

NORMALIT

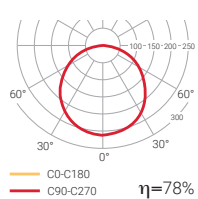
# Luzerna Avant

New Normalit luminaire for modular ceilings, presented in three different sizes: 600 x 600, 1200 x 300, 1200 x 600.

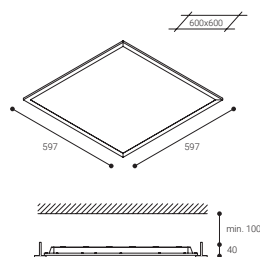
To be installed in plasterboard ceilings, suspended or surface mounted with accessories.



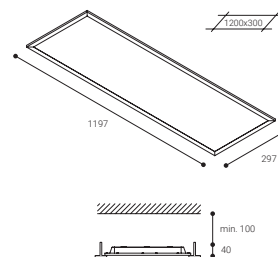
Opal diffuser



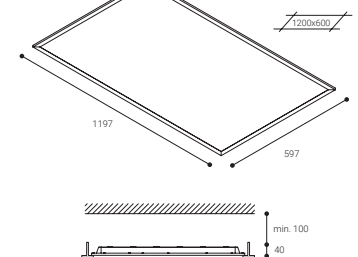
600 x 600



1200 x 300




1200 x 600



# Luzerna Avant

## Fittings

### Luzerna Avant

Installation	Recessed in the ceiling
Diffuser	
Light source	LED
Photobiological safety	0
UGR	19
CRI	>80
MacAdam ellipse	3
Beam angle range	114
Power range (W)	32-64
Consumption range (W)	36-72
Colour temperature (°K)	3000   4000
Light range	4320-10280
Power factor	0,96
Efficiency (%)	77,74
Expectancy	50000 h L70B50
DALI Option	✓
Continuous function 24h	✓
IP	20-54
Class	II
Ideal cut out (mm)	600x600   1200x300   1200x600

 Opal diffuser

## Photobiological security

The European Norm for photobiological security (EN 62471) establishes a number of criteria to determine if a luminaire entails any risk of eye or skin damages.

This regulation determines four photobiological risk groups:

GROUP OF RISK	
RG0	Risk free
RG1*	Low risk
RG2	Moderate risk
RG3	High risk

\* Time under 3 h.

## Flickering

Also known as **periodical blinking or the light source of a luminaire** (stroboscopic effect), it is present in almost all the artificial light sources and is caused by the looping out of the output current in the LED driver.

This rate below makes it possible to measure the significance of the problem:

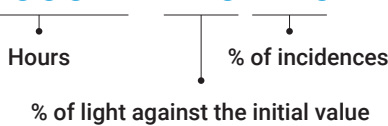
- A flickering under 15% prevents dizziness, nausea and headaches.
- Under 8% this flickering is not considered to be harmful (according to IEEESA-1789-2015).



## Led expectation

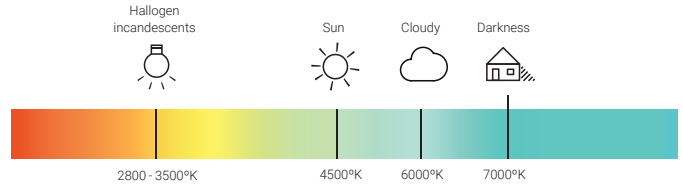
The expectation of useful life of the LED has been defined by an indicator such as the one shown at the right of this page. In the mentioned example, at 60,000h, 90% of the luminaires will have an output equal to or greater than 70% of the nominal value.

60.000 h · L70 B10



## Colour temperature

The colour emitted by a light source in comparison with the light that a black body heated at a specific temperature would emit. For this reason, this colour temperature is expressed in kelvin, in spite of not reflecting specifically a temperature. There are basically three groups:



### Warm light

**3500°K or lower temperature colour.**

It is equivalent to the light produced by incandescent and hallogen lamps in the past. It is recommendable for retail stores, fruit shops, bakeries, groceries and butcheries (in these two latests it is even more common a light in a pink tone). For domestic lighting it is recommended to use this type of light in rooms such as the living room or the bedrooms, places for **rest and relax**.

### Neutral light

**Temperature ranges from 3800°K and 4500°K.**

According to the experts this is the most natural light. It can be installed in any environment not requiring any special tone that the other two categories could provide.

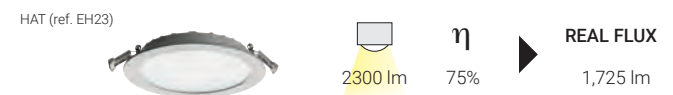
### Cold light

**Colour temperatures above 5000°K.**

It is equivalent to the light in a very sunny or cloudy day. One of the advantages of the cold light is the higher lumen output, which creates a perception of higher luminosity. This type of light is recommended for fish markets and jeweleries. For homes, it is very common to find it in kitchens and toilets. However the experts in make up always recommend cold lights as they offer an advantage, which is that they provide a better chromatic range.

## Light performance $\eta$

It indicates the real flux. Defines the luminic efficiency of a luminaire.



Lower lumen output, better efficiency