



Automotive



# AUTOMOTIVE LIGHTING

Application Guide

Better Light Changes Everything.

**CREE**  TM



## Automotive Spaces

# SHOWCASE YOUR DEALERSHIP & ATTRACT POTENTIAL CUSTOMERS

Selling a vehicle is about more than just having the models, safety features and prices that your customers are looking for. It's a visual and emotional experience. The reason you wash, vacuum and wax a car before putting it on the lot is the same reason why the luminaires lighting your business are so important.

Cree offers a complete line of LED luminaires that will deliver better light throughout your dealership — from the front-line row of cars to the showroom and service bays.

### Better light that:

- Improves the sales and service environment
- Is intelligent by design, adapting to the environment and users
- Is intuitively simple to design and implement
- Is ultra-efficient, offering lifetime energy and maintenance savings

Exterior





## MAKE THE RIGHT FIRST IMPRESSION WITH YOUR CUSTOMERS.

Exterior lighting is a critical element in shaping the customer perception of your dealership and the vehicle inventory you'd like to sell after dark. Traditional metal halide lighting can lose 40 percent or more of its initial light output within the first year of operation and can suffer significant color shifts over time. Contrast this with Cree® LED exterior fixtures that lose less than 10 percent of their light over more than a decade on most products and have significantly better color stability. The result? Cree products simply showcase your business and vehicles in a better light.



### Cree Edge™ High Output Area

- Cree TrueWhite® Technology
- 90 CRI at 5000K
- Automotive FrontlineOptic™
- Delivers true-to-life color rendering



### Cree Edge™ Area

- Minimum 70 CRI at 4000K or 5700K
- Precisely-controlled optical choices
- Exceptional thermal management
- Colorfast DeltaGuard® Finish



### OSQ Series Area

- Minimum 70 CRI (4000K and 5700K); 80 CRI (3000K)
- Extreme optical control
- Advanced thermal management
- Clean, modern housing with versatile mounting options



## SHOWROOM LIGHTING THAT IMPROVES YOUR CUSTOMERS' EXPERIENCE.

A properly illuminated showroom enhances the features and benefits of your vehicle inventory. The showroom, more than any other area, is where your visitors form a favorable impression of your dealership's quality and professionalism. Beautiful lighting and excellent color rendering give your customers the confidence to imagine themselves behind the wheel of their new vehicle. Cree LED downlights and lamps put the focus on your latest models and help your customers focus on their buying decision.



**CREE**   
**SMARTCAST** TECHNOLOGY

### KR Series Downlights

- Cree TrueWhite® Technology
- Available with 4", 6" or 8" round or 4" or 6" square apertures
- Delivers up to 8,000 lumens
- Cree SmartCast® and Cree Sunset Dimming Technology for the 4" or 6" apertures



### LR Series Downlights

- Cree TrueWhite® Technology
- Deliver up to 1,800 lumens
- Efficacy up to 100 lumens per watt
- Shallow and deep recess options
- Dimming: Continuous to 5%

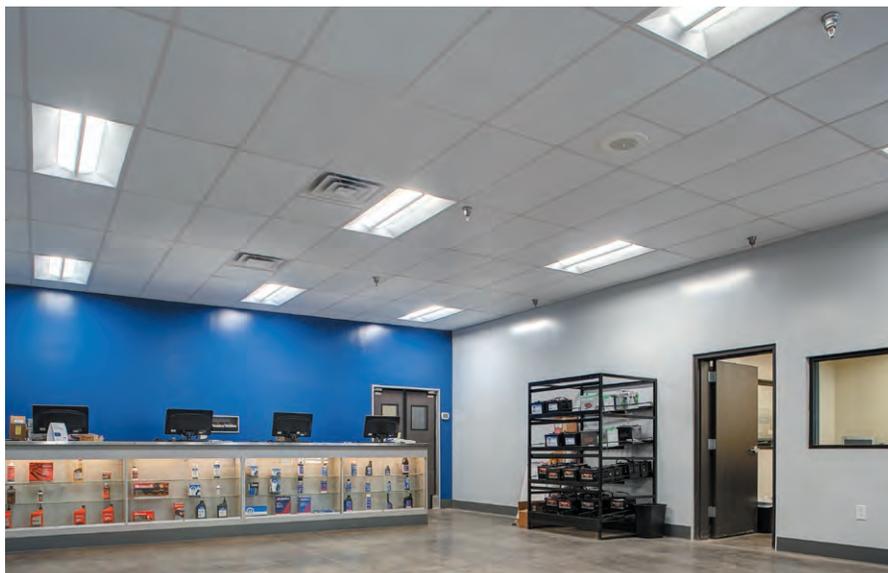


### MR16 Lamps

- Cree TrueWhite® Technology
- 15°, 25° and 40° beam angles
- "Perfect fit" design
- ENERGY STAR® qualified for commercial applications
- Dimmable to 5%

