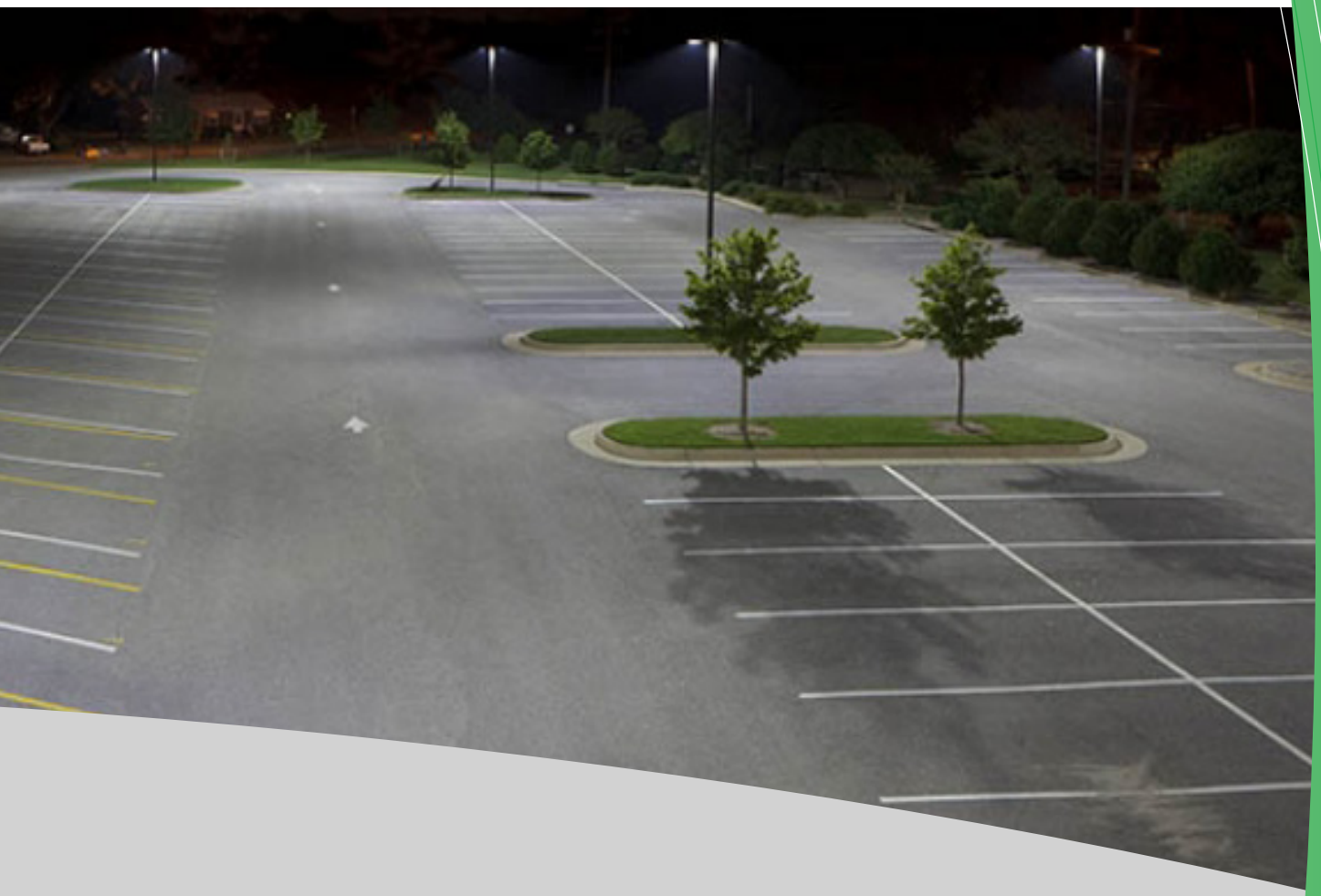
STOUCHLIGHTING®
LED LIGHTING SOLUTIONS



Parking Lot and Area Lighting Applications

Definition

What is a "Parking Lot Lighting" application?

Parking Lot Lighting is a term to describe the outdoor lighting that is commonly mounted on poles and located in parking lots, pathways and driveways. This type of exterior lighting is generally used to provide illumination to areas for vehicle and pedestrian use, with the most frequent attribute being that the light fixtures are mounted to poles. It is not uncommon to see multiple fixtures mounted on a single pole, and the specific mounting methods may vary significantly.

Below are a few image examples of outdoor lighting fixtures in Parking and Area Lighting applications that you may recognize. This is by no means representative of all the types of outdoor pole lights that exist, it is just a quick visual sample.

Most existing Parking and Area Lighting applications utilize High Intensity Discharge (HID) lamps such as Metal Halide, High Pressure Sodium, and - if they are very old - Mercury Vapor Lamps.

Here are some comparison blogs you can read to learn about the differences in these types of lamps:

- Lighting Comparison: LED versus HID
- LED versus Metal Halide Lights
- LED Versus High Pressure Sodium and Low Pressure Sodium

Common Issues

Common issues with coventional parking lot and area lighting fixtures and lamps.

