



LED LIGHTING CATALOGUE

Outdoor / Industrial Solutions

FALL 2016

CREE 



CREE  TM

Contents

2	Products Map
5	Introduction – The Cree Way
12	Applications
24	Cree XSP Series - XSP
30	Cree XSP Series - XSPR
34	Cree XSP Series - XSPW
38	Cree Ledway Series – Ledway Road
42	Cree Ledway Series – Ledway Multi
48	Cree Ledway Series – Ledway E-Tunnel
52	Cree OSQ Series
56	Cree Edge Pathway
60	Cree RKT Series
64	Cree Edge High Output Series
72	Cree CXB Series
76	Cree WS Series
80	Cree CPY Series
84	Cree 304 Series
90	Technical Summary – Luminous Flux
144	Control Systems
162	Poles and Accessories
170	Street Lighting Standards
174	Glossary

Products map

Cree XSP Series

Cree XSP
Version B
p 26



Cree XSP
Version C
p 28



Cree XSPR
p 32



Cree XSPW
p 36



Cree Ledway Series

Cree Ledway Road
Mounting 7
p 40



Cree Ledway Multi
Mounting M
p 44



Cree Ledway Multi
Mounting 4M 180°
p 46



Cree Ledway Multi
Mounting M 90°
p 46



Cree Ledway E-Tunnel
p 50



Cree OSQ Series

Cree OSQ
Medium
p 54



Cree OSQ
Large
p 54



Cree Edge Patway

Cree Edge Pathway
p 58



Cree RKT Series

Cree Retrofit Kit
p 62



Cree Edge HO Series

Cree Edge HO
Mounting AA
p 66



Cree Edge HO
Mounting DA
p 68



Cree Edge HO
Mounting High-Bay
p 70



Cree CXB Series

Cree CXB
p 74



Cree WS Series

Cree WS
p 78



Cree CPY Series

Cree CPY250
Flat Lens
p 82



Cree CPY250
Drop Lens
p 82



Cree 304 Series

Cree 304
Mounting R
p 86



Cree 304
Mounting 0
p 86



Cree 304
Mounting 4
p 88



Cree 304
Mounting Y
p 88





LOOK TO CREE FOR

True Innovation, Superior Value

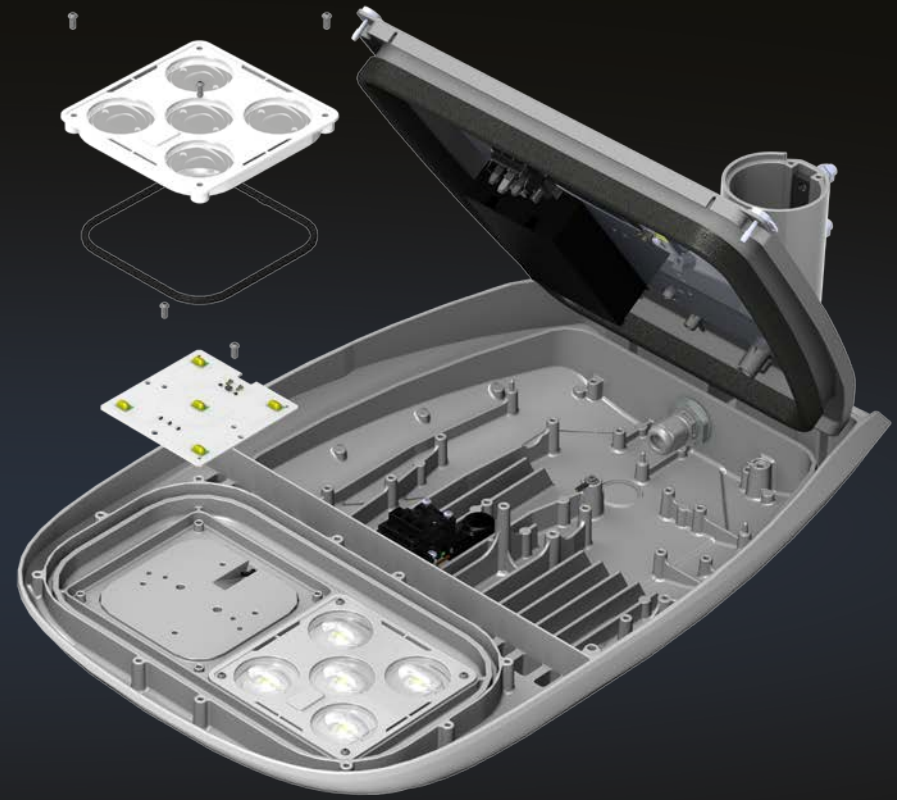
Innovation — it's what drives everything we do. Cree's leadership begins with innovative materials that provide high-efficiency performance for each luminaire found within our product portfolio. With over a quarter century of experience, Cree has a deep understanding of the science behind LED lighting and provides a complete collection of indoor and outdoor LED lighting solutions to match your application.

With a large installation base of our flagship LED downlights and our industry-leading LED roadway lighting fixtures installed around the globe, Cree has a solid reputation for delivering top-performing LED lighting.

Cree remains at the forefront today, dedicated to developing new LED solutions that improve both our customers' spaces and their bottom lines. As our product lines grow, we not only build on our history of innovation, we also extend our record of delivering superior value with beautiful, energy-efficient lighting.

Industry-Leading Limited Warranty

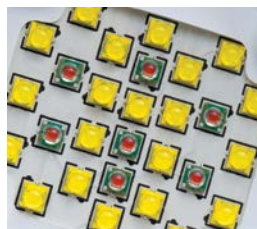
Cree offers a standard 10-year limited warranty that covers the broadest product range in the industry. This covers nearly all Cree globally available commercial-grade indoor and outdoor fixtures. We also offer an industry-leading standard 10-year limited warranty covering our Colorfast DeltaGuard Finish on all outdoor fixtures.



THE CREE WAY

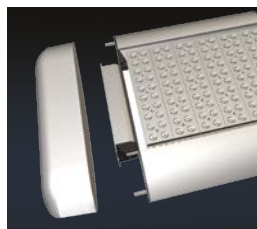
A Total Systems Approach

Our total systems approach is a comprehensive engineering philosophy that combines the most advanced LED sources, driver technologies, optics and form into each product. The result is highly-reliable luminaire solutions for both indoor and outdoor that reduce energy consumption, extend lifetimes and maximize illumination performance and quality.



Advanced LED Technology

Inside every Cree luminaire are top-quality Cree LEDs, made from the finest materials and grown by experts in our very own labs. With over one billion hours of reliable LED operation logged, our proven track record explains why we offer the industry's broadest warranty.