Service Department





## SERVICE YOUR CUSTOMERS, NOT YOUR LIGHTS.

Your service department requires good lighting to help maintain its productivity and help increase your revenues. That means the technicians working in your shops need high-performance lighting to reliably provide superior work that keeps your customers returning to the dealership for oil changes, parts replacements and other services.

Cree LED troffers and low-bay fixtures offer energy-efficient and near maintenance-free lighting for critical activity spaces that require high-efficiency, high-quality general purpose lighting.



**CREE**   
SMARTCAST<sup>®</sup> TECHNOLOGY

### CS Surface/Suspended Ambient

- Cree TrueWhite<sup>®</sup> Technology
- Deliver up to 8,000 lumens
- Efficacy up to 110 lumens per watt
- Designed to last up to 50,000 hours or 75,000 hours with HE option



### LS Series Surface Ambient

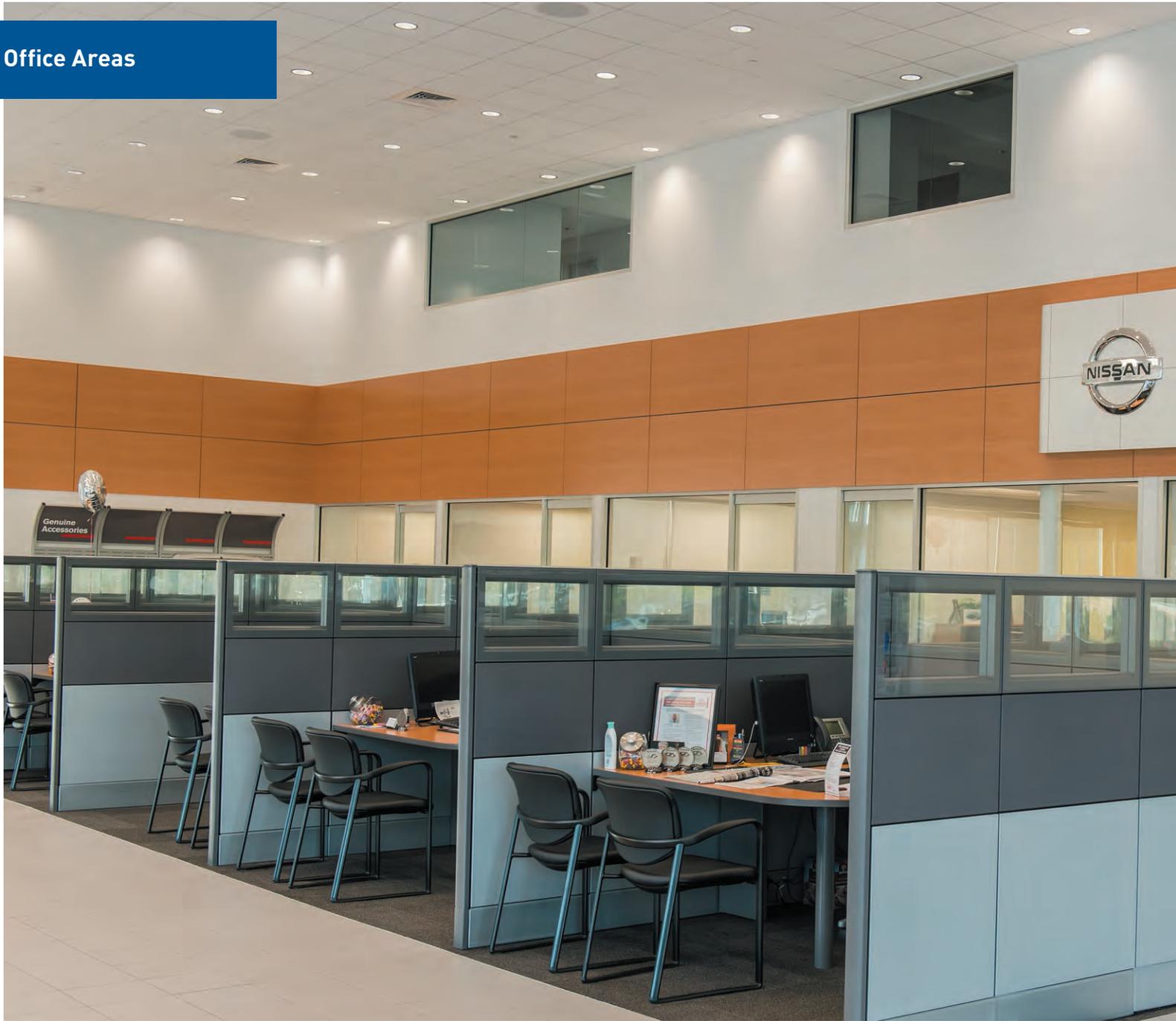
- Cree TrueWhite<sup>®</sup> Technology
- Deliver up to 8,000 lumens
- Efficacy up to 90 lumens per watt
- Dimmable 0-10V to 5%



