

Experience the Sky

COMPANY PROFILE  
2021

# CoeLux® Experience the Sky

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Experience the bliss and the joy of sunny skies anywhere and at any time. CoeLux® is a scientific breakthrough, allowing you for the first time to reproduce in an interior space the physical effects and optical phenomena of natural light, specifically the diffusion and transmission of sunlight through the atmosphere. CoeLux® technology recreates the sun and sky allowing you to truly experience the outdoors while indoors.

CoeLux® combines three key elements: the latest LED technology which reproduces the sunlight's spectrum; a sophisticated optical system that creates the sensation of the distance between the sky and the sun; and nanostructured materials, only a few millimeters thick, which recreate the entire Rayleigh scattering process which occurs in the atmosphere. CoeLux is an optical system based on nano technology to artificially reproduce the natural light and visual appearance of the sun and sky.

You need to experience CoeLux® to appreciate it.

Like trying to describe the scent of a perfume, or the colors of a tropical sun, words are insufficient to convey CoeLux®'s uplifting effects. One can say that it produces feelings of lightness and well-being, but until you've basked beneath its sunny blue sky, until you've seen for yourself how it transforms a space, the way it illuminates and enhances everything in its path, you'll never understand how CoeLux® is changing the world of contemporary lighting design.

The effect of warm, artificial, direct sunlight illuminates and enhances objects, completely transforming domestic and public spaces, giving them volume and shape through light and shadow, and creating a new relationship between people and the architectural space which surrounds them.





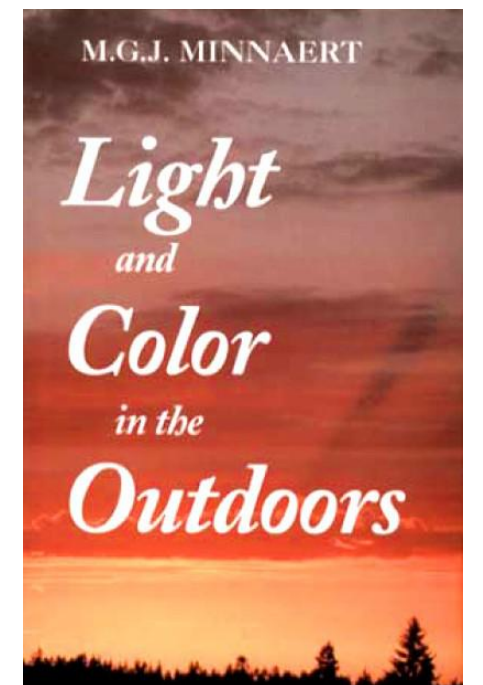
CoeLux® is a surreal window on the real world



# CoeLux® : The Idea of Light



CoeLux® founder and CEO  
Prof. Paolo Di Trapani



Minnaert's book that  
inspired Prof. Di Trapani

Born from the desire to communicate natural light, CoeLux is the result of a 12-year scientific research project by Professor Paolo Di Trapani, a physicist of the Department of Science and High Technology at the University of Insubria in Como.

Intrigued by the accounts of Marcel Minnaert in the book "Light and Color in the Outdoors", in which the author takes the reader on a journey of color and outdoor light and reveals numerous and spectacular natural optical phenomena, Prof. Di Trapani attempted to capture the presence of such phenomena in nature, but without success. Vexed, he began to verify the accuracy of Minnaert's accounts in the laboratory, trying to artificially recreate the phenomena. During his experiments he became aware of the mysterious light which appears in the shadow of a branch, in the shade of a second branch of a tree, in the details of the myriad of images of the sun, projected by the spaces between foliage, reflected by

dewdrops, the eyes of a girl, or the rippled surface of a lake, of the countless shadows and colors appearing from dawn to dusk in clear or stormy skies.

Gradually, Prof. Di Trapani was able to reproduce these phenomena, the results occurring exactly as Minnaert had described. But the real surprise came when he again opened his own window and saw that everything described in the book truly existed outdoors. For the scientist, like the artist, reality must be represented and staged, to be perceived.

From this discovery Prof. Di Trapani envisioned a technology capable of physically recreating the atmospheric optical phenomena found in nature. Experiencing details like the deep uniform blue of the sky, the direction of sunrays, the contrasting luminance of color in light and shadow, the movement of the sun across the sky, allows you live within your own space, again aware of these details which, for tens of thousands of years, have





Weather or Not group exhibition, MU, Eindhoven (NL)

been perceived as signs of the outdoors.