Modular Design

We do not take a one-size-fits-all approach. Rather, Cree strives to create application-specific solutions, such as our modular outdoor light engines, which can be fine-tuned to meet any illumination requirement while consuming the least amount of energy possible.



Specialized Optics

For our patented NanoOptic refractor system, Cree luminaires feature individually optimized optics designed for both visual appeal and precise control, maximizing photometric performance, aesthetics and color mixing all at once.

Progressive Product Development

As technology leaders, we are continuously advancing our state-of-the-art LED lighting systems to gain the highest efficiency and quality of light from our luminaires. Dynamic R&D focuses on maximizing efficiency in every part of the luminaire, while Cree world-class engineering, highly experienced manufacturing teams and overall operational excellence combine to produce our distinctive top-performing LED lighting products.



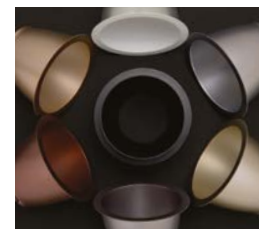
Thermal Management

Excellent thermal management contributes to optimal illumination, reliability and longevity. From advanced heat sink technology to our vented outdoor housings, Cree luminaires are designed to maximize cooling, making their unmatched performance and longevity possible.



Reliable and Optimized Drivers

The drivers utilized in Cree luminaires are extremely reliable and are specifically designed to our high-efficiency standards. A variety of drive current options provide flexibility, while our integrated sensors and controls can offer total system solutions.



Style and Performance

Cree luminaires incorporate all the critical design elements needed to deliver exceptional performance and easy installation, all without compromising style. Our modern yet low-profile designs and high quality finishes offer beautiful aesthetics to any application, indoors and out.



WHY CREE LED LIGHTING?

Benefits at EveryTurn

Cree is the originator of today's LED lighting technology and is 100 percent committed to the continued advancement of solid state lighting. From growing our patented Silicon Carbide (SiC) materials, to developing the components, to manufacturing complete lighting systems, our entire portfolio benefits from Cree's unrelenting pursuit of developing the most advanced LED lighting available.



Proven Quality & Performance

A leading innovator of LED chips, components and lighting, Cree has over a quarter century of experience in LED lighting development. As a leading vertically-integrated LED lighting company, Cree is revolutionizing the lighting industry with the development of sustainable lighting technology that provides superior lighting performance.



Ultra-Efficient Lighting

Lighting accounts for approximately 20 percent of electricity use in both industrial and commercial applications. Cree offers a complete line of indoor and outdoor LED lighting solutions that significantly reduce electricity consumption and operating costs for commercial and industrial applications.



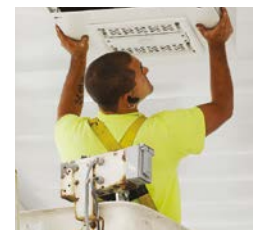
Lifetime Energy Savings

One of the main advantages of LED lighting is reduced power consumption. Cree LED luminaires use just a fraction of the energy required to operate traditional lighting; as energy demands rise, the cost savings and carbon reduction from upgrading to LED lighting will continue to reduce operational costs.



Reduced Maintenance Costs

Maintenance cost savings is one of the major benefits realized when making the switch to LED lighting. Designed for extended life, Cree LED luminaires will last much longer than conventional lighting, which equates to fewer replacements over time and less money spent on maintaining your lighting system.



Easy Installation & Upgrading

The products found in this catalogue have all been designed with ease of installation in mind. From the most innovative street light control systems to the traditional mounting options available for our outdoor products, Cree LED luminaires can work as a direct replacement or as a perfect fit for new lighting install opportunities.



Long-Term Financial Benefits

Cree offers some of the most energy-efficient and long-lasting LED lighting in the industry. This translates to financial savings through reduced operational costs and less money spent on maintenance due to extended product life. Depending on the application, the payback period for LED lighting typically ranges from one to three years.

Outdoor Luminaire Technology

NanoOptic® Technology

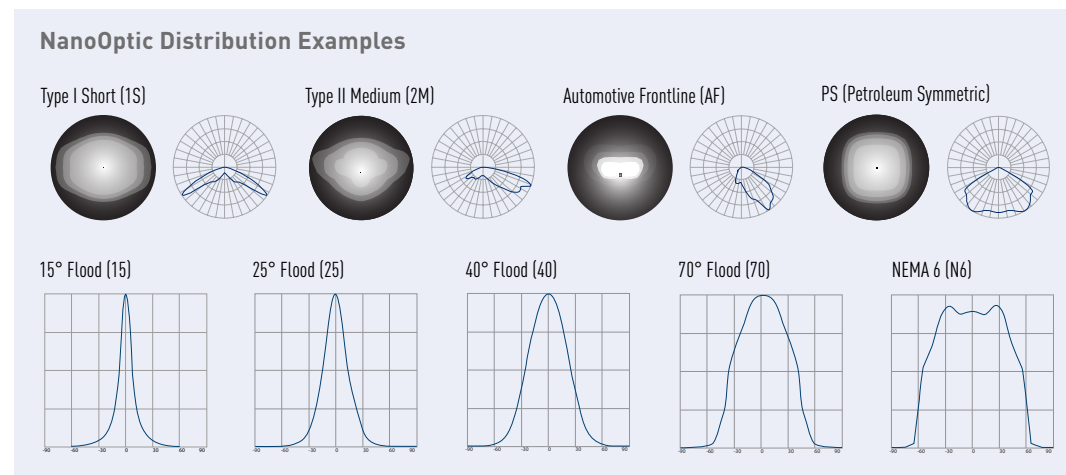
Over 20 Optic Choices for the Flexibility You Need

Traditional technologies offer limited choices when it comes to optical selections. Cree has changed this with our patented and highly-efficient NanoOptic refractor technology. Our wide range of NanoOptic options provides new possibilities for highly-optimized target illumination performance and the flexibility needed for application-specific requirements. Our NanoOptic refractor system provides superior light control with:

- More lumens delivered in the target area
- Improved uniformity ratios
- Controlled high angle brightness
- Over 20 optical distribution patterns to choose from

NanoOptic® Technology Explained

The illustration below represents the LED optical fine-tuning range that Cree outdoor luminaires can provide. The gray area shows Type II short optic coverage. The short optic can be utilized to comply with more stringent light spill and high angle brightness specifications or codes by incorporating a lower main beam. The wider blue area indicates the Type II Medium optic coverage. This optic incorporates a slightly higher main beam to allow for wider and more economical pole spacing.



