

# KELIOS<sup>®</sup>

POWERED BY NATURE

Solar-activated Dynamic Windows



**SECM**

DÉPARTEMENT VERTEC



**DTA**

DOCUMENT  
TECHNIQUE  
D'APPLICATION

**KELIOS<sup>®</sup>**

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# KELIOS®

A WINDOW FOR ALL SEASONS



**ADAPTS TO  
THE WEATHER**

ALL BY ITSELF

# KELIOS<sup>®</sup>, A DIFFERENT APPROACH TO BUILDING ENVELOPES

## PASSIVE AND DYNAMIC, ALL AT ONCE

Natural light is essential for our health, harmony, and development. It helps us perceive time and our environment and regulates our metabolisms and biological rhythms.

Letting the sun shine in is a **key to wellness**. From the beginning, architects have employed natural light by focusing on the essential elements at their disposal.



Through technical evolutions, windows have continued to evolve in size and function.

Since the 1960s, the glass used in the building sector has gone from single panes to **multi-attribute glazing** providing mechanical strength, safety, thermal and acoustical insulation, and most notably, sunlight control.

### KELIOS<sup>®</sup> WINDOWS: EMBRACING THE DAWN OF THE DYNAMIC WINDOW

Dynamic, and yet passive, these windows adapt to the intensity of sunlight all **by themselves**.

They permanently adjust the light transmittance (LT) and solar factor (g) while providing thermal performance values (Ug) at 1.1 and 0.6 W/m<sup>2</sup>·K for double- and triple-glazed windows, respectively.

Everything for **better heat balances** in buildings and greater comfort for occupants without reducing outside views.

# RESPECTING THE ENVIRONMENT

## IS OUR MOTTO

### → THERMAL INSULATION

For double and triple glazing, the KELIOS® range provides very low **thermal performance** (Ug) for high-quality insulation.

### → SUNLIGHT CONTROL

KELIOS® windows adjust their solar factor (g) according to the intensity of the rays received. They allow buildings to take advantage of solar heat in winter, but also to protect against the same heat that becomes too intense in hotter months.

KELIOS® windows help maintain **heat balances** in buildings under any conditions.

### → OPTIMAL LUMINOSITY

The windows darken or lighten depending on the sunlight, which **helps reduce glare** for occupants. They constantly adjust and thereby provide

permanent **comfort to the eyes**.

### → TOTALLY AUTONOMOUS

KELIOS® windows operate on their own through the free energy provided by the sun. In contrast to electrochromic windows, building designs do not need to include automation systems. Since they do not depend on any energy source other than the sun, KELIOS® windows remain active even if there is a power outage.

### → AIR-CONDITIONING

The windows contribute to reducing or even eliminating the need for air-conditioning units.



A TIMELY RESPONSE  
TO SUSTAINABLE DEVELOPMENT



# A WIDE RANGE OF USES

## MULTI-FUNCTIONAL PRODUCTS

KELIOS® windows can be used in a variety of markets:

- > home
- > industry
- > new construction
- > renovation

KELIOS® windows can be installed using diverse, fully tested techniques:

- > Fixed or opening
- > Curtain wall
- > Rebate on 2 or 4 sides
- > Toggle unit glazing
- > Structural silicon glazing
- > Clamped glazing

KELIOS® are flat and do not have any actual limits to shape.



KELIOS® windows can be curved, depending on the radii.

KELIOS® windows are multi-functional and comply with European standards:



FOR THERMAL INSULATION



TO PROTECT AGAINST VANDALISM AND BURGLARY



FOR ACOUSTICAL INSULATION



TO PREVENT INJURY AND FALLS

# TECHNICAL FEATURES

## FOR HEAT BALANCE IN BUILDINGS

### → SIZES

Maximum width is 1,600 mm  
Maximum height is 4,000 mm

### → SPECTROPHOTOMETRIC CHARACTERISTICS

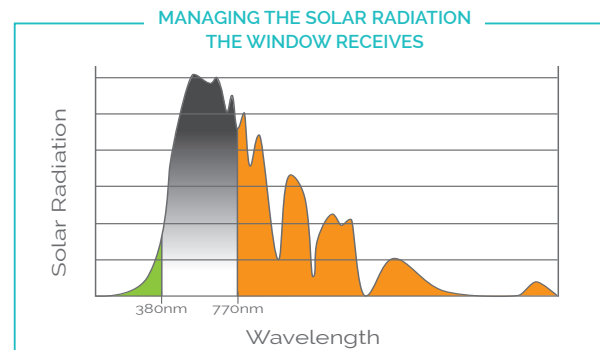
The characteristics of the light transmittance (LT) and solar factor (g) constantly change according to the intensity of the energy flow received.

	Min. indicative values	Max. indicative values
Light transmittance (TL)	10-20 %	50-60 %
Solar factor (g)	10-15 %	28-35 %

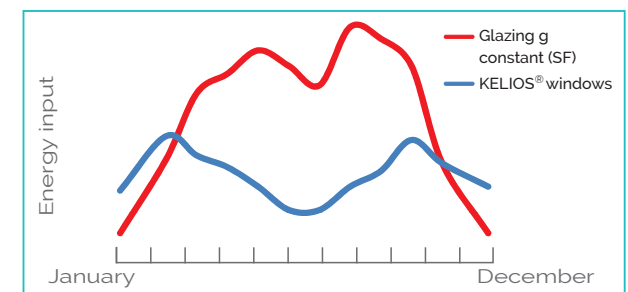
The light reflection of the window also varies in a range from 4% to 11%.

### → MANAGING THE ENERGY RECEIVED

- > KELIOS® windows block the UV rays that cause discoloration of exposed objects.
- > On the color spectrum, the light transmittance of the glazing varies according to the energy received from the sun.
- > Low e-coating minimizes infrared light.



### → ENERGETIC AND LUMINOUS INTENSITY



- > Traditional, solar-activated windows (red line on the graph) only provide entry of a small amount of radiation in winter, but much more from spring to fall.
- > On the other hand, KELIOS® windows let solar radiation penetrate in winter, too.
- > From spring to fall, KELIOS® windows efficiently limit solar heat gain in the building.

# INSTALLATION AND CARE

## NOTHING OUT OF THE ORDINARY

### → INSTALLATION

KELIOS® windows are installed using traditional methods by typically qualified personnel.

In the event of breakage, KELIOS® windows can be removed and refitted without any particular requirements. They are made in France, and replacement is guaranteed under a relatively short deadline.

### → CARE

Like any traditional product, care is limited to washing the windows at a frequency defined by the environment that affects the glazing.



## KEEP IN MIND

### ONE BRAND:

KELIOS®, Powered by Nature

### ONE PRODUCT:

Dynamic  
Autonomous  
ZERO consumption  
Single, double, or triple glazing

### ONE GUARANTEE:

Products are guaranteed in compliance with French regulations for the building industry.



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