TECH TIPS:
Selecting a Light Source
The Real Questions to Ask

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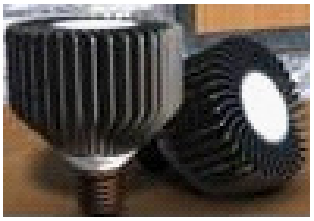
Choosing a light source for your Point of Purchase, Point of Service, or Exhibit should be based on several selection factors**.**

1. SELECTING YOUR LIGHT SOURCE

When designing you Point of Purchase Display deciding on the type of light source for the system is a key decision. One of the biggest decisions you and your customers are dealing with is the decision on technology. It greatly impacts the cost of the display and the profitability and performance of the design. This decision is based on many factors and has a large impact on both how merchandise will be shown and sold at retail, as well as maintence costs and issues.

2. IGNORE THE MARKETING HYPE



The news in the marketplace today is that LED is a better technology when compared to fluorescent. The marketing material is prejudicial and not presenting you with all the facts. Most light source comparisons are completed taking laboratory only (not commercially available) LEDs and comparing them against the poorest fluorescent light sources. These are prejudicial comparisons.

When a proper comparison is done – one would compare a commercially available LED against the best available grade commercial grade fluorescent. Then, the results are not nearly so dramatic.

Be sure you are considering factors relevant to your application when you make your comparison. I.e. If the display is for short term use, then lamp life is not relevant, but quick maintenance would be.

We have no vested interest in promoting LED or Fluorescent lamp sources.

We supply both to our customers, based on their specific project needs. We want what will help you sell more products off your display at retail, at the lowest cost. The goal of this article is to help guide you as you make light source choices for your Brand.

3. WHAT IS THE APPLICATION?

You need to understand the context to recommend a lighting source and overall system. LED's are a proper choice for a display application where you need color control or highlighting and spotting for product. In applications where you want concentrated light – such as accent lighting and certain types of display lighting, artwork, and commercial down lighting – these types of application lend themselves to LEDs. They use concentrated pools of light. Watch system design for hot spots and glare!

Mr. Siegel, a Lighting Certified (LC) graduate Electrical Engineer (EE), is President of Crownlite Mfg. Corp., a prime manufacturer of lighting systems for POP and Display. He holds memberships in the Illuminating Engineering Society of North America, where he contributed to two national committees: Luminaire Design and Light Control and Polarized Lighting, and the Institute of Electrical and Electronic Engineers. He is certified by the Association of Energy Engineers as a Lighting Efficiency Professional (CLEP), by the EPA as a Surveyor-Ally, and by Con-Edison. He has spent the last 25 years in the design and manufacture of lighting systems and luminaries, and in the education of others in the principles of good lighting.

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Concentrated light can be detrimental if not handled properly. Speaks to the quality of the lighting system. Fluorescents lend themselves to applications that require higher lumen output, can use more diffuse/ spread lighting.

4. LIFE OF THE LIGHT SOURCE

One of the most promoted advantages of an LED is their long lifetime. However, LED's dim over the life of the use. The lighting fixture itself will not change its efficiency; but, the LED will start putting out less light. Less expensive LED's will burn out faster. Therefore, when discussing the lifetime of an LED lamp the question is not "how many hours does the LED last"; but rather– "What is the L70 point, the point when the LED has depreciated down to 70% of its light output?" That is considered to be the end of useful life.

5. CONSIDER THE ENTIRE SYSTEM NEEDS

Considering the light source alone is not enough. One must consider the source within the lighting system in order to determine what will best light your Brand's products at retail.
LED's are very sensitive to the environment. Fluorescents not so much.
As the LED light level drops, you lose the attention being drawn to the product being shown on the display. At a certain point you have to maintain the system.

5. MAINTENANCE REQUIREMENTS

Both LEDs and Fluorescents have their maintenance issues. There are things that reduce the efficiency/ efficacy of the lighting source or system. i.e. Voltage, dirt, heat
LED: LED systems do not get maintained. The part of the LED unit that would be replaced is the circuit board. For long term installations LED may not be the way to go. The cost of maintenance will be replacement of the entire lighting system, since the circuit boards are obsolete or not readily available. Typically, the circuit boards are the part of the system that would be replaced and they require the exact same circuit board. There are no standard components so you are locked into your original supplier -- many of whom are in China. Additionally, the technology is changing so fast, that your board may be obsolete when you want a replacement.