Colorfast DeltaGuard® Finish

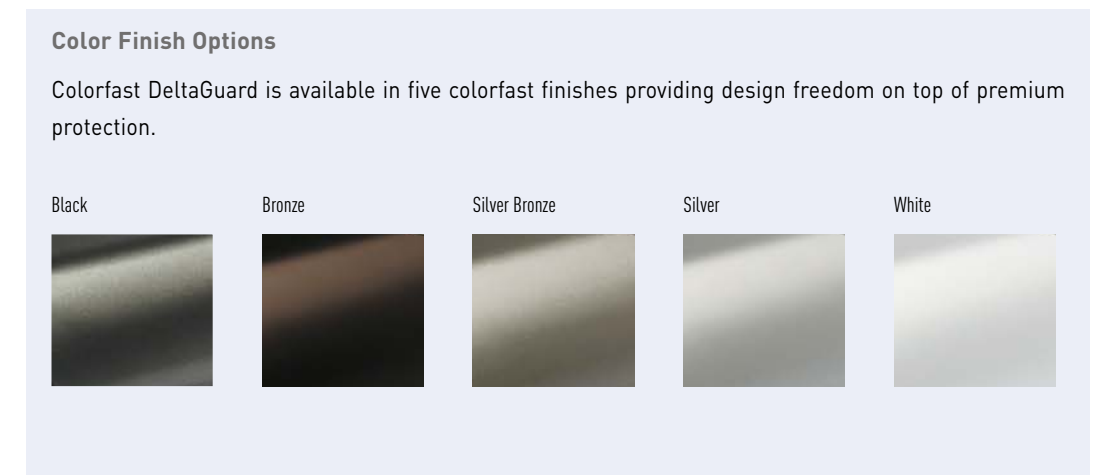
Premium Protection with Proven Results

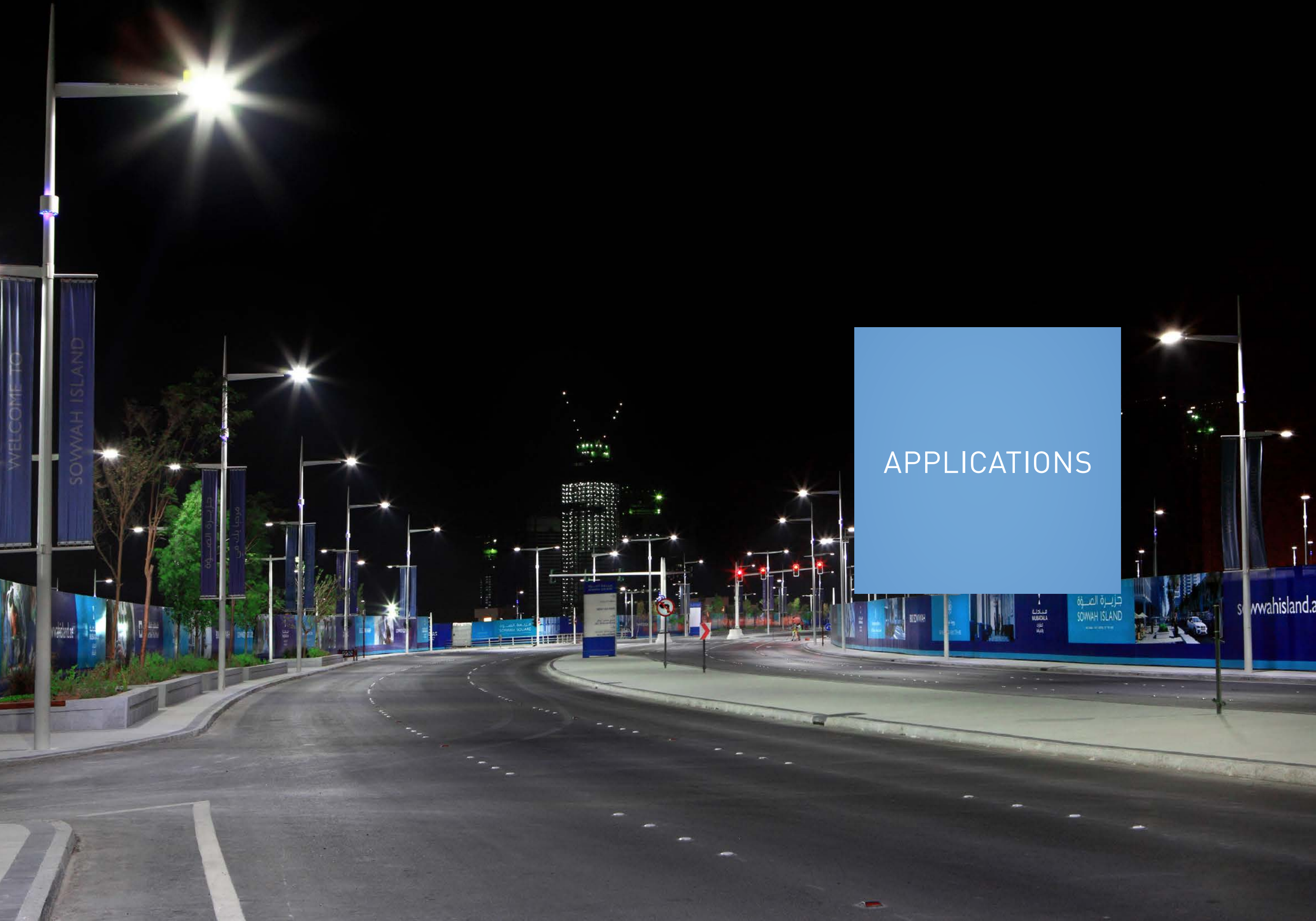
Colorfast DeltaGuard Finish is the finest industrial-grade finish available, is exclusive to Cree exterior products, and carries an industry-leading 10-year limited warranty. Each product follows an immersion process that includes six cleaning stages, eight pre-treatment stages and an epoxy e-coat before the topcoat is applied. A baked-on ultra-durable powder topcoat is the last step to a truly outstanding finish that provides:

- Ultraviolet light resistance
- Hard surfacing
- Superior adhesion
- Corrosion resistance
- Fade protection
- Multiple finish options
- Endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions (ASTM Standard B117)

Proven Results - Salt Fog Test Results

The same 3mm thickness of powder topcoat was applied to each of these four aluminium section samples, which were then scored and exposed to a salt fog test for 2,500 hours. The results are clear – our Colorfast DeltaGuard finish stood up to the test, proving our ability to protect your investment even in the most grueling conditions.





