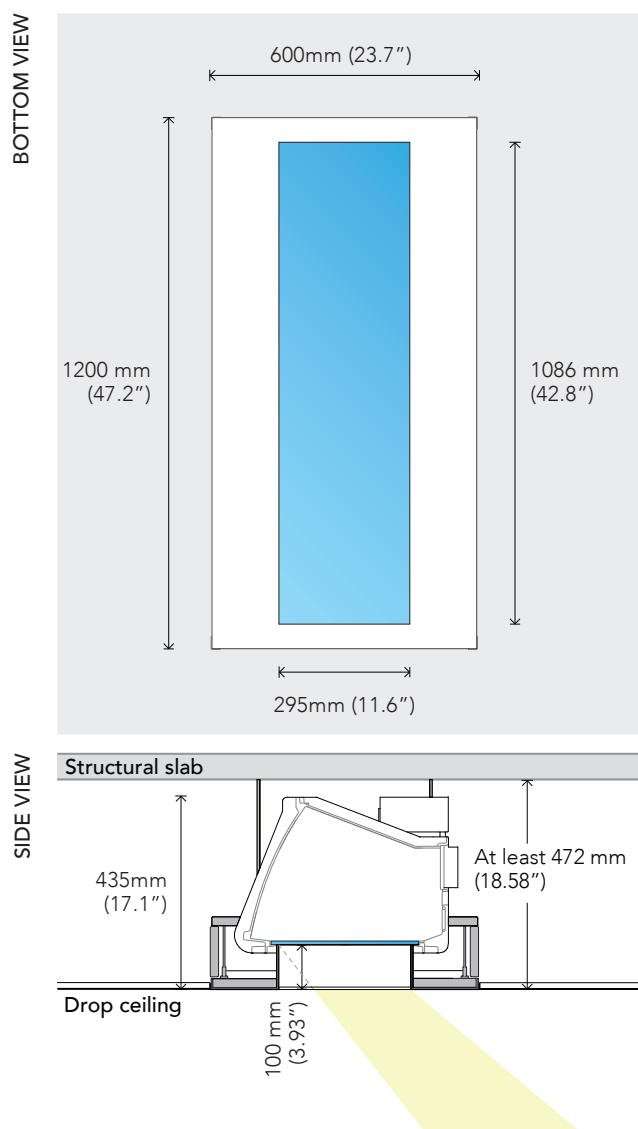
Datasheet

CoeLux® LS ICE can be installed as a single unit, as a modular system, or aligned in order to design hallways of light able to deliver depth or visual patterns.

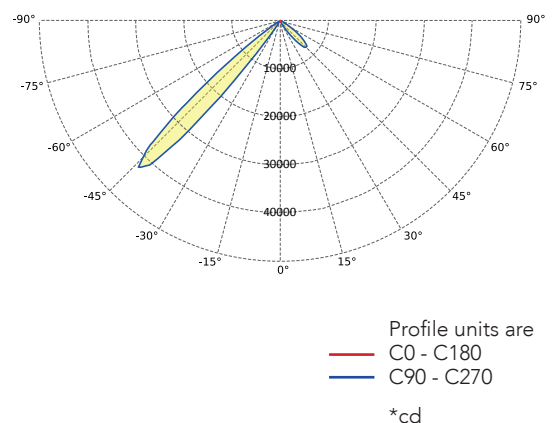
The sunlight reflects on the frame creating a 45-degree beam of light as well as a beam of light in the opposite direction. This feature makes it ideal for spaces which require lively light: the sun reflected on the frame is visible from various angles. CoeLux® LS ICE suits offices and shops, where the double sliver of light can be fully exploited, as it can dramatically light up shop windows and the shop itself simultaneously. CoeLux® LS ICE is DALI compatible allowing easy integration into a control system. Warranty period: 2 years.



