



**EXCEPTIONAL** light  
**PROVEN** performance  
**IMPRESSIVE** payback

**CREE** 

Commercial - Upgrade and New Construction

# Cree, Inc.

Research Triangle Park, Durham and Morrisville, NC

Cree illuminates campuses with energy-efficient LED lighting, virtually eliminating manufacturing line downtime due to lighting maintenance while achieving 49 percent savings annually in energy costs.

- Elimination of lighting maintenance provides substantial impact in 24x7 production environment
- \$160,000 a year savings in energy costs
- Carbon emissions reduced by more than half
- Employees report improved morale
- An improved sense of security in the outside areas

**CREE** 

# THE LED REVOLUTION BEGINS AT HOME

## OPPORTUNITY

At the forefront of light emitting diode (LED) technology advances for over 25 years now, Durham, NC-based Cree, Inc. is dedicated to making energy-wasting traditional lighting technologies obsolete through the use of energy-efficient LED lighting. Employing over 6,000 people globally, Cree is a market-leading innovator, developing and manufacturing lighting-class LEDs, LED lighting, and semiconductor products for power and radio frequency applications.

Cree's commitment to energy-saving LED technology begins at home — on its North Carolina campuses in Research Triangle Park, Durham and Morrisville with some 1.25 million square feet of floor space. Since 2009, almost 9,000 Cree® LED luminaires have been installed in those facilities, replacing fluorescent lighting systems. The exterior lighting has also been upgraded to Cree LEDway® streetlights and Cree Edge™ area luminaires.

## SOLUTION

Recognizing that a more appealing visual environment helps improve office morale and ergonomics — all while significantly lowering energy and maintenance bills, Cree's campus installation is a showcase for the benefits of its industry-leading LED lighting portfolio in maintenance and office environments.

Cree understands what quality lighting and operational savings can do for businesses. Cree's high-performing, energy-efficient LED fixtures provide crisp, low-glare light that helps improve productivity inside while providing a safer campus outside. And with the longevity of Cree LED lighting, facility managers don't have to worry about changing burned-out lamps and bulbs — significantly lowering operating expenses with virtually no maintenance costs.

LED lights installed in the interiors include Cree CR22™, CR24™ and LR24™ troffers; CS18™ linear luminaires; LR4™ and LR6™ downlights; and LRP-38™ lamps. In addition to being designed to last a minimum of 50,000 hours, the interior Cree LED luminaires feature award-winning Cree TrueWhite® Technology while the exterior lighting showcases BetaLED® Technology. Both offerings provide high efficiency, beautiful light characteristics, superior control and energy savings — all while maintaining color consistency over the life of the fixture.

Lighting the campus outdoor space, Cree's LEDway® streetlights provide exacting performance that minimizes first cost and maximizes energy savings, while Cree Edge™ area and pathway lighting provides shadow-free illumination designed to provide more than a decade of near maintenance-free service.

## BENEFITS

With the installation of these Cree LED fixtures, the three campuses are saving almost 475,000 watts annually (a 49 percent reduction) and roughly \$160,000 in energy costs. Carbon emissions have been reduced by more than half since replacing the fluorescents. Maintenance costs have likewise been significantly reduced — by some \$7,500 a year, according to Gerry Knowles of Cree facilities engineering. And because Cree operates a 24x7 manufacturing line, the elimination of production idle time due to lighting maintenance has an immediate and positive impact on the bottom line.

Equally important has been the improvement in employee morale and productivity. The Cree LED lights have been very beneficial in creating a better work environment for employees. The LED lighting reduces glare and optimizes the lighting distribution, minimizing eye strain and improving overall office ergonomics.

According to Joy Clark, Cree Human Resources: "We've heard several employees comment on the quality of the new lighting, and how the brighter light is so much easier on the eyes. It feels like daylight inside, so they feel more alert than in traditional work environments."

Since the 2009 installation, exterior maintenance calls are near zero — a significant improvement from the one to two calls per week prior to the Cree lighting installation. Another primary benefit of the exterior Cree LED fixtures is enhanced security in the parking lots. The uniform, shadow-free illumination improves nighttime visibility, creating a safer environment for employees and visitors. "LED lighting is great for security applications," says Emergency Operations Manager Scott Peckenpaugh, "because it decreases the amount of areas that may have uneven or inadequate lighting.

"LED lighting is also very 'white,' allowing easy identification of suspicious activity. Standard lighting fades the farther away from the light source and has a yellow tint that makes identifying activity more difficult." Peckenpaugh says he has received numerous positive comments from fellow security professionals who have seen the before-and-after installation photos.

As Clark states: "The safety of our employees is a primary concern for Cree. With the outdoor lighting upgrade to Cree LED fixtures, the nighttime visibility has noticeably improved on our campuses. One of our accounting employees who routinely works late hours commented on how secure she felt walking to her car in the evenings under the Cree lights. That's something we like to hear."

Saving money while at the same time improving productivity and safety — Cree's campuses are a real-world example of how their LED lighting is a win-win proposition for facility managers.



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**Scott Peckenpaugh,**  
*Emergency Operations Manager, Cree*





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**Joy Clark**, *Human Resources, Cree*

## IN THIS CASE STUDY

### LR Series

#### DOWNLIGHT

- Minimum 90 CRI
- CCT: 2700K, 3000K, 3500K or 4000K
- 650 or 1000 lumen options
- Shallow and deep recess options
- Dimmable with Triac dimmers at 120V



### CS Series

#### LINEAR LUMINAIRES

- Minimum 90 CRI
- CCT: 3500K or 4000K
- 4000, 7500 or 8000 lumen options
- 10-year limited warranty
- Up to 75,000-hour lifetime
- 0-10V dimming to 5%



### CR Series

#### TROFFERS

- Minimum 90 CRI
- CCT: 3000K, 3500K, 4000K or 5000K
- 2000 to 5000 lumen options
- 0-10V dimming to 5%, step level to 50%



### LRP-38™

#### LAMP

- 75 watt PAR38 equivalent
- 12 watts
- 94 CRI
- CCT: 2700K
- Dimmable to 20% with ELV dimmers



### LEDway® Series

#### STREET & ROADWAY

- Minimum 70 CRI
- CCT: 4000K (+/-300K), 5700K (+/-500K)
- UL wet listed
- Two-Level options
- IP66 available



### Cree Edge™

#### AREA

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



## Cree IS LED Lighting.

Learn more at: [www.cree.com/lighting](http://www.cree.com/lighting) | [info@cree.com](mailto:info@cree.com) | 800.236.6800

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Cree TrueWhite® Technology begins with the highest performing commercially available LEDs. Cree TrueWhite® Technology mixes the light from red and unsaturated yellow LEDs to create beautiful, warm, white light. This patented approach enables color management to preserve high color consistency over the life of the product. Cree TrueWhite® Technology also enables a CRI of at least 90 while maintaining high luminous efficacy – a no compromise solution.



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.