APPLICATIONS

Streets and Roadways



Illuminate the street as it were a museum. With a knowing use of high performance, comfortable optics, designed for vehicles as well as pedestrians. Flexibility, modularity, longevity - concepts which go to create an extraordinary range of LED products which easily adapt to the requirements of each project, whether on the motorway and high traffic applications or local streets. Energy savings, overall efficiency and return on investment, these are the logical consequences of products designed to leave nothing to chance.

Choose the model to fit the application, determine the number of LEDs, optics, driving current and colour temperature in relation to ambient conditions and hours of operation, customize the control system to get the most from each fixture - and the result is a product which offers unbeatable quality and long service life. You can rest assured that your installation is guaranteed to work, even over the long term.

Cree XSP Series	p 24
Cree Ledway Series	p 38
Cree OSQ Series	p 52

Urban Landscapes



When working in an urban context, performance and efficiency are no longer the only considerations. It's here that our products offer their best to the designer. Each road, square, park and green space is like a made to measure suit. The product must adapt to the project, not vice-versa.

With our range of precision optics, able - just as an example - to completely eliminate back-lighting, to perfectly match the context. This reduces the visual impact of the lighting unit, while ensuring unbeatable uniformity of illumination, defining and highlighting details. Standard compliant lighting that never compromises comfort and invites the user to enjoy a safe, well-lit urban space.

Cree OSQ Series	p 52
Cree Edge Pathway	p 56
Cree RKT Series	p 60

Parking Areas



Extending daylight without noticing, enhancing the space with good lighting which is inviting and never too bright for comfort, improving the safety of users and their vehicles, eliminating light pollution, reducing power and service costs, making clients feel welcome even before they've parked their cars - this is what a Cree carpark is about.

Lighting means safety in indoor car parks. For anyone driving in search of a safer and more tranquil place to park, for the pedestrian who wants to be able to immediately find the quickest way to the exit, or for anyone checking for problems from a remote position. But the lighting must also adapt to the real use of the car park, which is very variable throughout the day and night. In such cases, a custom product with optics for low height installations and optimized light distribution without dazzle is the best possible solution. Using a sensor on-board the fixture allows each light to be controlled in relation to the real requirements of the car park.

Cree XSP Series	p 24
Cree Ledway Series	p 38
Cree OSQ Series	p 52
Cree WS Series	p 76
Cree 304 Series	p 84

Large Areas



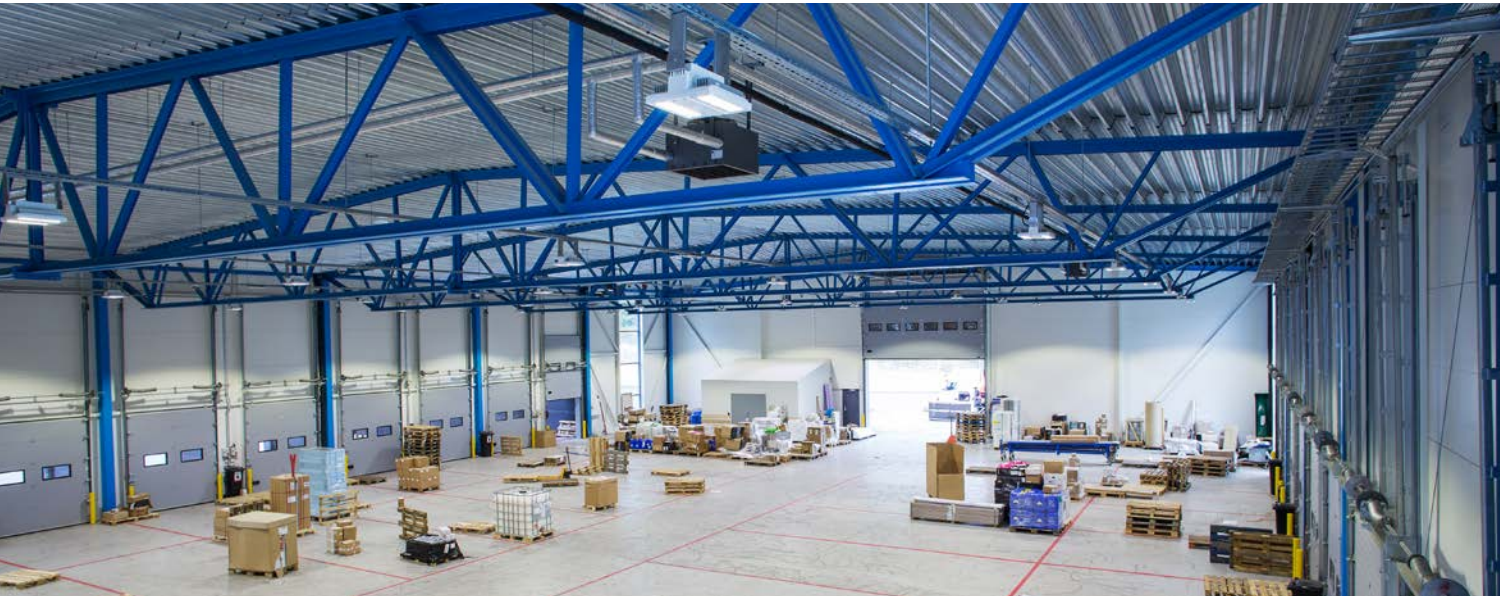
Major infrastructure projects such as ports and airports, construction sites, sports sites or simply lighting towers require appropriate products to achieve extraordinary performance, be extremely durable and ensure a reduction of energy and maintenance costs.

A plant of this kind must be designed primarily to ensure the safety of operations that take place in these areas. Cost containment is an important feature but more crucial is the performance of the system even under environmental risk or exceptional events. In addition to the technical aspects, a system of this nature should be designed with aesthetics that follow the principles of architectural lighting.

Cree LED High Output luminaires redefine the environment and offer precise optical control and reliability. These lighting fixtures for large areas have an innovative design and are powered by cutting-edge technology from Cree.

Cree Edge High Output Series	p 64
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Industrial Areas



The quality of life in the workplace also depends on lighting, since it affects critical aspects including personal safety, proper use of space and the freedom of movement of staff and machinery. Warehouses, factories, stores and loading bays are all subject to intense use, often around the clock.

The high quality LED lighting which only Cree can offer improves the working experience while keeping levels of attention high. Cree fixtures offer consistent, uniform lighting, do not create areas of shadow and thus do not lead to fatigue. And let's not forget the enormous savings for the company, able to reduce their power costs, and the service problems and expenses typical of conventional systems.

