

LED LIGHTING: TOP 10 TECHNOLOGY EVOLUTIONS

1 We can achieve better uniformity, because our ability to control the light source has greatly improved

Modern LED technology makes optical control easier and more precise compared to its HID and compact fluorescent counterparts. This is especially useful for outdoor and roadway lighting.



2 Better control of the light source equals reduced wattage or higher lumens per watt

Today's LEDs use less energy than other light sources such as fluorescent lamps and there's no light lost. Today's LEDs are just as luminous as their energy-hungry counterparts.



3 Integrated controls boost our ability to control light levels from inside LED luminaires

LED lighting can be dimmed in large-scale systems (during daylight hours). Controls make it easier to score big energy savings with little to no commissioning.

4 Reduced pole heights are popping up in new construction, and even some retrofits, thanks to wider light distribution

Because we can control the light more effectively, we can move the light closer to the ground and reduce the wattage.



5 When it comes to lumen depreciation, LEDs are knocking it out of the park

The lumen depreciation factor for the average HID lamp is 0.6. For LEDs, this number surges to above 0.9. This means you'd have to add 40 percent more HID luminaires and power to go head-to-head with comparable LEDs, which would require 10 percent or less additional power over time.

6 Advancements like Eaton's WaveStream® LED technology are taking design flexibility to a whole new level

This unique, integrated set of components creates a luminous, glare-free plane of light that can be designed to fit almost any residential, commercial or industrial application. As a result, architects, contractors and others are thinking about lighting environments in an entirely new way.

7 LED luminaires don't fail—they just depreciate

Today's LEDs slash maintenance costs by eliminating the need for expensive, single-lamp replacements or frequent group relampings. Most LEDs take 50,000 hours to reach 70 percent depreciation, at which point they should be replaced. In that amount of time, you'd have to do about 13 traditional relampings for a 10,000 hour lamp.



8 New controls technology can extend LED life even further

Controls systems reduce the amount of power used, which is a primary cause of lumen depreciation. By dimming your LED lights, you can widen the gap even more.

9 Network systems are coming

A gold mine for data hounds, network systems capture analytics that will be particularly useful in retail environments. For example, which store aisles get the most traffic, and how do traffic patterns fluctuate at certain times of day.

10 Get ready for the do-it-all LED

Remember when a phone was just a phone? Now you can count steps, pay bills, book flights, watch movies, order pizza and more—all on a device that fits in the palm of your hand. LED luminaires are headed that way, too. Lighting engineers are enhancing the value of already-advanced LEDs by adding functions like cameras, occupancy sensing and wireless networking.

Follow the charge »