Fluorescent: Fluorescent maintenance is easy. It typically involves opening the lighting system, wiping it off, and replacing the lamps. Occasionally, there is a ballast change. Fluorescent lighting sources are an established technology of 50+ years. Ballasts and lamps are standard and are sold by major manufactures, with world class brands, and are readily available, since they are all compatible, very inexpensive relative to replacing an entire LED system, and are made domestically – they are readily available.
While a single cycle of fluorescent maintence is far cheaper than a cycle of LED replacement; your may have to do 1 or more cycle of fluorescent replacement, before you have to do a cycle of LED replacement. That might be true if you compare a better quality LED against a poor fluorescent light source. If you pick a quality fluorescent lamp – this is not the case.

6. LIGHTING SYSTEM EFFICIENCY

Marketers claim that LEDs are more efficient than fluorescents. These comparisons are made with the best performing LED's against the lowest performing fluorescents. What light source is actually, readily commercially available? A proper comparison is a best of breed fluorescent against a readily available LED. A compact fluorescent (Worst type) against an in-laboratory only LED (best) is skewed.

7. COST VERSUS LIGHT OUTPUT

When evaluating LEDs' remember that the cost of the lighting fixture is indicative of the quality of the LED. In POP industry cost is a major issue. Always looking into less expensive product. Buying product in the lowest end of the range. The 100+ diodes are the best, high class lighting systems. Anything above 120 is very exclusive or only in the laboratory. So the high output systems are not readily commercially available.

Fluorescent lamps will reliably give you the same or better lumen output than the typical LED fixtures that are out there at a far lower cost.

8. LIGHT DISTIBUTION

LED light pushes forward in the shape of a cone. Fluorescent emits 360 degrees around.
Not just about the light source – it becomes about the entire lighting system. Not as cut and dry as it sounds. Top optimize the distribution for the application both for fluorescent and LEDs a designer will use reflectors – you need to look at not just the light source, but the lighting system and how it directs the light. Optimize the distribution for the application. So we show the product in its best light.
This is where the lighting system truly comes into play. Fluorescent lamps light output needs to be direct by the system to the area you want to showcase. This is how you get the lumens to the proper area. The lighting designer is critical.
Since an LED source emits light in the shape of a cone, even if it yields less lumen output; all of it light is getting concentrated at the product you are showcasing. While with an LED you can use a lower lumens/watt for the quantity of light, realize it's not any more efficient - it's just concentrating the light.

9. AVAILABLE SPACE FOR DISPLAY

It is important to look beyond the source choice to the entire system being designed. The application and display design determine how much room is available for the lighting system. This available space is a critical factor in determining the proper lighting system. Thermal considerations (lamp and heat sink size) will impact the system choices greatly.
Marketing material may claim that LEDs are preferable since they do not put off heat. In reality both put out heat and put out the same amount of heat.

10. ENERGY CONSUMPTION

A properly designed lighting system can direct light more effectively, requiring less energy. The way you compensate for the lower light output is by changing the distribution.
LEDs are lower energy consumption and lower heat because they are lower wattage. Because they are lower wattage they have lower light output.
Fluorescents…..

11. INSITU TESTING

To properly test a POP lighting system it should be tested in the environment in which it will be used or Insitu.
This is specifically true for LED's since they are much more sensitive to heat. When determining if an LED system will work effectively in the field one must know how the LED was tested and if the DISPLAY system is being designed to handle the LED thermal considerations?

At CMC we will help you think thru this decision process and help you get the best lighting, cost effective, does the best job selling product at retail. The goal is not selling lighting fixtures. The goal is selling more products off your display at retail. Which source is really the best source? Which fixtures are really the best for this application? Form a cost and performance point of view. Together we are a team. You are expert at what you do. We are experts at what we do. At Crownlite, we look at the application and your design and based on the merits of both technologies, will recommend the best lamp technology for your project.

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