Cree Ledway Series	p 38
Cree Edge High Output Series	p 64
Cree CXB Series	p 72
Cree WS Series	p 76
Cree CPY Series	p 80

Tunnels and Motorways



In applications like motorway tunnels, keeping a tunnel lighting system working properly can be time- and cost-intensive. Inside the tunnel, bacteria, smog and dust accumulate quickly due to the continuous traffic. Cree LED lighting products can provide an enormous change. LED lights have numerous advantages over conventional lights. The most important is their long service life, which significantly reduces the need for maintenance.

Compare that to conventional systems, which must be cleaned with special machinery, so that the tunnel has to be closed for many hours at a time. Cree has equipped its fixtures with an exclusive heat dissipation system which reduces the accumulation of dust and also reduces the need for maintenance operations by more than 50%. Furthermore, the fixtures can be cleaned quickly by simply spraying them with water. Where Cree LED lights were chosen to light a tunnel, power consumption has gone down and performance has greatly increased: outstanding visibility and exceptional uniformity that provide a safer environment.

Cree Ledway Series	p 38
Cree 304 Series	p 84

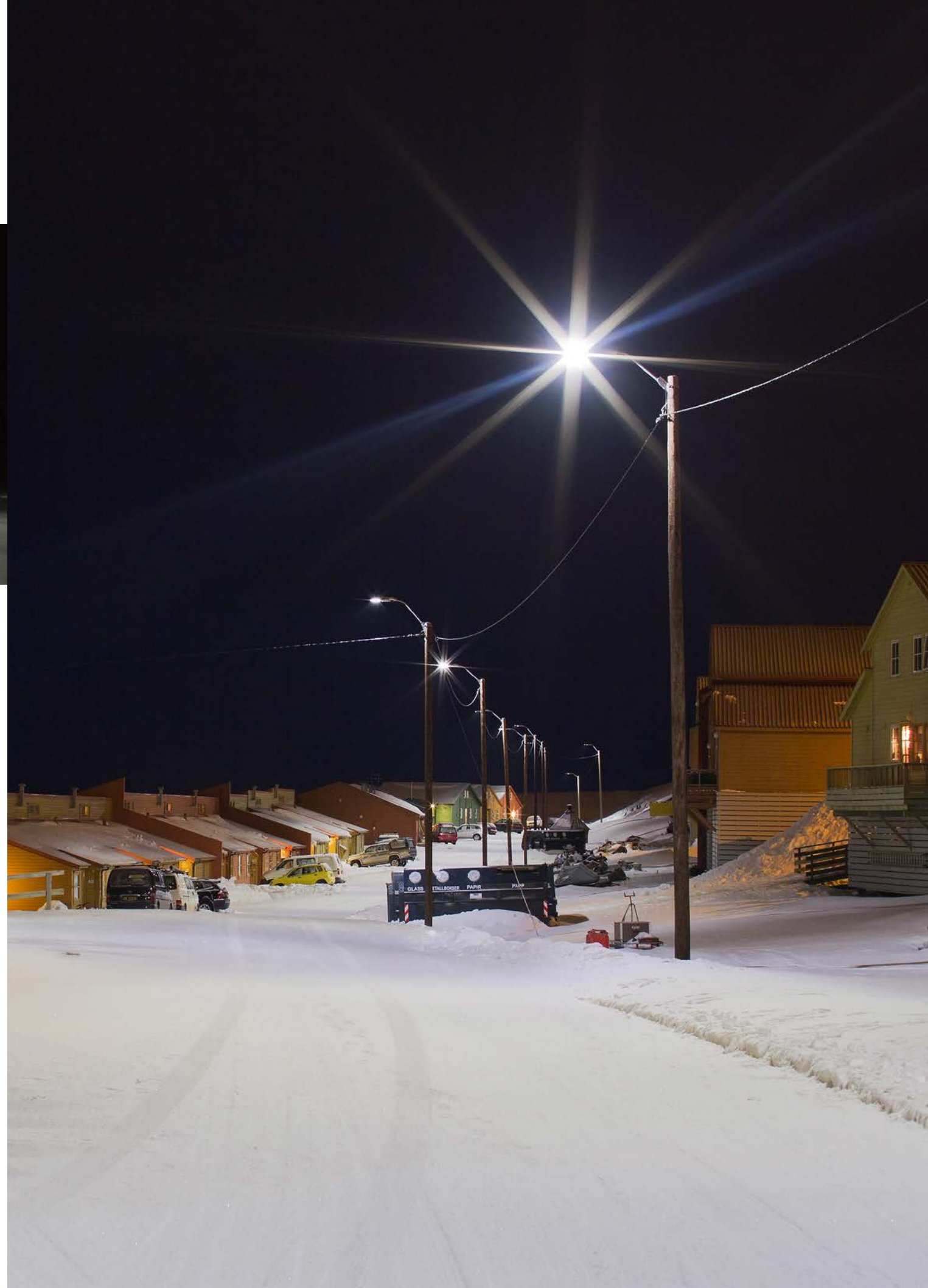
Petrol

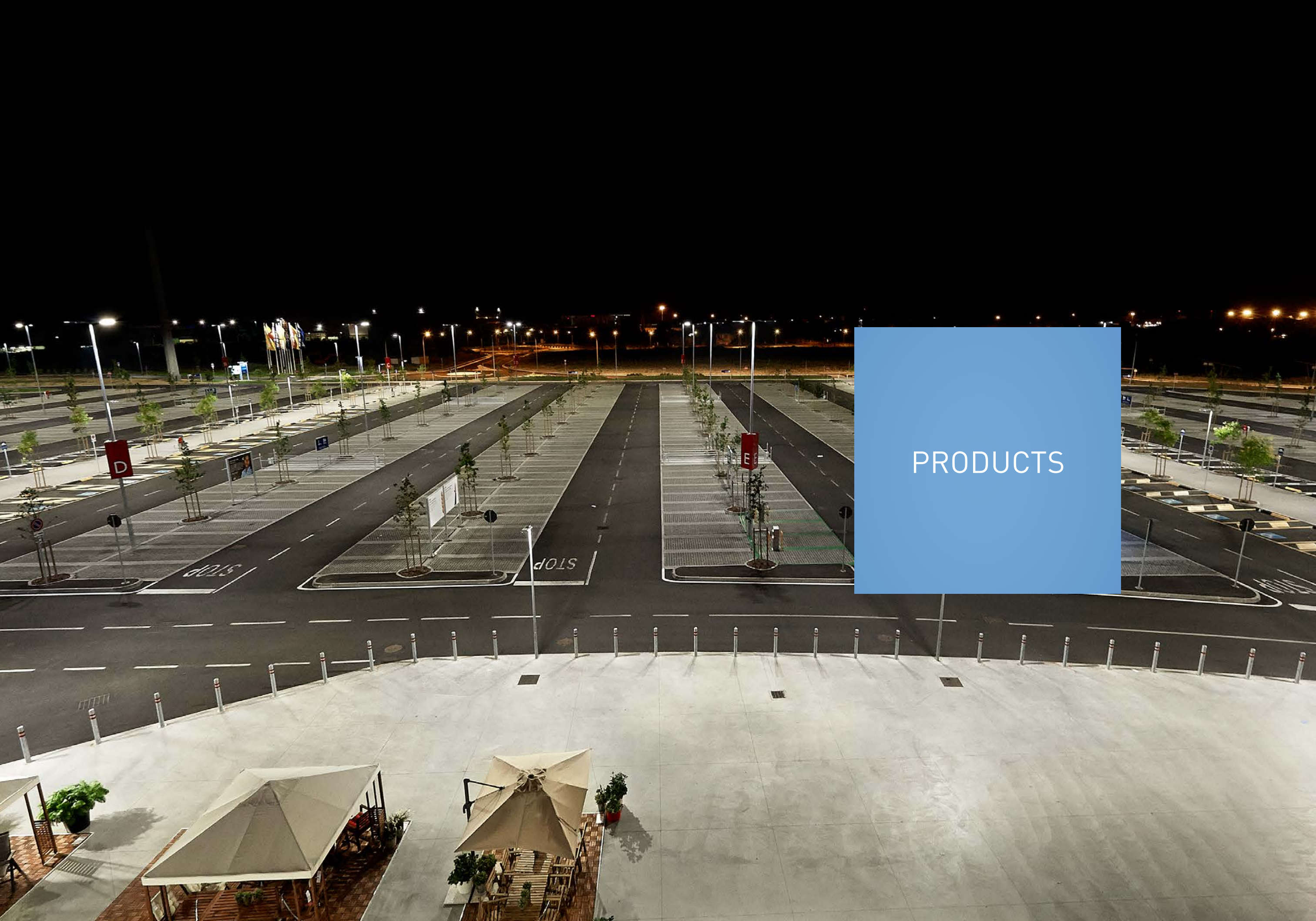


The white light of LED luminaires has a surprising effect on the perception of service stations by travellers: it makes them feel secure, both due to the quality of the light - its natural effect is very similar to that of sunlight - and to its uniform illumination which eliminates shadows and unevenness.

LED light gives a feeling of cleanliness and order, and is welcoming and reassuring. Safety and neatness: two indubitable advantages of Cree LED lights, which invite the traveller to stop at the service station and give it a competitive advantage. Along with its positive impact on travellers, Cree LED lighting gives considerable power and cost savings for service station operators.