In this journey, the first milestone was the exhibition "Di Luce in Luce" ([www.diluceinluce.eu](http://www.diluceinluce.eu)), presented in 2002. The show is a wide-audience-oriented theatrical performance, whose theme is light and the experience of human knowledge. For the first time in the world, it represents an indoor reconstruction of nature, reproducing spectacular optical atmospheric phenomena, in which light is diffused, diffracted or refracted by the air, the clouds, drops of rain, branches of a tree, etc.

La mise en scene "simulates" reality, thoroughly imitating the laws, which, according to the actor (the scientist conducting the show), act in nature. Using glass nanospheres for the reproduction of air and laser beams for sun rays, plexiglass spheres and cylinders as drops of rain, adding trees, pergolas, underwater sceneries and waterfalls, the scientist

guides the audience through various rooms which become "natural environments" of clear skies and storms, fog and rainbows, demonstrate the colours of the sky and shadows, allow the audience to glimpse the sun through foliage and branches of a bare tree, during an eclipse or behind the shoulders of a mountain. The performance is a faithful reproduction of nature. Through a series of experiments, the actor invites us to have a glimpse of paintings, architecture, literature, photography, music and even cinema, weaving ambitious ties, suggesting original interpretations of masterpieces.

"CoeLux - The sky light reconstruction in artificial illumination by means of solid transparent nanocomposites" is also a research project funded by the European Union under the 7th Framework Programme for research and development.





“One day, while admiring Magritte’s painting “Empire des Lumieres”, I had an amazing artistic realization when I understood the fantastic paradox the painting depicts: a house, dimly lit by a street lamp in the dark of night, and behind it, a bright daytime blue sky, streaked with white clouds. Two very realistic, seemingly trivial scenes, which together make a masterpiece.

The same evening, hours after sunset, I looked out the window of my room, and I saw a house dimly lit by a street lamp with a dark, moonless sky above it. Suddenly I realized that the sky is not black as I previously thought. Widening my eyes I could see a few glimpses of clouds capturing the very last rays of the setting sun, and shining my way faint flashes of gray, blue, pink, orange, even green. This dance of wonderful colors in the darkness has been repeating itself for millions of years, and I would have never seen it without the work of Magritte.

So I learned that art, even if surrealistic, is a ‘window on the real world’: an opening, through which we can look and discover, amazed like children, the reality that exists. For me, CoeLux® is a surreal window on the real world.”

CoeLux® founder and CEO, Prof. Paolo Di Trapani

Technology can remind us of the wonder of nature, in the same way art does. René Magritte’s The Empire of Light, shows us a dazzling, bright surreal sky above a house that is mired in falling darkness with its front porch lamp glowing.

“Empire of Light”  
René Magritte, 1898



# Our Philosophy

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*“To connect people back to a true natural light sensation through the use of high-end and hyper-realistic technology”*

CoeLux® founder and CEO,  
Prof. Paolo Di Trapani

Click to watch the video

<https://youtu.be/KwT7Xr55isM?list=PL7m903CwFUgm3GJkVbW9vlsHtJBH7Eakh>

[Technology Pioneer 2015 | Paolo di Trapani \(CoeLux\)](#)





# Our purpose

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

At home or in an office, in a shop, museum, hospital, airplane or train. In a space as small as an elevator or as large as a stadium, CoeLux® systems elevate the user's mood and sense of well-being on a primal level, increasing the quality of the space we inhabit, our productivity and feeling of well-being within it as well as transforming the presentation of products or works of art on display. We believe that CoeLux® will fast become an essential component in the design of interior spaces: a virtual window to the sky and the sun where no other opportunity exists to connect with the outdoors. We envisage over time that our technology will be applied on the exteriors of buildings, to expand the sky into the urban environment as well.





# 15 years in the making

The CoeLux® idea originates from 8 year of activity spent for developing the science and art exhibition "Di Luce in Luce" - the exhibition launched the idea of the indoor reconstruction of atmospheric optical phenomena to improve connections between art and everyday life.

CoeLux® was founded in 2009 as a spin-off of the University of Insubria, Como – the Univeristy is a shareholder in CoeLux Holding.