Technical drawings:



Photometric curves:



Technical informations:

DEVICE DIMENSIONS	1200 x 600 x 435 mm	47.2 x 23.6 x 17.1"
SKY-LIGHT SIZE	1086 x 295 mm	42.7 x 11.6"
WEIGHT	30 kg	66 lb

Performance informations:

TYPE OF SOURCE	LED dimmable
POWER INPUT	100-240 V~ 50/60 Hz
MAX POWER CONSUMPTION	100 W
TYPICAL POWER CONSUMPTION	90 W
TOTAL LIGHT OUTPUT	4300 lm
LUMEN MAINTENANCE	LM70 >50000 h

Environmental informations:

Equipment intended for internal use	
MIN. / MAX. OPERATING TEMPERATURE	-10°C /40°C
MAX. OPERATING RELATIVE HUMIDITY	95% (non-condensing)

CERTIFIED



> CoeLux® LS ICE



CoeLux® artificial skylight

CoeLux® technology enables the physical reconstruction of natural light, giving people the opportunity to experience the sun and the sky everywhere.

The CoeLux range includes three families, CoeLux HE, CoeLux ST and CoeLux LS.

- ¹ From a technological point of view, this system is composed of an artificial light source, [spectrally very similar to the visible part of sunlight \(CCT 5770 K\)](#), and of a [nanostructured material](#) which recreates the Rayleigh scattering process that occurs in the atmosphere. This scattering phenomenon (that produces the diffuse light) is regulated by an inverse fourth power law with respect to the wavelength. This means that the blue light is almost completely diffused, while the red component is nearly completely transmitted. In such a way, the two sources of natural light (sun and sky) are recreated. The optical design



Figure 1

aims to achieve two effects at the same time: a strong and almost parallel light emitted by a circular source [producing a uniform beam that enters the room while lighting the diffuser](#). As a result, the light distribution imitates the outdoor condition typical of a cloudless day: An intense yellowish light component (CCT 5000 K), which mimics the sun, lights the scene casting shadows of the illuminated object and, at the same time, the [diffuse skylight component creates blue-toned shadows](#).

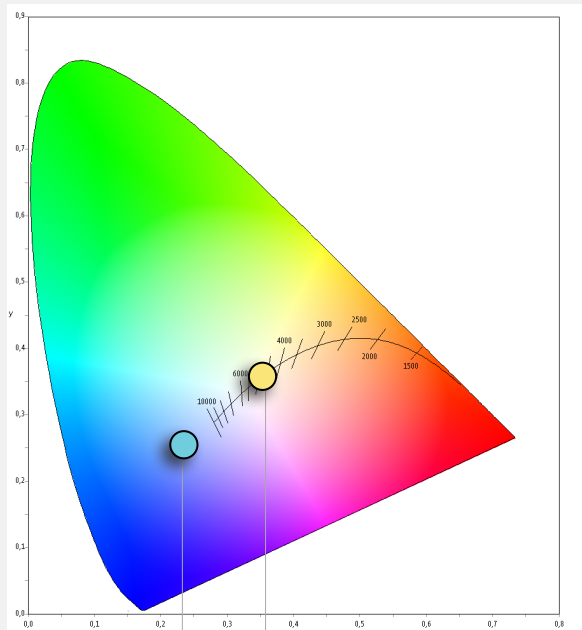
Additionally, when gazing towards this lighting system, an observer can experience a sky with indefinite depth (see Figure 1) and an artificial sun with the dimensions of the real one. Notably, a number of other details can be perceived that imitate nature: Penumbra colour and dimension, the change in shadow colour with the distance of the shadowing object, the apparent movement of the sun across the sky when the observer walks under the window and the brightness ratio of shaded and sunlit areas are only some examples.

- ¹ M. Canazei, M. Laner, S. Staggl, W. Pohl, P. Ragazzi, D. Magatti, E. Martinelli, P. Di Trapani, [Room- and illumination-related effects of an artificial skylight](#), *Lighting Res. Technol.* 48(5) 539-558 (2015) <https://doi.org/10.1177/1477153515577852>

CoeLux® artificial skylight

Light Spectrum and Chromaticity Diagram

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CoeLux Sky
CCT >10000

CoeLux Sun
CCT 5000

The CoeLux systems give an impression of a real skylight, both because of a realistic opening of the ceiling and of the levels of illumination and brightness. Also, the correctly dimensioned phenomena that occur immediately trick the brain and the light is perceived as coming from outdoors.



CoeLux Srl
via Cavour 2
Science and Technology park ComoNExT
22074, Lomazzo, Italy
info@coelux.com - +39 0236714394
coelux.com

