

LED Outdoor Lighting Project Profile

Lexus of South Atlanta

Union City, GA 30291

Situation

Following a change of ownership and management at the dealership, a decision was made to implement a "green" initiative at the facility. Being "green" included changing the existing outdoor lighting to a more environmentally friendly and cost effective lighting system.

The existing High Intensity Discharge (HID) outdoor lighting system at the dealership consisted of 138 1000-watt metal halide galleria fixtures mounted on 54 poles. The poles were a mix of mounting heights – 30', 35' and 39' and light placement was a mix of single fixture, 2 fixtures and 4 fixtures per pole.

Action Plan

Dealership management began meeting with Georgia Power's Lighting Services Business Unit in the summer of 2011 to develop a plan to replace the existing metal halide outdoor lighting with Light Emitting Diode (LED) lighting. A new lighting layout and photometric analysis were developed to optimize the outdoor lighting levels for the facility and to use the existing poles and pole locations. An LED lighting plan was approved and new LED fixtures were ordered. Removal of the HID lighting and installation of the LED lighting fixtures was completed in December 2011.

The new LED lighting installation utilized a total of 82 General Electric Evolve Area Lights on 55 poles. LED fixtures have a Correlated Color Temperature (CCT) of 4000K and a Color Rendering Index (CRI) of 70. One new pole location was added to illuminate an area of the property that had not been illuminated with the old system. The other 54 pole locations were retained from the old lighting system and approximately half of the existing concrete poles were replaced with shorter fiberglass poles. LED fixture mounting is mainly 1 or 2 fixtures per pole plus 3 poles with 4 fixtures per pole.

Results and Benefits >



1000W metal halide; 19.8 average foot candles



202W LED; 7.9 average foot candles

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Results/Benefits

- **Old HID System:**

138 1000-watt metal halide fixtures = 138,000 watts

- **New LED system:**

67 202-watt fixtures = 13,534 watts

15 270-watt fixtures = 4,050 watts

Total = 17,584 watts

- Substantial reduction in energy usage related to outdoor lighting
- LED lighting is directional – all light is directed toward the area to be illuminated
- Minimized/eliminated light trespass
- Greatly improved lighting quality and uniformity (eliminated 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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