Di Luce in Luce, Como

Di Luce in Luce, Genova Science Festival

Di Luce in Luce, Genova Science Festival

Di Luce in Luce, Vilnius

First "sky" solid nano-diffuser

First patent filed

CoeLux Srl founded

First EU project

First Optical device producing Sky/Sun image at infinite distance

First private investors

First LED sun simulator

First patent granted

First product prototype

First sales

SCIENCE AND ART EXHIBITION  
2001

CoeLux® COMPANY  
2009

2015



# Unique technology, true sensations

Relying upon nano-tech sky that responds to light as the real one does, high-brightness projector that simulates the sun and optical units that recreate the cosmic depth inside a box, CoeLux® devices produce the true Rayleigh scattering effect of natural sunlight in an infinite and clear-blue sky, radically enhancing spaces that would otherwise be deprived of natural daylight.

The contrast with other, traditional artificial sky luminaires is huge: they deliver mixed blue/white diffused light for a weak cloud effect, whereby some are little more than a flat panel display screen – direct sun beams are missing, as well the casted object shadows blue-tinged by the diffused light of the sky, significantly reducing the true sun & sky sensation.

Only CoeLux® ensures to experience the infinite depth of view that cancels the anxiety of a closed space.

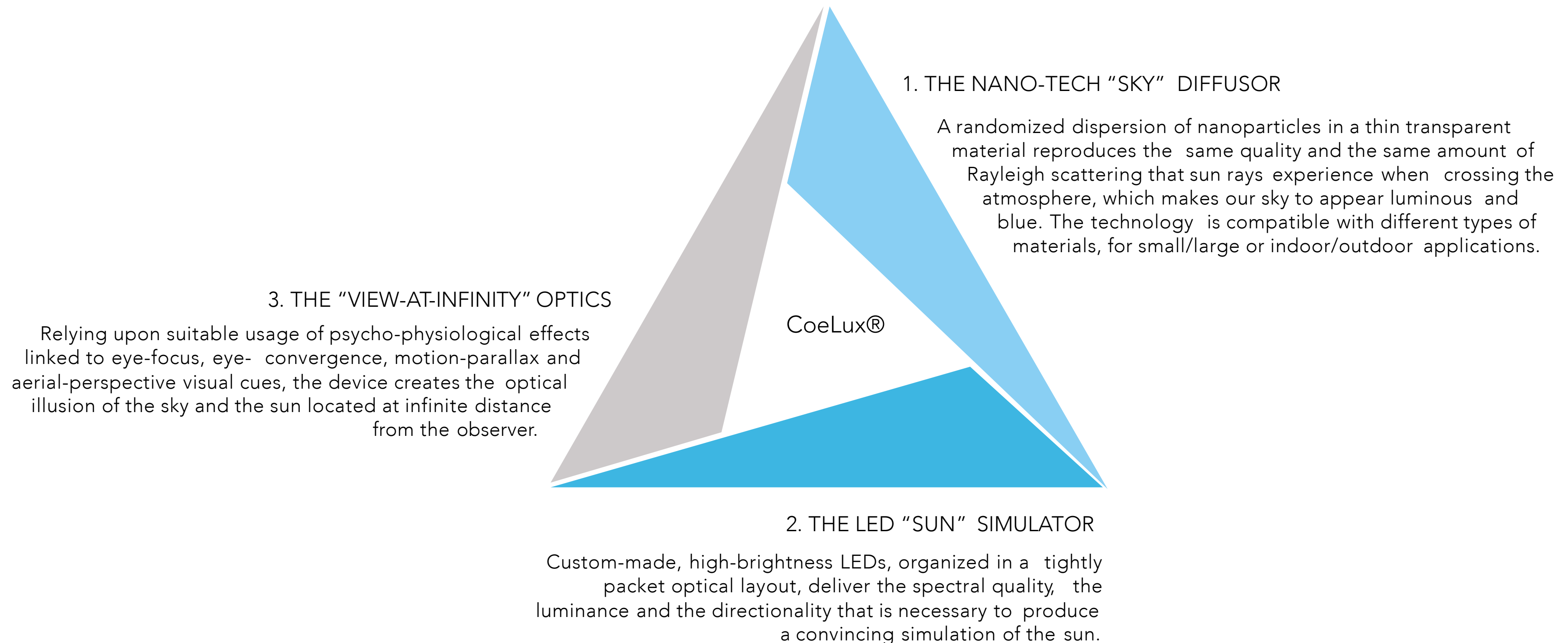




# 3 core technologies

15 years of know-how developed by an inter-disciplinary team of researchers from the fields of optical physics, numerical modelling, chemistry, material science, architecture, design and theatre scenography have contributed to the development of a solution that stems from proprietary technologies in three pillars:

CoeLux® is the first company to faithfully reproduce the full effect of the sky and sun in an artificial device.