Cree XSP Series	p 24
Cree Ledway Series	p 38
Cree WS Series	p 76
Cree CPY Series	p 80
Cree 304 Series	p 84





PRODUCTS



Cree XSP Series

Street lighting is an important and significant investment for most municipalities. High energy and maintenance costs associated with operating HID systems offer no relief to already tight budgets. Designed to resemble traditional street lights but with improved performance, Cree XSP Series is the result of a from-the-ground-up design that provides unmatched illumination performance and value at the street level. Beyond substantial energy and maintenance savings, Cree XSP Series achieves better optical control with the Cree NanoOptic Precision Delivery Grid optic than other street lighting solutions. The XSP Series luminaires are ideal for any street and roadway applications.

The fixture body is made from aluminium and its slim design provides extremely low wind exposure. The compartment containing the electrical components is made from die-cast aluminium and can be accessed without the need for tools. The driver and electrical elements are fixed on a removable plate to allow simple and easy access to the wiring compartment for any maintenance or inspection operations required even after the fixture has been installed.

Cree offers the finest industrial-grade finish available with an industry-leading 10-year warranty. The surface finish of the fixture is treated with Colorfast Deltaguard technology, which includes several material pre-treatment stages, a high-adherence epoxy primer and a polyester powder top coat. This treatment provides extremely high resistance to corrosion, abrasion and peeling and maintains color stability over time, even in the event of high exposure to sunlight.

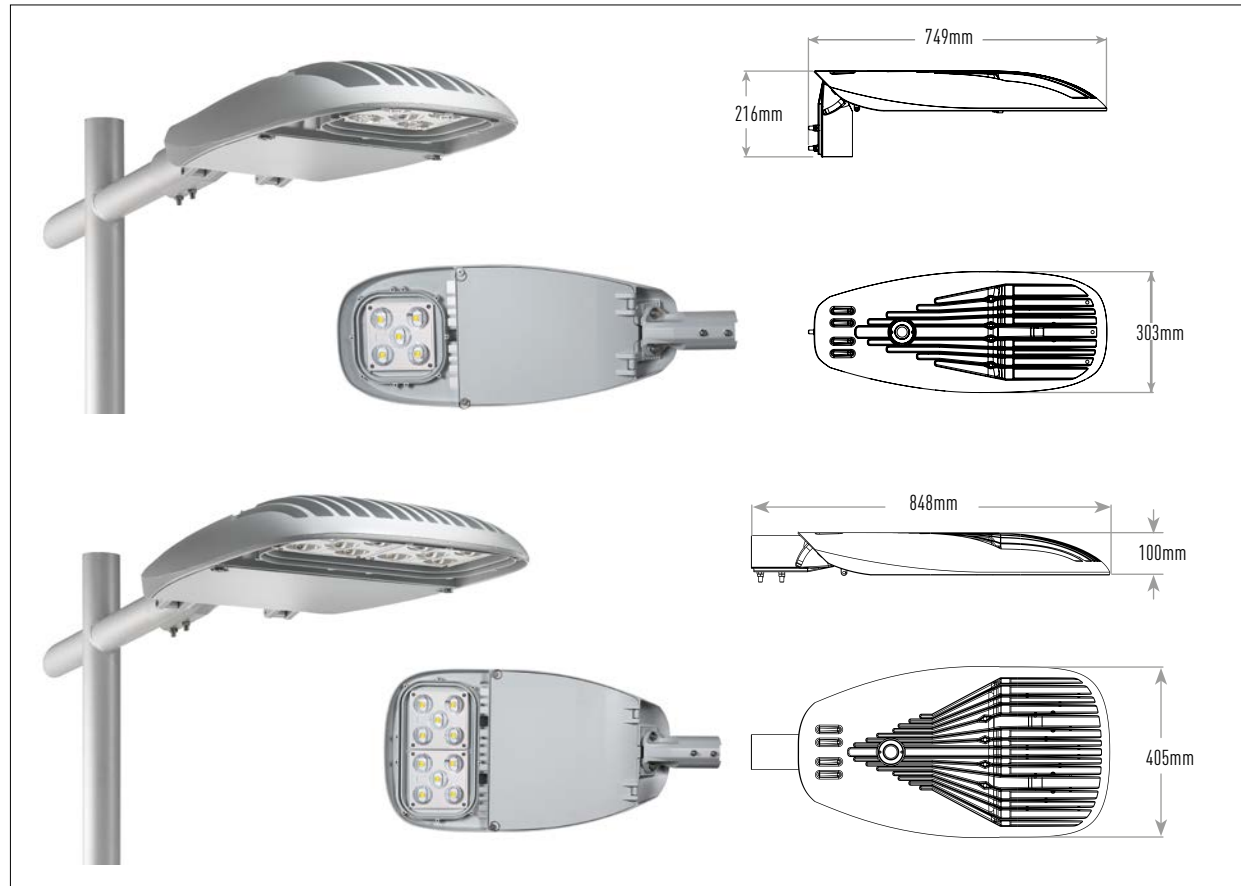
The luminaire is designed to mount directly to both vertical or horizontal tenons, with outer dimension of either 60mm or 76mm, and it can be tilted from +/- 5 to 20 degrees.