**CREE**   
SMARTCAST<sup>®</sup> TECHNOLOGY

### CR Series Troffers

- Cree TrueWhite<sup>®</sup> Technology
- 2,000 to 5,000 lumen options
- Standard 10-year limited warranty
- Efficacy up to 130 LPW
- Designed to last up to 100,000 hours
- Cree SmartCast<sup>®</sup> Technology with adjustable CCT feature



## PROFESSIONAL AND INVITING OFFICES.

After a customer finds the right vehicle, you want to bring them to an office with a professional and comfortable setting that provides the right environment to help close the deal. Cree interior lights fit into any architectural plan and offer a variety of color temperatures and lumen packages.

Cree LED downlights and troffers provide higher efficacy and longer life, with better light quality than you can expect from traditional fluorescent and incandescent lighting.



**CREE**   
SMARTCAST<sup>®</sup> TECHNOLOGY

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**CREE**   
SMARTCAST<sup>®</sup> TECHNOLOGY

### KR Series Downlights

- Cree TrueWhite<sup>®</sup> Technology
- Available with 4", 6" or 8" round or 4" or 6" square apertures
- Delivers up to 8,000 lumens
- Cree SmartCast<sup>®</sup> and Cree Sunset Dimming Technology for the 4" or 6" apertures



**CREE**   
SMARTCAST<sup>®</sup> TECHNOLOGY

### ZR Series Troffers

- Cree TrueWhite<sup>®</sup> Technology
- Deliver up to 4,000 lumens
- Efficacy up to 150 lumens per watt
- Dimmable 0-10V to 5%
- Available with Cree SmartCast<sup>®</sup> Technology

# Site & Area





## SAVE MORE WHILE SECURING YOUR EXTERIOR.

Site and area lighting often create the greatest consumption of energy for an automotive dealership. With the Cree family of LED luminaires, you can drastically reduce the wattage required to illuminate your location.

Inside, outside and on the showroom floor, Cree lighting pays for itself — all while helping your site and vehicles look crisp, colorful and appealing for your guests. Our LED luminaires help you create an inviting appearance that will provide your customers with a sense of safety and security through properly directed light.



### OSQ Series Area

- Minimum 70 CRI (4000K and 5700K); 80 CRI (3000K)
- Extreme optical control
- Advanced thermal management
- Clean, modern housing with versatile mounting options



### XSP Series Area

- Remote monitoring compatibility
- Colorfast DeltaGuard® Finish
- NanoOptic® Precision Delivery Grid™ Optic
- DLC Qualified available



### XSP Series Wall Pack

- Minimum 70 CRI
- Suitable for wet locations
- NanoOptic® Precision Delivery Grid™ Optic
- Exclusive Colorfast DeltaGuard® Finish
- Photocell, dimming and multi-level options available