# Award winning & internationally recognised



2014

**EDISONREPORT.eu** - CoeLux® has been nominated by EdisonReport, a leading site for news and information for the lighting industry in North America, as one of the Top 10 products of 2014.

**LUX AWARDS 2014** - CoeLux® won the 2014 Lux Award of the Lighting Industry Association as the "Light source innovation of the year". The Award was collected at the Troxy theater during the Lux Live Festival in London on November 20, 2014.

2015

**EUROPEAN UNION 2015**

CoeLux® has been granted a new EU project - CoeLux VR 666794 – in the framework of the Horizon 2020 research program. The project obtained the top evaluation amongst the proposal submitted in the section Nanotechnologies, Advanced Materials and Production (NMP).

**MIT TECHNOLOGY REVIEW 2015**

CoeLux® has been nominated by MIT Technology Review Italia as one of the ten Italian "Smart & Disruptive Companies" of 2015. This award is dedicated to companies that will bring great innovations in the world.

**WORLD ECONOMIC FORUM 2015**

CoeLux® has been nominated among the technology pioneers 2015. Among previous winners are: Dropbox (2012), Kickstarter (2012), Spotify (2011), Twitter (2010), Wikimedia (2008) and Google (2002).

**FX AWARDS 2015**

CoeLux® has been awarded by the UK magazine FX as the best Lighting Product of 2015. This award is typically dedicated to companies in the contract interior design and architectural fields.

2016

**MATELEC AWARD 2016**

CoeLux® won the Innovation and Energy Efficiency Award in the Illumination and Lighting category, confirming the success of this system able to bring the sun and the sky in your room.

**LUX LIVE MIDDLE EAST AWARDS 2016**

CoeLux® has been awarded with the Judges' Special Technology Awards at LuxLive Middle East exhibition. The prize has been established by LuxLive exhibition, the largest fair dedicated to lighting in the UK, for the first time this year held in the UAE.

2017

**DARC AWARDS 2017** - CoeLux® has been awarded the Darc Award 2017 in the category best architectural lighting product.

**EUROPEAN INNOVATION PRIZE FOR RETAIL 2017**

CoeLux® has been awarded as the sole winner at the European Innovation Prize for Retail 2017. It is the first time, since its establishment, that this prize is awarded to a lighting company.

2019

**GOOD DESIGN AWARDS 2019**

CoeLux® has been awarded the Good Design Award Gold Winner. Australia's annual Good Design Awards program is one of the oldest and most prestigious international design awards in the world, promoting excellence in design and innovation since 1958.







CoeLux® HT25



# CoeLux® HT25

**NEW!** CoeLux HT25 allows great design freedom, its distinctive 25 cm thickness is suitable for recessed installation even in small heights, in plasterboard false ceilings or modular ones. It can be installed in different compositions and the subtle design of the frame facilitates the creation of semi-continuous windows, creating the perception of large portions of sky.

Moving around the area below the system, the observer will be able to see a large portion of sky and by approaching and entering the emitted spot the sun will appear, slightly diffused and not very dazzling.

## TECHNICAL INFORMATIONS:

SKYLIGHT SIZE*	520 x 1070 mm   22.4 x 42.1"
WEIGHT*	50 kg   110 lb
OVERALL DIMENSIONS*	1200 x 600 x 250 mm   47.2 x 23.6 x 9.8"





CoeLux® HE solutions



# CoeLux® HE

## the “showcase”



Products: CoeLux® 45 HC, CoeLux® 45 LC, CoeLux® SQUARE and CoeLux® 60 HC

In the clear sky of CoeLux HE systems, a bright sun appears, perceived at an infinite distance, which makes the system particularly realistic and enhances the feeling of depth. By meeting walls and surfaces inside the room, the light emitted creates a spot with defined contours and helps to recreate a natural atmosphere.

