



## How to Find the Right LED Lighting Product

Applicability: All LED Products

Unlike other lighting technologies, solid state (LED) lighting as an emerging technology in the general lighting industry is just at its beginning – a kind of new frontier. As the industry continues to evolve and mature, LED lighting brings with it a bright future. But, until the future arrives, we live in the Wild West where there are few rules, few standards, and little enforcement within the industry.

Many luminaire manufacturers have emerged with LED lighting products trying to stake a claim. Some are dedicated to furthering LED lighting's future while many are just trying to cash-in. Until law and order becomes the norm, consumers are left with the difficult challenge of trying to determine which products are best suited for their applications.

To complicate matters, choosing the right LED lighting product is akin to buying an automobile which comes in all shapes and sizes and performs differently in various environments. Like the automobile, LED lighting is a complex system with many options and features that are chosen to fit differing applications. There is no "one size fits all" product. Consumers have many criteria to consider when selecting the right LED system.

The question that often arises is, "how do I make a true comparison between multiple products?" Here are some suggestions on how to compare LED lighting products:

### "Get the Facts"

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Every application is unique. Be sure to get the right documentation that fits the requirements of your application. Here are some of the typical documents a product will have. Your application may only need some of these or it may need them all.

- ✘ Specification sheets or datasheets are provided by the luminaire manufacturer and should detail all the pertinent technical details about the product.
- ✘ Photometry provides information about a product's light output. Request photometry tested to IESNA LM-79 from manufacturers.
- ✘ Lumen depreciation tested to IESNA LM-80 provides information about the life of the LEDs used in a manufacturer's product up to 6000 hours. Testing for 6000 hours takes over eight months. Expect more manufacturers to have this data as the industry grows. In the works is IESNA TM-21 that will extrapolate LM-80 data beyond 6000 hours.
- ✘ Lighting Facts, a voluntary program sponsored by the U.S. Department of Energy (DOE), provides consumers a short list of product performance data.
- ✘ Energy Star another voluntary program sponsored by the U.S. Department Agency and the U.S. Environmental Agency focuses on setting a minimum standard for energy efficiency.



# Application Notes

## “Apples and Oranges”

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When comparing products using specification sheets, be sure you understand the terms the manufacturer is using to describe their product's performance. Also, understand the testing conditions under which that product's performance data was collected. There are many ways to measure performance and just as many ways to describe it.

## “Don't be Color Blind”

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Correlated color temperature (CCT) describes the color of the light coming from the LED. When comparing lighting products one to another, be sure to look at the same color temperature. Terms such as “warm white”, “cool white”, “day white” are somewhat subjective and may differ from manufacturer to manufacturer. Instead, look for color temperature in terms of Kelvin (K), which is a more absolute way of describing CCT. This is important because LEDs with different CCTs will perform differently and may not provide a true “apples to apples” comparison. For example, a 2700K (warm white) LED is typically less energy efficient than a 5000K (bright white) LED.

## “Every Penny Counts”

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When compared to existing technologies, LED lighting promises much longer product life. If product cost is a concern, it becomes important then to consider the total cost of ownership. This takes into account product's performance, maintenance costs, and energy savings through the life of the product.

## “Seeing is Believing”

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Evaluate different products by performing a field evaluation within your space or a similar sample space. Consult a lighting design expert to determine how much product to sample and the best way to go about conducting a field evaluation. Also, look for case studies and completed installations available for visiting.

## “Be in the Know”

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As mentioned before, LED lighting products are complex systems. The key to truly understanding and comparing LED lighting products rests in education. Seesmart LED is dedicated to assisting consumers in that education. Visit [www.KillTheWatts.com](http://www.KillTheWatts.com) to keep yourself up to date on the latest industry information and trends.

Contact Seesmart® at 1-877-578-2536 between 9 a.m. to 5 p.m. PST, Monday through Friday or visit [www.seesmartled.com](http://www.seesmartled.com) for more information.