# IT'S A BRAND NEW NIGHT IN HIGH-OUTPUT LIGHTING.

## Gone are the Reasons to Compromise Superior Color Quality

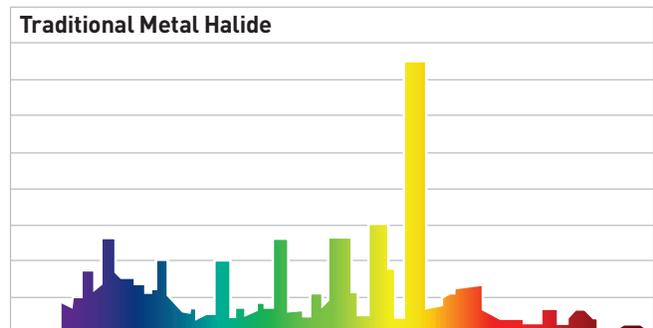
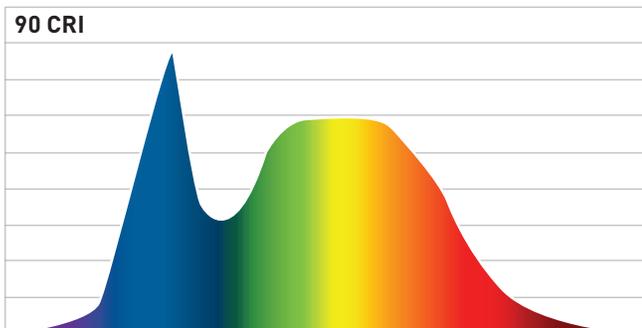
The cars on display in your dealership need to be properly illuminated to showcase the exciting paint and interior options that you are promoting. Don't let insufficient color rendering from poor lighting diminish your customer's car shopping experience. Powered by Cree TrueWhite® Technology, only Cree LED fixtures can deliver exceptional color quality (90+ CRI) and industry-leading efficacy. Colors show truer, spaces are brighter and significant energy savings are real. The Cree Edge™ High Output featuring TrueWhite® delivers true-to-life color rendering with 5000K 90 CRI and maintains more than 90 percent of the light output for longer than a decade. Contrast this with metal halide lighting that can lose 40 percent or more of its initial light output within the first year and can suffer significant color shifts.

## Cree Edge™ High Output LED Luminaire versus Traditional Metal Halide



## Like Metal Halide, Only Better

The Spectral Power Distribution (SPD) curves shown here provide a great way to compare the color characteristics between the Cree Edge™ High Output luminaires featuring TrueWhite® Technology and traditional metal halide fixtures. At each point across the visible color spectrum, the height of the SPD curve correlates with how accurately that color is rendered by the light source.

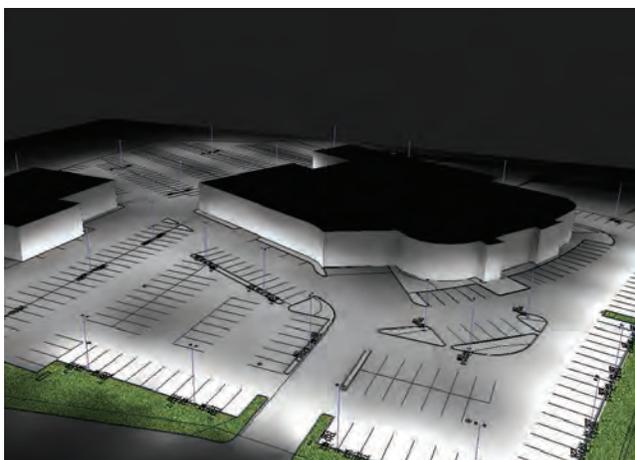


The fuller, more continuous curve renders a much larger color set than metal halide while using only a fraction of the energy.

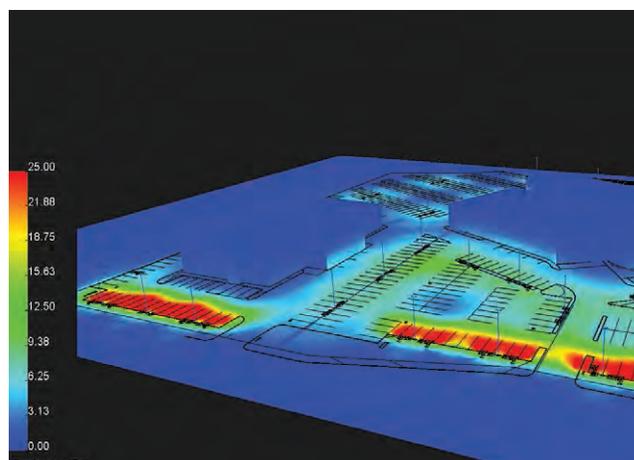
## Good Enough is No Longer Good Enough: Cree Automotive FrontlineOptic™ Technology

Designed specifically for the front lines of automotive dealerships, the Cree Edge™ High Output Automotive FrontlineOptic™ precisely puts light on the front row of your vehicle inventory — the most high profile area on your property. The unique thermal management system utilizes a flow-through design to maximize performance and longevity, eliminating costly and inconvenient re-lamping cycles for more than a decade, significantly reducing maintenance costs and disruptions to operations.