The key verticals for this class of products are Retail, Healthcare, Offices/Corporate Headquarters, Hospitality and High-End Residential. The consistent message across all verticals is that CoeLux connects people to natural light, reduces anxiety, increases productivity, well-being and even promotes healing. The CoeLux technology creates a true innovation halo effect for end users: be they hospitals, retailers or businesses.

CoeLux HE (high-end) is available in three versions: 45 HC, 45 LC, 45 Square, which differ in size and specifications.

### TECHNICAL INFORMATION:

	CoeLux® 45 HC	CoeLux® 45 LC	CoeLux® 45 Square
SKYLIGHT SIZE*	1710 x 850 mm   67.3 x 33.5"	960 x 460 mm   37.8 x 18.1"	974 x 445 mm   38.3 x 17.5"
WEIGHT*	300 kg   660 lb	300 kg   660 lb	300 kg   660 lb
OVERALL DIMENSIONS*	3759 x 2461 x 1210 mm   148 x 98.1 x 47.6"	2376 x 1913 x 923 mm   93.6 x 75.3 x 36.3"	1885 x 1656 x 2376 mm   74.2 x 65.2 x 93.6"

\*dimensions may differ slightly depending on the versions



# CoeLux HE Moon

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*“The moon, unlike the sun, lets you look at her; it seems she wants to be looked at. The moon is the first celestial object that attracts our amazed eyes, so as to leave us enchanted, admiring it for hours. It is her that when she shines alone in the sky, calls us outside our four walls, to lead us to inhabit a bigger space. She is the first stone in the river, on which the bridge of the rays lies, paving the way towards the cosmos. This is the moon: A window wide open on my real home: the universe”*

CoeLux® founder and CEO,  
Prof. Paolo Di Trapani narrates CoeLux® Moon





# CoeLux HE Moon

CoeLux® Moon reveals to the market how the ability of artificial light to generate comfort and relaxation is connected with the possibility of delivering the experience of an infinite space, even before that of illuminating.

Indeed, the comfort produced by CoeLux® Moon is certainly not less than the one generated by the CoeLux® systems which reproduce the sun in the sky, although the intensity of the light here is hundreds if not thousands of times lower.

In spite of very little light in the environment, CoeLux® Moon will surprise you for the brightness of its night sky, and for the fact that, albeit at night, shadows do not seem to be black, but blue. "Voices of blue darkness", wrote the poet Giovanni Pascoli in "My evening". But the surprise generates the expectation, and the expectation the discovery. So that one day you may walk outside, in the world. Alone. Under the Moon. Far away from everything, all around is silence. Even the wind blows without any sound, above in the high atmosphere, making the stars dance. It will perhaps be at that precise moment that, for the first time, in the heart of the night you will see the light and the colour of the sky rising, which is the same, in the day and at night.







CoeLux® LS solutions



# CoeLux® LS solutions



Products: CoeLux® LS Ice, CoeLux® LS Matte and CoeLux® LS Array.

CoeLux® LS (Long Sky), is able to reproduce the sun, the bright infinite blue sky and the perception of spectacular white bright clouds up in the sky. Observing the window and moving in the space below, a sun with shaded outlines seems to follow the observer: a play of optics creates the illusion of a slight movement that gives realism to the system. By installing the LS systems in modular compositions, a single sun will be perceived.

The system is available in three different versions, CoeLux® LS ICE, CoeLux® LS Matte and CoeLux® LS Array featuring their own finish and frame size. CoeLux LS is ideal for shops, restaurants, offices and waiting rooms.

## TECHNICAL INFORMATIONS:

	CoeLux® LS Ice	CoeLux® LS Matte	CoeLux® LS Array
SKYLIGHT SIZE*	1086 x 295 mm   42.8 x 11.6"	1086 x 295 mm   42.8 x 11.6"	598 x 295 mm (x2)   19.6 x 11.6" (x2)
WEIGHT*	30 kg   66 lb	30 kg   66 lb	24 kg   55 lb
OVERALL DIMENSIONS*	1200 x 600 x 435 mm   47.2 x 23.6 x 17.1"	1200 x 600 x 465 mm   47.2 x 23.6 x 18.3"	1159 x 500 x 460 mm   45.6 x 19.7 x 18.1"

\*dimensions may differ slightly depending on the versions



A photograph of a room with a large projection on the wall. The projection displays the text 'CoeLux® Best Case'. The room features a wooden floor, a white wall, and a skylight with a blue sky view. A piece of medical equipment is visible in the bottom left corner.