All HID lamps have some inherent characteristics that can lead to issues for those managing exterior lighting for an organization or facility.

Energy Costs

Common (HID) Lamp wattages used for Parking lot and Area Light Fixtures range from 100 Watts to 1000 Watts. The higher the wattage, the higher the light output. The function of the area being illuminated, combined with the quantity, spacing, and mounting height of the poles and fixtures plays a role in what existing wattages are utilized. A 400w or 1000w HID Fixture (very common wattages for Parking and Area Lighting) can cost up to $209 and $525 to operate per lamp, per year, in electricity cost alone.

Maintenance Costs

Maintenance costs are often a big concern for outdoor lighting applications such as Parking and Area light fixtures. In additional to the potential lamp lifetime concerns, Parking and Area Lights often require the use of a bucket truck or lift to change out a lamp or a Ballast, because they are often on poles in excess of 15ft high. Many buildings and facilities do not own a bucket truck or lift, and as a result have to hire an outside contractor to maintain these fixtures. These expenses can really add up over the course of a few years. For example, it can cost up to $1,200 in labor and materials to maintain a single parking or area light fixture over the course of 3 years.

Lighting Performance

Depending on the type of HID Lamp your facility utilizes, the performance characteristics of your Parking and Area Lighting can vary significantly. For example, if you are using Metal Halide lamps you may see light that is "Whiter", but these types of lamps tend to have accelerated lumen degradation, meaning the light output of the lamps decrease quickly after initial install, and as a result the overall lifetime of the lamp decreases (we have all seen those Parking Lot fixtures that have "pink" lamps that are barely providing any lighting on the ground). If you are using High Pressure Sodium you may see longer "useful" life as these lamps see less lumen degradation then Metal Halide, but their fuel structure produces a very "Orange" light with a very low Color Rendering Index. Basically, you trade a longer life for a poorer quality light, in regards to visual perspective.

Benefits of LED

Benefits of LED parking lot lights

Outdoor LED Lighting fixtures, such as LED Parking lot lights, provide some excellent benefits for Parking and Area applications because of how they GENERATE light and how they DISTRIBUTE light. Light Emitting Diodes generate light via a semi-conductor, as opposed to the consumption of a "fuel source" like in HID lamps. In regards to "distributing" light, LED fixtures commonly utilize "Multi-Point" sources, meaning the fixtures have Multiple Diodes with individual optics. When you compare this to the way most HID fixtures distribute light (with a single bulb and reflectors within the fixture), the result is light that is more evenly "distributed' across a surface.

The three most common benefits of LED parking lot lights:

Energy Savings

Common wattages for LED parking lot lighting can range from 40 Watts to 600 Watts, often resulting in a 40%-60% reduction in energy consumption. This is a result of how the light is generated (see above). What this means for your facility is savings of up $300 per fixture, per year, in electricity costs.

Maintenance Cost Reduction

Again, due to the way LED's generate light, the way they progress through their functional life is much different. Instead of ceasing to function properly once a fuel source is significantly reduced, LED generated light output degrades very slowly over time. As a result, the functional life (often in excess of 100,000 hours) of an LED product can be significantly longer than that of an HID Lamp... which in turn drastically reduces the costs for maintaining a Parking and Area fixtures over a longer period of time.

Lighting Performance

Moving on to the way LED fixtures "DISTRIBUTE" light: as a result of the Multi-Point design, LED outdoor lighting fixtures for Parking and Area Lighting application often provide a very evenly distributed light pattern. What this means is that light levels across a given surface will vary less as the distance from the pole or fixture changes. HID fixtures often produce a "bright spot" directly underneath the fixture with light levels decreasing drastically as the distance from the pole increases. LEDs mitigate this problem through even distribution. The result, in regards to LED vs HID, is a more even foot candle distribution from the LED conversion. In addition to the even distribution of light, LEDs are available in a range of color temperatures, and as a result provide a range of options to increase the visual perception of "brightness".

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Next Steps

How do I determine what the next step convert to outdoor LED Lighting for Parking lot and Area Lighting applications?

The first step is to speak with a LED lighting solutions provider that is manufacturer neutral. Why this approach as opposed to the company you may have used for the past several years? Unless that company has a focus on providing LED solutions, it is unlikely that they will have the performance-focused mentality that is required to obtain the desired results of an Exterior LED Lighting conversion. A crucial step in any LED project is understanding that LED technology is NOT a commodity. Prior decades consisted of building facility managers and owners evaluating product options purely on cost, assuming that all of the options in consideration were equal in quality. This is not case with outdoor LED Lighting.

A solution focused supplier should ask you about your project objectives. Are there budget constraints, energy reduction targets, lighting performance requirements, etc? The appropriate partner will want to get an understanding of your desired OUTCOME, not just what specific products they can sell you. Not all LED products are created equal. There are different levels of value from different manufacturers for different applications, and by working with a company that has the product expertise to recommend a solution that meets your project priorities, you will ultimately achieve the best results.

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866-964-8559 | Info@StouchLighting.com | 525 Turner Industrial Way Aston, PA 19014