The Cree Edge™ High Output luminaires with FrontlineOptic™ Technology's offer optical precision that puts light on target with little or no waste, reducing light pollution while resulting in potential energy savings of more than 50 percent over traditional technologies. The combined impact of the 90 CRI and NanoOptic® Technology will dramatically enhance the curb appeal of any dealership — making the Cree Edge™ High Output FrontlineOptic™ a perfect solution for your dealership.



This image illustrates our ability to provide much higher light levels on front-line vehicle areas utilizing our FrontlineOptic™ technology. This brings attention to the front line of the dealership to attract nighttime customers. The interior sales lot is shown at normal light levels for better contrast with the front-line. Overall, the lighting is tailored to meet the specific needs of the dealership and is ready to contribute to the ultimate buying experience.



This image is using infrared imaging to illustrate how strategic lighting can provide significant energy and maintenance savings.

## Colorfast DeltaGuard® Finish

Exclusive to Cree LED outdoor fixtures, the DeltaGuard® finish protects our LED outdoor fixtures without compromise. Immersive conditioning across 18 stages delivers an e-coat epoxy primer with an ultra-durable powder topcoat, providing unmatched protection against corrosion, UV light, fading and weathering complete with a 10-year limited warranty.

# CREE SMARTCAST® TECHNOLOGY

What if you could easily transform your existing dealership facilities into energy-efficient spaces with automated intelligence to optimize light levels. With Cree SmartCast® Technology, we've totally redefined intelligent lighting by making it so intuitive and simple, it just works — for you and for everyone who experiences it.

Within each SmartCast® enabled luminaire, integrated sensors, cutting-edge electronics and software all work together using the language of light and intelligent algorithms to automatically learn and interact with each other and with your space.

The result is a seamless application of scalable intelligent light strategies that can save you up to 70% in energy costs while delivering more comfortable, personalized lighting experiences.

And if you're ready to connect to the Internet of Things (IoT), SmartCast® Technology offers an open, scalable platform that works seamlessly with smart building applications to amplify savings and further optimize environments, delivering even more value.

The best part: All of this is employed with OneButton™ Setup, enabling an entire building to be commissioned and connected at one time.

**CREE** ⇄  
**SMARTCAST® TECHNOLOGY**



 = Internet of Things

## So Easy, the Building of the Future Can Be the One You're Already In.

### Environmental Awareness and Control

Embedded sensors continually detect and share data on room occupancy and ambient light to fine-tune your environment and energy-saving strategies in real time.

### Simple Set-Up and Commissioning

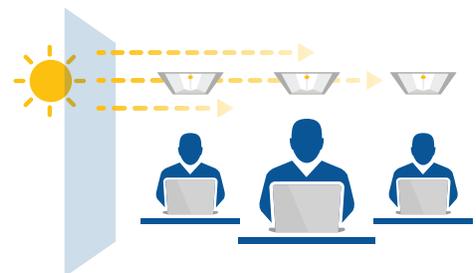
OneButton™ Setup commissions up to 1,000 luminaires in a single step, providing smart lighting that meets existing and emerging buildings codes, wirelessly and over Power over Ethernet (PoE) - live in minutes, not weeks.

### An OS for Intelligent Lighting

SmartCast® Technology orchestrates the optimal environment for energy efficiency and productivity by setting parameters for brightness and color, adjusting color temperatures to tasks and personal preferences, and tracking improvements.

### Innovative Connectivity

SmartCast® Technology with PoE creates secure building-wide networks that connect seamlessly with other building management systems and with the cloud, for even more value.



Interior and exterior LED luminaires by Cree are eligible for retrofit and new construction incentives under utility programs throughout the United States. Utility LED lighting incentives are able to help lower the upfront costs associated with installing new, energy-efficient lighting. As you begin planning your lighting project, Cree can provide assistance in working with your electric utility provider to identify and manage LED lighting incentive programs.

