

LED Outdoor Lighting Project Profile

KIA AutoSport

Columbus, GA 31909

Situation

When KIA AutoSport owner Monroe Lee was developing plans for a new KIA dealership in Columbus, Georgia, to complement his KIA AutoSport dealerships in Pensacola and Tallahassee, Florida, he wanted the facility to be environmentally friendly. He knew that one way to accomplish this goal was to design a facility that would reduce the energy consumption from levels experienced at a typical automotive retail facility, and that outdoor lighting was among the largest users of electricity at a dealership.

A key component of auto dealership facility design is outdoor lighting, as dealerships need good lighting to highlight their vehicle inventory. Until recently, this has been accomplished by using many 1,000-watt metal halide high intensity discharge (HID) light fixtures.

Action Plan

In the fall of 2011, Mr. Lee met with a Georgia Power Lighting Services account executive to discuss outdoor lighting for the new facility and options available for meeting his energy efficiency goals. Light Emitting Diode (LED) lighting was proposed by Georgia Power as an option for consideration as it was capable of providing both energy savings and the quantity and quality of light needed to showcase the planned 350-vehicle inventory.

A lighting layout and photometric analysis were developed for the new facility site using LED light fixtures. Since this was a new facility, lights and poles could be placed to provide optimum coverage and minimize the location of poles in vehicle display areas. Because of the unique characteristics of LED lighting, an LED lighting system provides lighting equal or superior to HID lighting at a fraction of the HID system wattage.



The LED lighting plan was approved and plans were made to begin the installation as soon as the site was ready for lighting. Georgia Power completed the installation of the LED lighting system in July 2012.

The lighting system utilizes sixty-nine 202-watt GE Evolve™ LED Area Lights mounted on thirty 25' poles. LED fixture mounting is a mix of one, two and four fixtures per pole.

LED fixtures have a correlated color temperature (CCT) of 4000K, a color rendering index (CRI) of 70, and lumen output per fixture is 13,620. **Results and Benefits >**

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Results/Benefits

- New LED system: sixty-nine 202-watt fixtures = 13,938 watts
- 6.5 average foot candles (versus typical HID of 30 to 50 foot candles)
- 3.5:1 uniformity ratio (versus typical HID of 6:1 to 10:1 ratio)
- Improved LED uniformity is perceived by the eye to be equal to light output of 1,000 watt HID designs
- Substantial reduction in energy usage related to outdoor lighting compared to HID
- LED lighting is directional – all light is directed toward the area to be illuminated
- Minimizes/eliminates light trespass (Dark-Sky friendly)
- LED light levels equal to or better than HID system
- Improved lighting uniformity (eliminates dark spots and hot spots)
- Vehicle display and vehicle color representation greatly enhanced
- Long fixture life and reduced maintenance requirements
- Environmentally friendly (no hazardous materials to recycle, reduced energy usage lowers greenhouse gas emissions)
- Instant-on/no warm-up time
- Supports the National Automobile Dealer Association's (NADA) Energy Stewardship program

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