

BetaLED® Project Brief Overview

Johnson Controls Incorporated – Glendale, Wisconsin



PROJECT SUMMARY

End User:	Johnson Controls Incorporated (JCI)
Application:	Parking lot and parking structure conversion and new construction
Products:	<p>A total of 285 THE EDGE luminaires by BetaLED®</p> <ul style="list-style-type: none">• 134 pendant mount parking structure luminaires; Type V optics with 100 LEDs• 20 direct arm mount parking luminaires; Type III optics with 100 LEDs• 9 wall mount security luminaires; Type III optics with 40 LEDs• 122 area luminaires; Type III optics with 100 LEDs
Benefits:	<ul style="list-style-type: none">• BetaLED outdoor luminaires contribute to a reduction in energy and operating costs.• 118-watt BetaLED area luminaires will achieve a 45-percent energy savings compared to 175-watt metal halide fixtures.• A predicted lumen depreciation of less than 10 percent at 50,000 hours of operation.• The BetaLED area luminaires provide a two-and-a-half foot candle average parking lot layout with an even 5:1 spacing.• An improvement in overall illumination is achieved with significant improvements in uniformity.



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Sustainable campus makeover includes BetaLED

Johnson Controls Incorporated (JCI) campus expansion project in Glendale, Wisconsin includes plans to achieve LEED Platinum rating from the U.S. Green Building Council and reduce baseline operating costs by 75 percent. A 33-acre complex is home to the company's global corporate headquarters for the power solutions automotive battery business and a power solutions research center. The company's \$73 million transformation, aimed at achieving status as the World's Most Sustainable Campus, includes the installation of 285 energy-saving THE EDGE luminaires by BetaLED.

BetaLED parking, security and area luminaires bring energy efficient lighting to a new parking structure, resurfaced parking lots and new campus streets. The four-level, 419-stall parking structure is illuminated with 134 pendant-mount parking luminaires. There are 42 parking structure luminaires on three floors and 16 poles with area lights on the upper deck.



As a company that guides customers to use products for improving sustainability, JCI wanted to progress its own environmental footprint. It was a tremendous feat that involved moving hundreds of employees to temporary work spaces for as much as a year as building and remodeling projects were completed. Ward Komorowski, director of facilities and building services for JCI, oversaw the campus renovation. He enlisted the help of electrical engineering design firm, Leedy and Petzold Associates LLC, to plan sustainable lighting solutions including the outdoor BetaLED installation.



Leedy & Petzold designed the application to meet LEED requirements and City of Glendale lighting ordinances. There were restrictions on light levels and mounting heights that needed to be considered. James Haug, P.E. and Principal at the firm, compared 175-watt metal halide fixtures to 118-watt BetaLED area luminaires and calculated a 45 percent energy savings for the parking lot lights alone.

"We looked at other LED solutions but were convinced the BetaLED luminaires would offer a superior solution because of a thermal design that handles the heat better and a more advanced optical design," said Haug. "We are confident that the BetaLED solution will provide worry-free operation for the next 12 plus years. The visibility is as good as or better than the metal halide provides."

Haug is pleased with the lighting design that achieves safe light levels and energy efficiency. While meeting a height restriction in accordance with a local ordinance, superior lighting control yielded impressive performance. "Installing THE EDGE area luminaires at a 15-foot mounting height provides horizontal footcandles that are as good as the vertical footcandles – a nice scale that is just right for uniformly lighting the space according to code. Everything is evenly lit, not overly lit, and you just don't get that from metal halide lights."