Cree XSP Series is offered with different dimming capabilities. For example, the Field Adjustable Output tunes the luminaire to the exact needs of a particular location after it's been installed. Plus, a single stocked replacement street light can be adjusted to a variety of outputs used throughout the city.

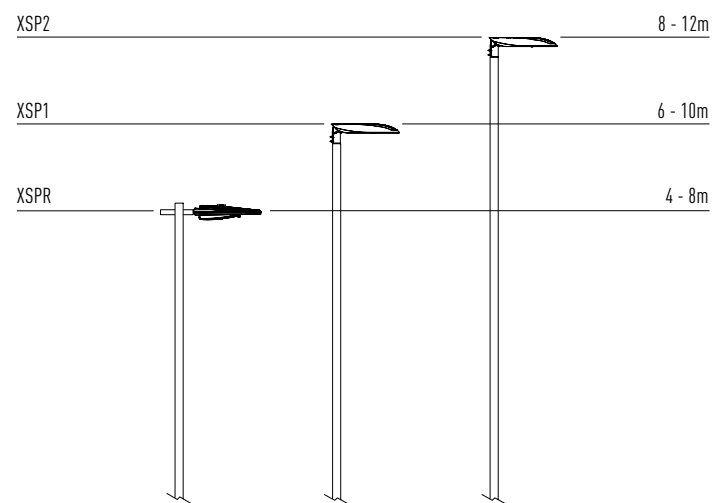
Optical system:	NanoOptic® Precision Delivery Grid™
Colour temperature:	3000K, 4000K or 5700K
CRI:	Minimum 70 CRI; 80 CRI (3000K)
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	Class 1 – 10 years on luminaire / 10 years on Colorfast DeltaGuard® finish Class 2 – 5 years on luminaire / 10 years on Colorfast DeltaGuard® finish

Cree XSP B

Single / double module - Horizontal / vertical tenon



Installation mounting height



Accessory information

KIT-XSP-AP60-48-60	Fitter kit to mount to 48mm tenon
KIT-XSP-AP60-42-60	Fitter kit to mount to 42mm tenon
KIT-XSP-AP60-34-60	Fitter kit to mount to 34mm tenon

Ordering Information

Example: XSPB022LGA30K+24SVDIM01

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color Options	Options	Cable length*
XSP	B	02** horiz/vert tenon 60mm OD (+/- 5°)	2LG Type II Long	A 52W B 101W	30K 3000K	+ Class 1	24 220-240V	SV Silver	No code Fixed Output	No code Standard (w/o cable)
		03 horiz/vert tenon 76mm OD (+/- 20°)	275 Type II Short 0.75		40K 4000K	^ Class 2		BK Black	DIM Dimmable 1-10V - Control by others	01 Exit cable 30cm
			210 Type II Short 1.0		57K 5700K			BZ Bronze	Q# Field Adjustable Output - Requires no additional wiring	03 Exit cable 3m
			2SH Type II Short					SB Silver Bronze	Q#D Field Adjustable Dimming	06 Exit cable 6m
			3SH Type III Short					WH White	A# Virtual Midnight - Field programmable	10 Exit cable 10m
			3ME Type III Medium							12 Exit cable 12m
			4ME Type IV Medium							

