



Education - Upgrade

Milwaukee Area Technical College

Milwaukee, WI

In an effort to improve lighting performance and save energy, college officials recently retrofitted exterior campus lighting at all four campuses with Cree® luminaires.

- Anticipated annual energy cost savings of 71 percent
- Estimated annual maintenance cost savings of more than \$25,000 for up to 20 years
- Cree luminaires help the college reduce its environmental impact



COMMITMENT TO REDUCE ENERGY USE STARTS WITH CREE

OPPORTUNITY

Founded in 1912, Milwaukee Area Technical College (MATC-Milwaukee) has grown to become one of the Midwest's largest community-based technical colleges and the largest technical college in Wisconsin. In an effort to improve lighting performance and save energy, college officials recently retrofitted exterior campus lighting at all four campuses with Cree luminaires.

MATC-Milwaukee's four-block downtown campus was the largest retrofit, with nearly all exterior lighting retrofit to LED. Cree solutions include LED lighting in parking structures and lots, area and pathway lighting along sidewalks and courtyards, and security wall-mount and flood lighting on building facades. The results show increased architectural appeal, dramatically improved visibility, and lower energy and maintenance costs.

According to Al Evinrude, director of construction services for MATC, it was time to improve the lighting throughout campus. "We sought to install a one-for-one replacement that would increase visibility and outlast the old HID lighting that was costly to maintain. We're expecting to save a lot of time and expense in maintenance," said Evinrude.

Research shows urban college campuses have higher crime rates, meaning urban colleges and universities must have a strong commitment to safety and security, while maintaining a pleasant aesthetic look. Lighting levels are viewed as an important safety resource in parking structures and outdoor lots, walkways and dorm surroundings, in addition to other public and private spaces.

In addition to crime prevention, MATC has taken a major step to reduce its impact on the environment by retrofitting to Cree luminaires. In 2009, the college installed and evaluated LED luminaires within the downtown campus parking garage structure. They gathered energy and maintenance cost savings data to validate the benefits of the technology. Realizing improved lighting performance and a 70 percent energy savings, the team collected enough positive data to move the project forward and completed the campus-wide installation in October 2010.

SOLUTION

More than 500 Cree fixtures replaced high-pressure sodium (HPS) lights in a six-story, 900-vehicle visitor and student parking structure. In one-for-one replacements, 190-watt pulse start metal halide fixtures were replaced with 55-watt Cree Edge™ parking structure luminaires; 130-watt HPS wall packs were replaced with 55-watt Cree Edge™ security luminaires; and 460-watt HPS area lights were replaced with 115-watt Cree Edge™ area luminaires on the structure's rooftop surface lot.

The below ground 158-vehicle facility used by faculty and staff was extremely dark with no ambient light or daylight to supplement the fading metal halide lighting, making it unsafe. Lighting specifiers noticed garage occupants were only parking directly below, or as close as possible, to light fixtures in an effort to avoid dimly lit areas. After retrofitting to 63 Cree 304 Series™ pendant-mount luminaires; nine security wall-mount luminaires; and one area luminaire; visibility dramatically improved throughout the structure, making occupants feel more secure.

A 60-vehicle facility reserved for executive administration was retrofit to 21 Cree parking structure luminaires. After the installation, the structure showed a significant improvement in lighting and visibility. Johnson Controls, Inc. (JCI) provided the lighting specification and estimates the energy savings for the upper- and lower-level C parking structures to be nearly \$2,000 annually with additional yearly maintenance savings over \$3,000.

BENEFITS

The new campus area lighting, excluding parking structures and lots, will save over \$7,500 in utility costs annually and \$21,000 in yearly maintenance savings, according to JCI. The combined area lighting and parking structure installations will be paid back in less than 10 years.

The new LED lighting systems on each parking level, the rooftop and interior stairwells has significantly reduced energy use. The college is realizing a 71 percent energy savings and expects to recoup \$25,000 in annual maintenance cost savings for up to 20 years from this parking structure installation.

Surface parking lots, sidewalks and courtyards across the 48-acre campus are now safely illuminated with Cree's architecturally pleasing area and pathway luminaires, greatly improving visibility from white, uniform illumination provided by the low-wattage LED fixtures.

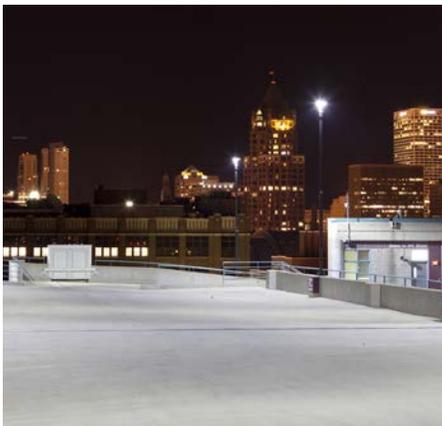
Low-profile Cree floodlights illuminate the nearly century-old main building façade and provide specific distributions of light to enhance architectural features and increase visibility. Wall-mounted security luminaires improve visibility around building perimeters and on narrow roadways.

"MATC is demonstrating sustainable principles in campus operations including a new exterior lighting system at our Downtown Milwaukee Campus," said Dr. Michael L. Burke, MATC president. "We are pleased with the results that include reduced energy consumption, lower operational expense and improved visibility for anyone using the campus during evening hours. The difference in the appearance of the campus lighting compared to the surrounding downtown area is dramatic and an important improvement."



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Michael L. Burke, PhD,
President, Milwaukee Area Technical College





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Michael L. Burke, PhD, *President,*
Milwaukee Area Technical College

IN THIS CASE STUDY

Cree Edge™ Series

PATHWAY

- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Two-Level options
- Multiple heights available



Cree Edge™ Series

AREA

- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Two-Level options
- Linear single light module accommodates 20 to 60 LEDs
- Multiple heights available



Cree Edge™ Series

SECURITY

- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Multi-Level options
- Modular, low-profile design



304 Series™

AREA

- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- Utilizes BetaLED® Technology
- UL wet listed
- Multi-Level options
- Integrated occupancy sensor
- Low-profile design



Cree BetaLED® Technology uses a total systems approach combining the most advanced LED sources, driver technologies, optics and form into each product. The patented NanoOptic® technology, available in more than 20 distributions, provides a level of optical control and thermal management that traditional light source technology cannot provide. Combined with the DeltaGuard® Finish, the finest industrial-grade finish available, the result is outstanding target illumination, lasting performance and optimum energy efficiency.



Cree IS LED Lighting

Learn more at: www.cree.com/lighting | info@cree.com | 800.236.6800

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