

NOT ALL **LED** LIGHTS ARE CREATED EQUAL



WE WERNER ELECTRIC

LED lights are still a “new” and constantly evolving technology. According to the Department of Energy, LEDs use 75 percent less energy and last 25 times longer than their incandescent predecessors. Widespread use of LEDs will amount to enormous energy savings. By 2027, use of LEDs could account for \$30 billion in energy savings.

LEDs are ideal for industrial uses like streetlights, parking garages, outdoor lighting, refrigerator lighting and other task lighting, in addition to myriad residential and commercial uses.

So it's not a matter of if you should use LEDs in your installations, it's which ones to use, and where.

However, it's often difficult to explain to customers how using lights that might be more expensive now can save money on the back end. Not only that, but not all LEDs are created equal. How do we understand the difference between a \$150 light and a \$500 light? How do you explain that to your customer in a bid or proposal? Or how do you justify it in your business when you want to manage your profit?

5 THINGS TO CHECK OFF WHEN EVALUATING THE PRICE DIFFERENCE IN LED LAMPS AND FIXTURES

1

TEMPERATURE

How does temperature in a space affect an LED? Generally, the cooler the space, the higher an LED's light output. In warmer spaces, the temperature of the semiconducting rises. The fact is, temperature can have a massive impact on the driver and significantly reduce the lifespan of a lamp or fixture. There's also the matter of junction temperature, which is affected by room temperature as well. Doing all you can to control temperature will increase the lifespan of your LED.





2

STANDARD CERTIFICATIONS

Approved standards are the result of independent committees, which decide whether a lighting solution is certified to UL, ETL, DLC and other standards. If the light says UL-recommended parts, but the entire system has not been tested, it is not certified. Here's what these designations mean:

- **UL** (Underwriters Laboratories) is one of the most common certifications, and signifies that the product meets the UL's safety requirements.
- **ETL** (Edison Testing Laboratories) certification is proof of product safety, confirming that it has been tested and has met the U.S. minimum standards for safety.
- **DLC** (DesignLights Consortium) ensures that the product is energy efficient. The baseline for this is the popular ENERGY STAR, but oftentimes regionally it goes beyond that.
- **TM21 and LM70** are the testing standards for the life span of an LED fixture. Because of the cost, not every manufacturer goes through TM21 and LM70 testing and instead simply uses LM90 with inflated lifespan ratings. So a fixture might say it lasts 100,000 hours and costs \$100 while another manufacturer who DOES have TM21 testing data has the same fixture for \$200 with a lifespan of 50,000 hours. To the un-informed person the first one seems the better buy, but it's not.

3

PHOTOMETRICS

Photometry measures the amount of light on a specific area or task. And it's not always as easy or straightforward as it may sound. A lot of factors come into play, including the color and intensity of the light, and what it has to illuminate. Spending more to purchase one fixture instead of two lesser quality and less expensive fixtures may offer a better experience for your customer, and reduce wiring and labor costs.

4

QUALITY OF THE LED

When LEDs are manufactured, there are the main suppliers in the market like NICHIA, CREE, LUMILED, OSRAM and Toyoda. In addition, there is a process called binning when it comes to LED chips. Each LED chip is "binned" for quality, so one fixture manufacturer might want high-quality LED chips from that sorting or binning process and another wants a far cheaper quality. This can account for a huge cost difference in very similar fixture types, and poorer quality binned LED chips will be cheaper but the light quality could be awful.

5

CONSTRUCTION OF THE LED ITSELF

How well is it protected from the elements? The IP rating (Ingress Protection) will tell you (and your customers) that. It has to do with how much protection the light has against sand, dust, dirt and liquids like water. Understanding the rating means understanding that it's about two numbers. The first is the protection against solids like dust, and the second is the amount of protection it has against water.

The higher the number, the higher the level of protection. The first number ranges from 0-6, the second from 0-8. The IP rating will tell you where you can use that specific LED. For example:

- **IP65.** This means it's dust, debris and water resistant, but NOT submersible. In other words, these lights are not waterproof.
- **IP66.** You're good to go on dust, and it will also be protected against heavy rain.
- **IP67.** Dust isn't a problem and this LED can be submerged temporarily.
- **IP68.** Bulletproof when it comes to dust, dirt and water.

These IP ratings are basically a guide to where you can use the lights.

Lights with low IP ratings should be used indoors, or inside sealed signage or products. The higher the rating, the safer they are in outdoor environments, especially wet spots, or areas with heavy foot traffic. Think durability and you'll get it. The higher the rating, the more durable the LED will be.

In sum, many factors go into the decision about which LED lights to use to best meet your customers' needs. Working carefully with the customer and explaining the differences in options (and the price differences that come with them) is the best way to make sure their needs are met, now and in the future.