The example below shows an actual incentive an automotive dealership customer received through their local utility by switching to Cree Edge™ High Output luminaires.

**Utility LED Program Incentive Offering: \$0.08/kWh Saved**

**Annual Luminaire Operating Hours: 4,368**

Cree LED Lighting	Qty	Watts	Total Watts	Incumbent Lighting	Qty	Watts <sup>†</sup>	Total Watts	Incentive
Cree Edge™ High Output	70	557	38,990	1000w Metal Halide	126	1080	136,080	\$33,927

<sup>†</sup>Wattage with ballast factor.

## Helpful Incentive Information

### What products qualify?

Every utility program provides their own set of requirements and product criteria. In general, utilities usually require LED products to be listed under the qualification bodies of either ENERGY STAR® or DesignLights Consortium (DLC). In order to qualify under one of these organizations, the product must meet high efficiency, quality and lifetime criteria standards.

### What could potentially disqualify a project?

The customer generally needs to be granted pre-approval for an incentive amount before starting a project. The project may become ineligible if products are installed before receiving a pre-approval from the utility program.

## Cree 10-Year Limited Warranty

Light your dealership with confidence. Cree offers a 10-year limited warranty that covers the broadest product range in the industry. As a leading innovator of LED chips, components and lighting, Cree has over 20 years of experience in commercial LED development, bringing an unprecedented level of expertise to all facets of the LED lighting design and development process. Cree's 10-year limited warranty covers nearly all globally-available, commercial-grade indoor and outdoor fixtures. To learn more, please visit [lighting.cree.com/warranty](http://lighting.cree.com/warranty).

# CREE AUTOMOTIVE LED LIGHTING SOLUTIONS



## Indoor Products

1



KR Series Downlight

2



CR Series Troffer

3



CXB Series High-Bay/  
Low-Bay Luminaire



QUICK FACTS\*

**59%**  
ENERGY SAVINGS

**\$459K**  
LIFETIME ENERGY &  
MAINTENANCE SAVINGS

**1.4 Yr.**  
PAYBACK

\* Payback and energy savings are based on the national average electricity rate, recommended maintenance schedule, and typical maintenance costs over common assessment periods (application life).

Outdoor Products

<p>4</p>  <p>XSP Series Wall Pack</p>	<p>5</p>  <p>Cree Edge™ Series High Output Area with FrontlineOptic™</p>	<p>6</p>  <p>OSQ Series Flood</p>	<p>7</p>  <p>Cree Edge™ Series Flood</p>	<p>8</p>  <p>OSQ Series Area</p>
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## SHOWCASE YOUR DEALERSHIP AND ATTRACT POTENTIAL CUSTOMERS.

Cree® LED luminaires simply showcase your business and vehicles in a better light, providing a comfortable setting that creates the right environment to help close the deal. Cree interior and exterior lighting provides higher quality illumination than you can expect from traditional fluorescent and incandescent technology, available in a variety of color temperatures and lumen packages.

QUICK FACTS\*

**59%**  
ENERGY SAVINGS

**\$459K**  
LIFETIME ENERGY &  
MAINTENANCE SAVINGS

**1.4 Yr.**  
PAYBACK

### Indoor Products



KR Series  
Downlight



CR Series  
Troffer



CXB Series  
High-Bay/  
Low-Bay  
Luminaire



### Recommended Products for Auto Dealerships

#### Cree Edge™ High Output Area

- Cree TrueWhite® Technology
- 90 CRI at 5000K
- Advanced FrontlineOptic™
- Delivers true-to-life color rendering

#### OSQ Series Area

- Minimum 70 CRI (4000K and 5700K); 80 CRI (3000K)
- Extreme optical control
- Advanced thermal management
- Clean, modern housing with versatile mounting options

#### XSP Series Wall Pack

- Minimum 70 CRI
- Suitable for wet locations
- NanoOptic® Precision Delivery Grid™ Optic
- Exclusive Colorfast DeltaGuard® Finish
- Photocell, dimming and multi-level options available

## ENERGY EFFICIENT AND ENVIRONMENTALLY RESPONSIBLE LIGHTING.

Easily transform your showroom and service areas into energy-efficient spaces using automated intelligence to optimize light levels. With Cree® LED lighting, you can also drastically reduce the wattage required to help illuminate your site. The optical precision puts light on target with little or no waste, reducing light pollution while resulting in potential energy savings of more than 50 percent.



