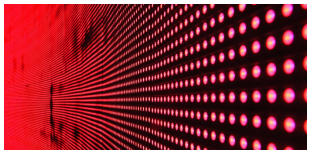
What are the advantages of LEDs?



When it comes to outdoor lighting, LED technology is more effective and energy-efficient than all of its competitors.
Read on to find out why.

Nowadays, **LED lighting solutions** outperform all traditional sources on the **global outdoor lighting market**. And rightly so: let's have a look at all the major advantages of LED technology.

The 6 main advantages of LED lighting

1. **Adaptable**
   - LEDs have a **Color Rendering Index** (CRI) from 70 (cold white) to 80 (warm), even 90.
   - LEDs emit a **saturated colour palette**, offering pure and deep hues.
   - LEDs allow the **white colour temperature** to be chosen (from 2200K to 10000K).
   - LEDs facilitate **trichromy** and **quadrichromy**.

2. **Versatile**
   - LEDs are **instantaneous**: they emit 100% of their flux as soon as they are turned on. This allows for instant operation of installations (no warm-up time), as well as light effects such as flashes and strobes.
   - LEDs are **dimmable** from 0 to 100%: dimming and fading across the entire colour spectrum is possible when combined with intensity controllers, motion detectors and time switches.
   - LEDs are **focusable**: their beam can be orientated and focused as needed using adapted optics.
   - LEDs are **modular** and adjustable: innovative designs thanks to the fact they are small, come in an array of shapes and capacities, and can be used alone or in a group.

3. **Powerful**
   - LEDs can achieve **luminous flux** of 160 to 200 lm/W.
   - LEDs' flux can be regulated between 0 and 100%.
   - Coloured LEDs do not require a colour filter which absorbs part of the flux.

4. **Economical**
   - LEDs have **outstanding lifespans** of over 50,000 hours, at which point they still emit 70% of their original flux. Correctly used, an LED in operation 4 hours a day will have a 70% flux after 35 years! LEDs are **extremely robust**, and resistant to shocks, vibrations and travel.
   - Les LED sont d'une **robustesse à toute épreuve**, très résistantes aux chocs, déplacements et vibrations.
   - LEDs minimise **service downtime** and **replacement** costs. They are thus suitable for difficult-to-access structures such as bridges and building façades.

5. **Safe**
   - LEDs eliminate **fire risks** because they emit little infrared radiation and give off little heat.
   - LEDs reduce **electrocution risks** because they often use low-voltage power.

6. **Eco-friendly**
   - LEDs emit no **harmful electromagnetic waves**, nor **UV rays**.
   - LEDs help cut **electricity consumption**.
   - LED reduce light pollution caused by outdoor lighting.

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LEC's LED lighting of five fountains in Lyon's city centre has drastically cut the city's electricity bill.

The drawbacks of LED technology

Certain precautions must be observed in order to take full advantage of the advantages of LED technology.

- LEDs must be protected from **humidity** by watertight casings.
- LEDs are sensitive to **high temperatures**, controlling their temperature is vital to maintaining their flux and lifespan.
- LEDs are sensitive to **overvoltage** and **static electricity.**
- LEDs are more difficult to install in **360° lighting installations.**

So LED lighting may require a bit of care and attention, but these disadvantages are greatly outweighed by the many advantages that pave the way for a bright future of **innovation**, **energy savings** and **sustainable development**.

Want to know more? Check out LEC's LED products and projects.