CoeLux®  
Best Case

Leksell Gamma Knife® PERFECTION™



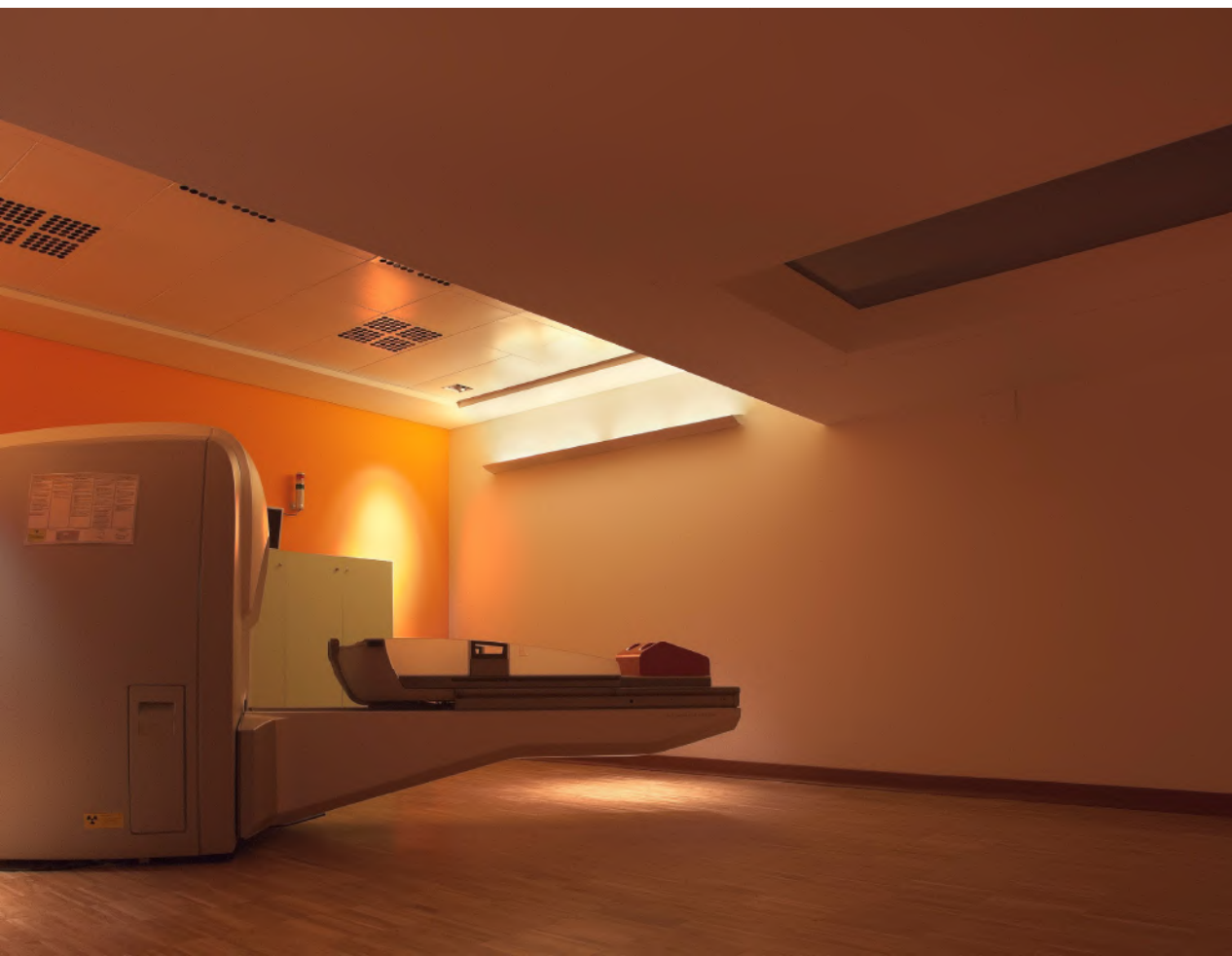
# Healthcare

## Best case

The Humanitas Research Hospital, Milan

Natural light strengthens and speeds up the healing process.