### Outdoor Products

4



XSP Series Wall Pack

5



Cree Edge™ Series High Output Area with FrontlineOptic™

6



OSQ Series Flood

7



Cree Edge™ Series Flood

8



OSQ Series Area

\* Payback and energy savings are based on the national average electricity rate, recommended maintenance schedule, and typical maintenance costs over common assessment periods (application life).

#### CR Series Troffers

- Cree TrueWhite® Technology
- 2,000 to 5,000 lumen options
- Standard 10-year limited warranty
- Efficacy up to 130 LPW
- Cree SmartCast® Technology with adjustable CCT feature

#### KR Series Downlights

- Cree TrueWhite® Technology
- Available with 4", 6" or 8" round or 4" or 6" square aperture
- Delivers up to 8,000 lumens
- Cree SmartCast® Technology and Cree Sunset Dimming Technology for the 4" or 6" apertures

#### LS Series Surface Ambient

- Cree TrueWhite® Technology
- Delivers up to 8,000 lumens
- Efficacy up to 90 lumens per watt
- Dimmable 0-10V to 5%



# LED LIGHTING HELPS DRIVE TRAFFIC AND SALES

Selling a vehicle is about more than just having the models, safety features and prices your customers are looking for. It's a visual and emotional experience. Cree offers a complete line of LED luminaires that will improve the sales and service environment by delivering better light throughout your dealership — showcasing the front-line row of cars and showroom and providing high-performance illumination throughout the service bays.



## MAKE THE RIGHT FIRST IMPRESSION

Exterior lighting is a critical element to shaping customer perception of your dealership and vehicle inventory. The Cree Edge™ High Output Automotive FrontlineOptic™ precisely lights the front row of your inventory. The optical precision combined with 90 CRI dramatically enhance the curb appeal of any dealership.



## IMPROVE THE CUSTOMER EXPERIENCE

The showroom, more than any other area, is where visitors form favorable impressions of your dealership and inventory. Cree's LED fixtures offer beautiful lighting and excellent color rendering to put the focus on your latest models and give your customers the confidence to imagine themselves behind the wheel of their new vehicle.



## SERVICE YOUR CUSTOMER, NOT YOUR LIGHTS

Service departments need good lighting to maintain productivity and increase revenues. Cree® LED fixtures offer high-performance, energy-efficient and near maintenance-free lighting to help technicians provide superior work that keeps customers returning to the dealership for oil changes, parts replacements and other services.



Automotive



## REV UP YOUR AUTO SALES

Cree leads the industry with several barrier-breaking technologies that create the ideal lighting solutions for a pleasant, positive sales and service environment while maximizing the savings to your bottom line.

- NEW Cree SmartCast® Technology, providing seamless application of scalable intelligent light strategies that can save you up to 70% in energy costs while delivering more comfortable, personalized lighting experiences
- Cree TrueWhite® Technology, delivering 90+ CRI, high R9 values, and accurate and consistent color, essential for enhancing the dealership curb appeal and vehicle inventory
- Cree NanoOptic® refractor technology, offering a wide range of optical solutions possibilities for highly-optimized target illumination performance
- Cree's Colorfast DeltaGuard® finish, protecting the outdoor fixtures and poles with the finest industrial-grade finish available with UV-light resistance, corrosion resistance and fade protection

**Better Light Changes Everything.**

## PAVE YOUR WAY TO SAVINGS

[lighting.cree.com/auto](http://lighting.cree.com/auto) | [auto@cree.com](mailto:auto@cree.com) | 800.236.6800

\* Payback and energy savings are based on the national average electricity rate, recommended maintenance schedule, and typical maintenance costs over common assessment periods (application life).

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Automotive



## REV UP YOUR AUTO SALES

Facilities featured in this brochure include:

- Digital Chassis - Durham, NC
- Duvall Automotive - Clayton, GA
- Michael Jordan Nissan - Durham, NC
- Palmen Dodge Chrysler Jeep - Racine, WI
- Reed Lallier Chevrolet - Fayetteville, NC
- Reliable Buick GMC - Roseville, CA

Visit [lighting.cree.com/auto](http://lighting.cree.com/auto) or contact a Cree lighting representative to learn more.

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