

LED lighting: a double-edged double-edged sword.

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LEDs are known to almost everyone, even without their knowledge. even if they don't know it. LEDs are those funny little light bulbs that light up the keys on your cell phone, the car's, car's pilot light, the mini-chain ....

This type of lighting was restricted to the world of electronics electronics, because until very recently our knowledge of the physics our knowledge of the physics of these diodes only allowed us to make yellowish red and green lights.

yellowish lights. Although from the beginning they were Although from the beginning they stood out for their low power consumption and efficiency, red LEDs have been a great friend to us.

In fact, red LEDs have been a great friend to amateur astronomers friends of amateur astronomers all over the world, as a low-energy, glare-free flashlight.

But physics and technology are advancing, and relatively recently red LEDs have become relatively recently, LEDs of all colors - red, yellow all colors: red, yellow, green, green, blue and WHITE.

WHITE!!!!

The white LED has been sought after as the Holy Grail of lighting. Grail of lighting. LEDs have two particularities that make them very, very desirable for industry:

Their durability (average life of more than 100,000 hours - 11.5 years) Almost twice as long as their competitors.

Low power consumption. The replacement of traditional lighting with LEDs replacement of traditional lighting by LEDs in many fields. in many fields. There are already cars with LED headlights LEDs, flashlights, traffic lights, signage and ornamental lighting and security lighting....

And sooner or later there will be road lighting will come sooner or later.

A double-edged sword: The biggest weapon that we, the activists for a activists for a dark sky dark skies has been energy savings, closely energy savings, closely linked with the environment and economic expenditure. And LEDs are an optimal solution to this problem.

But it generates another problem, which is that from now on now it will be much, much cheaper to and this may imply a net increase in Light Pollution (L.P.), since it will be possible to twice as much light can be illuminated at almost half the price.

Another problem is the type of light used, as we commented in the article two months ago, white light has very negative effects negative effects on the night environment. Another problem with this is that LEDs give this white light in an array of continuous continuum array, not in narrow lines of emission, so the filters used both in emission lines, therefore the filters

that are used in both professional and amateur both professional and amateur astronomy to eliminate to eliminate Light Pollution are totally useless.

Therefore, if we only attack the problem of the L.C. the capitalist side of the problem, it may backfire on us.

LEDs are diodes that emit light, they are an essential component in electronics. Their discovery was in the 80's and the growth of their and the growth of their use is being exponential.

Another advantage of LED lighting is that it is more or less directional, in principle a single LED can only partially illuminate a of 180° or less, unlike most LEDs.

Unlike most lamps, which are practically omnidirectional in practically their illumination is omnidirectional.

A great opportunity:

Another particularity that can be of great help to us.

is the quick start-up of this light source. As It only takes one ten-thousandth of a second to illuminate at full to illuminate at full power, in contrast to ordinary road lighting, which takes several unlike ordinary road lighting, which takes several minutes to reach its full

full output.

This can open up a new field of action, given the fast response of LEDs, it can be the fast response of LEDs, intelligent lighting can be , so that the illumination lighting can be made intelligent, so that the illumination increases or turns on only when necessary.

Apart from the savings that this would entail, it would also increase safety, as the higher increase in safety, since the higher level of illumination in an area would lighting in an area would indicate the presence of people, and it would be easier to people and it would be easier to adapt the lighting to the needs of the moment.

It should also be noted that LED lighting is ideal for artificial vision and illumination for security cameras security cameras, since for this type of vision, monochromatic lighting is better monochrome illumination is better for this type of vision, which is very easy to obtain with LEDs without the need for filters.

In this case, we can also illuminate where necessary with monochromatic light necessary with monochromatic light with a higher economical efficiency than with Low Pressure Sodium lamps. (color LEDs are much more efficient and cheaper than white LEDs).

The reliability of these devices is much higher than reliability of these devices is much higher than that of all other lighting systems (5% failure (5% failure rate compared to 10% for its follower).

Disadvantages of LED lighting:

Apart from those already mentioned, in C.L. issue, that more than defects of the LEDs themselves, they are dangers of their misuse (let's not fool ourselves, if it can be misused, it will be misused). As technological solution is impeccable. However, it has several very big disadvantages: it is new, its price is high price is high and the technology is not yet fully developed. But these disadvantages disadvantages will sooner or later be remedied and

nothing will stop LEDs from invading our streets, houses and our streets, houses and establishments.

Conclusion:

We need to catch up with the consequences of this new technology, since almost almost nobody knows about it, and if we do not act in time can have serious consequences. It is necessary to think that once installed, this light source can last up to 22 years or more.

LED lighting can be a solution to many problems, but for astronomers it can also be a can also be a serious danger. If we do not focus on the darkness of the night as a fundamental value, we may fundamental value, we may lose a battle in this war for good this war for good illumination.