A CoeLux® 45 HC unit was installed in the Milan Humanitas Research Hospital in 2015. The unit is used in the "Gamma-knife bunker", where patients who are affected by severe brain diseases undertake gamma-ray brain microsurgery operations while fully conscious. Following the overwhelmingly positive feedback from patients and staff, the hospital has recently purchased three additional units.





# Retail

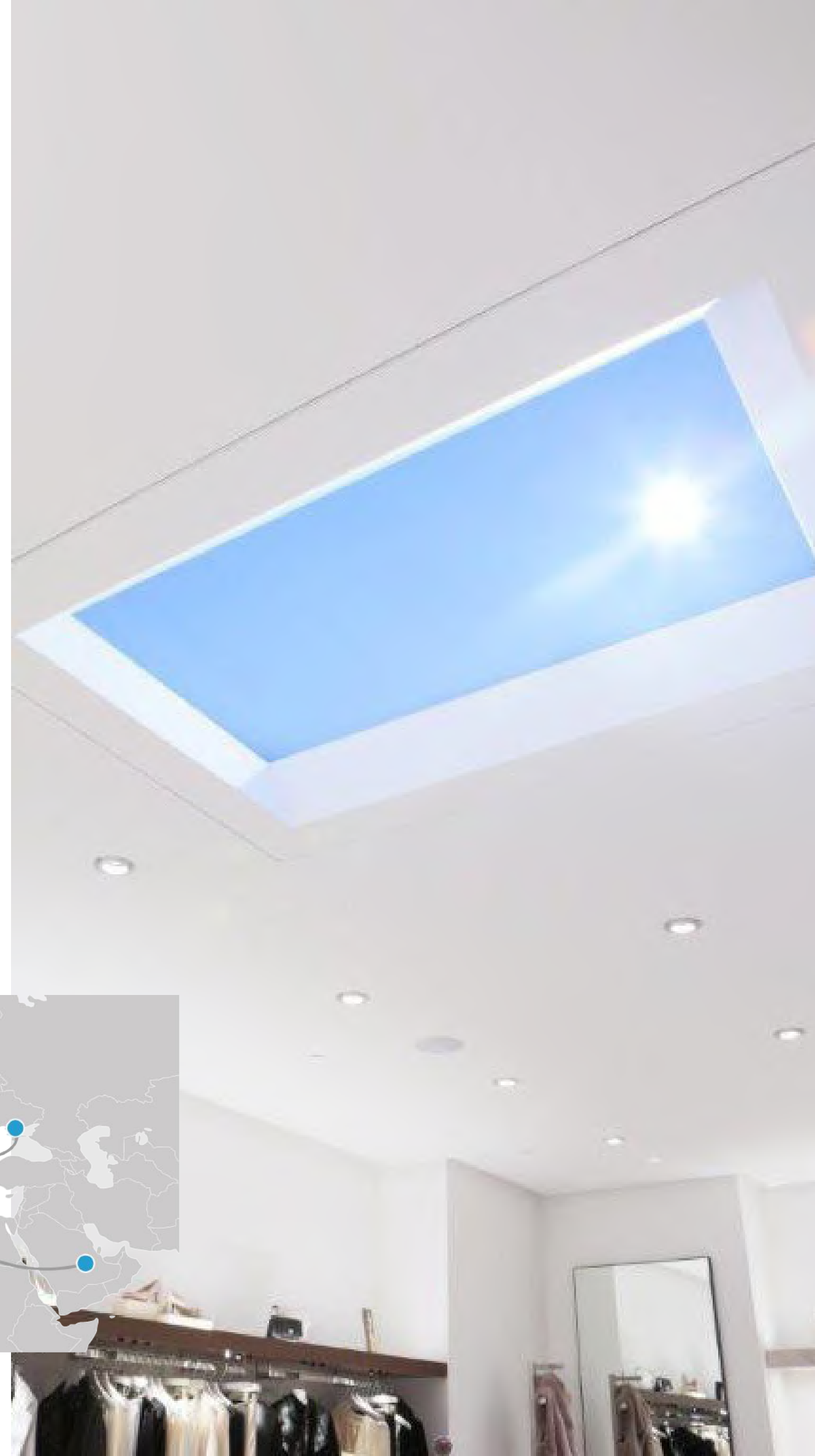
## Best case

### Uterqüe inditex

Uterqüe is a sophisticated fashion accessory brand launched by Inditex in 2008. The brand sits at the premium end of the Inditex retail portfolio with 72 elegant and refined stores across 12 markets. Following successful product trials at its Madrid Headquarters, Uterqüe has ordered 20 CoeLux® 60 systems for its flagship stores worldwide.

The adoption of CoeLux® by Uterqüe is a clear indication of the potential for CoeLux to play an important role in creating the quality of in-store experience that is vital to the success of high end retailers across all sectors.

### Uterqüe flagship stores







# Applications

CoeLux® technology is ideal for all types of architecture, and has a particularly high impact in underground spaces. Subways, airports, shopping malls, offices, fitness centers, hotels, museums, housing, even small spaces such as elevators or ship cabins can be transformed by CoeLux® technology to change the way they are experienced.



# Applications

Healthcare | Hospitality | Retail | Office Space | Architectural | Residential | Public



CoeLux® 45 HC, Humanitas Hospital, Gamma Knife Radiosurgery department, Milan (IT)



# Applications

Healthcare | Hospitality | Retail | Office Space | Architectural | Residential | Public



CoeLux® 45 HC, Standard Dose, New York (USA)



# Applications

Healthcare | Hospitality | [Retail](#) | Office Space | Architectural | Residential | Public



CoeLux® 45 HC, Boffi S.p.a., Milano (IT)



# Applications

Healthcare | Hospitality | Retail | Office Space | Architectural | Residential | Public





# Applications

Healthcare | Hospitality | Retail | Office Space | [Architectural](#) | Residential | Public





# Applications

Healthcare | Hospitality | Retail | Office Space | Architectural | Residential | Public



CoeLux® 45 LC, Golf Club Monticello, Milano (IT)

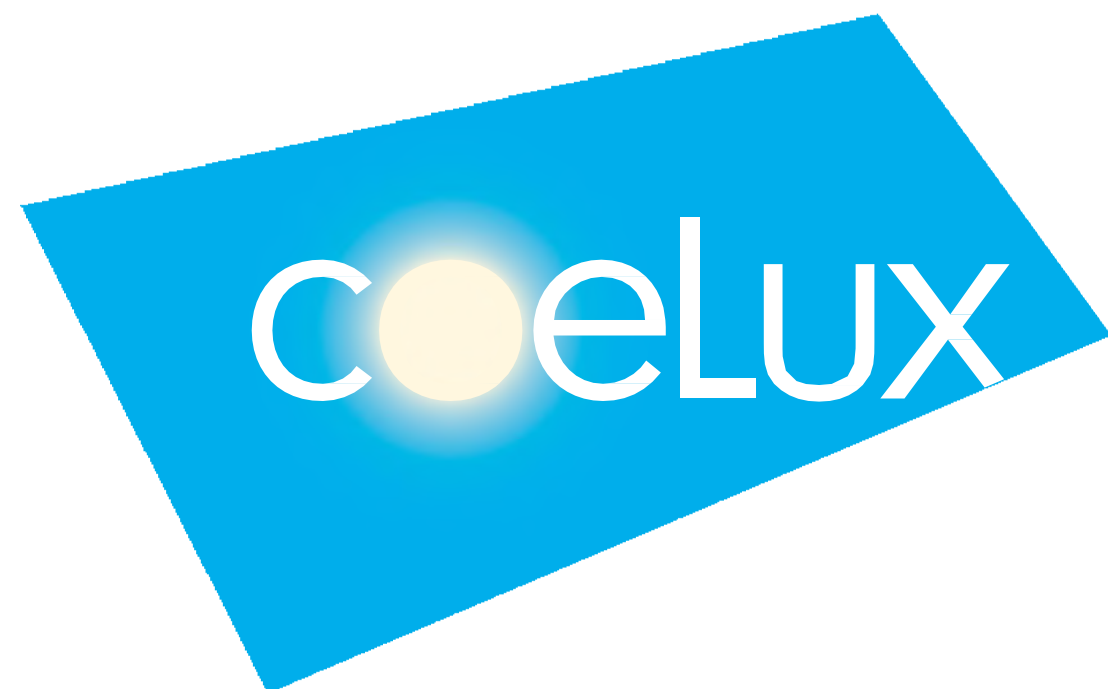


# Applications

Healthcare | Hospitality | Retail | Office Space | Architectural | Residential | **Public**







Experience the Sky

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