* w/o connector

** horiz/vert tenon 60mm OD (+/-20°) available upon request

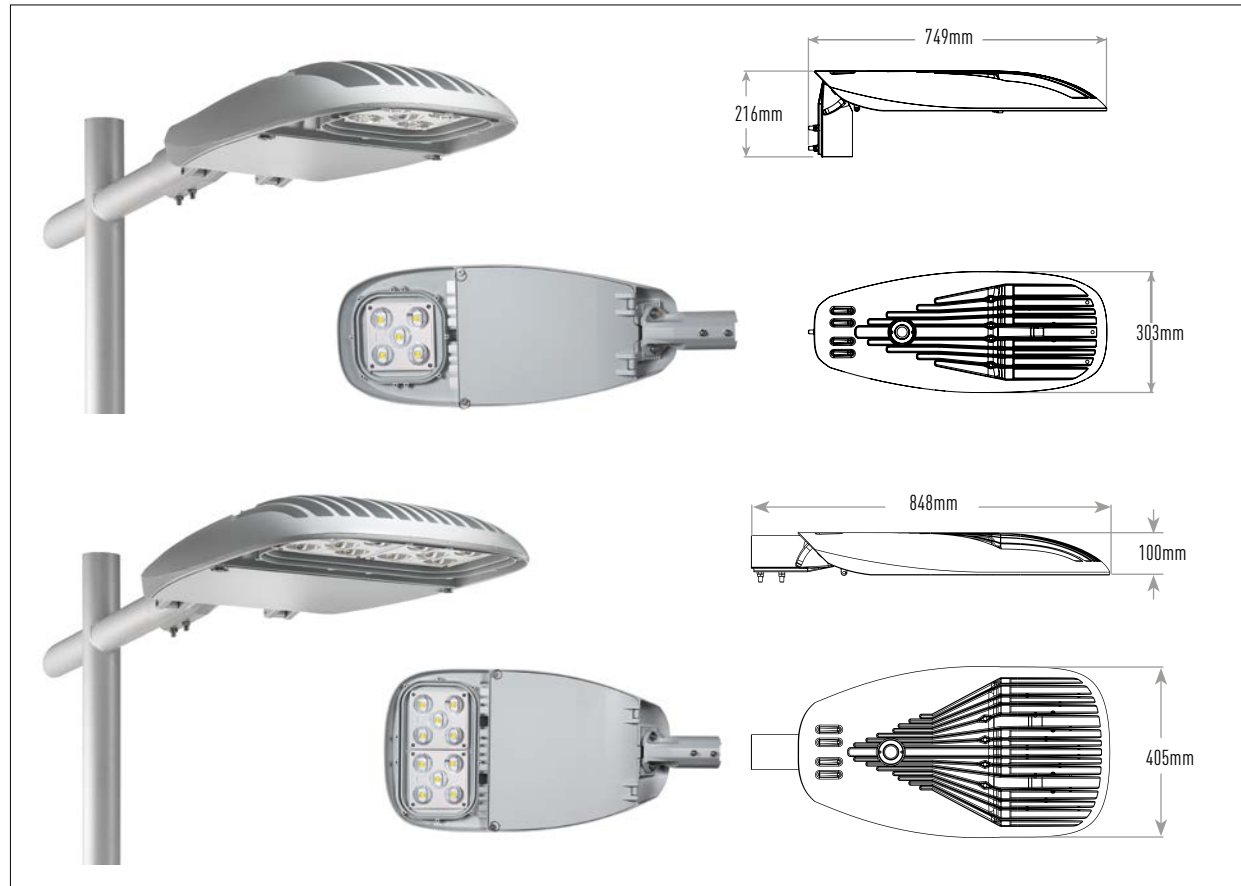
Options

		Option DIM	Option Q#	Option Q#D	Option A# B#
Version B	Single module	✓	✓	✓	✓
	Double module	✓	✓	✓	✓



Cree XSP C

Single / double module - Horizontal / vertical tenon



Options

		Option Q#	Option Y# Z#	Option G#	Option L#	Option DL	Option CL	Option DCL	Option DY
Version C	Single module	E 98W	✓	✓	—	—	—	—	—
		H 67W	—	—	✓	✓	✓	✓	✓
	Double module	F 136W	✓	✓	—	—	—	—	—
		I 116W	—	—	✓	✓	✓	✓	✓

Accessory information

KIT-XSP-AP60-48-60	Fitter kit to mount to 48mm tenon
KIT-XSP-AP60-42-60	Fitter kit to mount to 42mm tenon
KIT-XSP-AP60-34-60	Fitter kit to mount to 34mm tenon



Ordering Information

Example: XSPC022LGF30K+24SVQ#01 or XSPC022LGH30K+24SVG#01

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color Options	Options	Cable length*
XSP	C	02** horiz/vert tenon 60mm OD (+/- 5°)	2LG Type II Long	E 98W F 136W	30K 3000K 40K 4000K 57K 5700K	+ Class 1 ^ Class 2	24 220-240V	SV Silver BK Black BZ Bronze SB Silver Bronze WH White	No code Fixed Output Q# Field Adjustable Output - Requires no additional wiring Y# Virtual Midnight Z# - Field programmable NEM Nema socket - NEMA 7 pin with 1-10V (available only in Class 1) NQ# Nema socket - NEMA 7 pin with Field Adjustable (available only in Class 1) NY# Nema socket - NEMA 7 pin with Virtual Midnight Y (available only in Class 1) NZ# Nema socket - NEMA 7 pin with Virtual Midnight Z (available only in Class 1)	No code Standard (w/o cable) 01 Exit cable 30cm 03 Exit cable 3m 06 Exit cable 6m 10 Exit cable 10m 12 Exit cable 12m
XSP	C	03 horiz/vert tenon 76mm OD (+/- 20°)	210 Type II Short 1.0 2SH Type II Short 3SH Type III Short 3ME Type III Medium 4ME Type IV Medium 5ME Type V Medium 5SH Type V Short	H 67W I 116W	30K 3000K 40K 4000K 57K 5700K	+ Class 1 ^ Class 2	24 220-240V	SV Silver BK Black BZ Bronze SB Silver Bronze WH White	No code Fixed Output G# Lineswitch L# Lumistep DL DALI CL CLO DCL Dyn + CLO DY Dynadimmer NDL Nema socket - NEMA 7 pin with DALI (available only in Class 1) NCL Nema socket - NEMA 7 pin with CLO (available only in Class 1) NDC Nema socket - NEMA 7 pin with DALI and CLO (available only in Class 1)	No code Standard (w/o cable) 01 Exit cable 30cm 03 Exit cable 3m 06 Exit cable 6m 10 Exit cable 10m 12 Exit cable 12m

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color Options	Options	Cable length*
XSP	C	02** horiz/vert tenon 60mm OD (+/- 5°)	2LG Type II Long 275 Type II Short 0.75	H 67W I 116W	30K 3000K 40K 4000K 57K 5700K	+ Class 1 ^ Class 2	24 220-240V	SV Silver BK Black BZ Bronze SB Silver Bronze WH White	No code Fixed Output G# Lineswitch L# Lumistep DL DALI CL CLO DCL Dyn + CLO DY Dynadimmer NDL Nema socket - NEMA 7 pin with DALI (available only in Class 1) NCL Nema socket - NEMA 7 pin with CLO (available only in Class 1) NDC Nema socket - NEMA 7 pin with DALI and CLO (available only in Class 1)	No code Standard (w/o cable) 01 Exit cable 30cm 03 Exit cable 3m 06 Exit cable 6m 10 Exit cable 10m 12 Exit cable 12m
XSP	C	03 horiz/vert tenon 76mm OD (+/- 20°)	210 Type II Short 1.0 2SH Type II Short 3SH Type III Short 3ME Type III Medium 4ME Type IV Medium 5ME Type V Medium 5SH Type V Short	H 67W I 116W	30K 3000K 40K 4000K 57K 5700K	+ Class 1 ^ Class 2	24 220-240V	SV Silver BK Black BZ Bronze SB Silver Bronze WH White	No code Fixed Output G# Lineswitch L# Lumistep DL DALI CL CLO DCL Dyn + CLO DY Dynadimmer NDL Nema socket - NEMA 7 pin with DALI (available only in Class 1) NCL Nema socket - NEMA 7 pin with CLO (available only in Class 1) NDC Nema socket - NEMA 7 pin with DALI and CLO (available only in Class 1)	No code Standard (w/o cable) 01 Exit cable 30cm 03 Exit cable 3m 06 Exit cable 6m 10 Exit cable 10m 12 Exit cable 12m

* w/o connector

** horiz/vert tenon 60mm OD (+/-20°) available upon request



Cree XSP Series

Cree XSP R

The Cree XSPR LED street light uses over 50% less energy and is designed to affordably replace 70W and up to 100W High Pressure Sodium street lights found in many residential areas. With less time and money spent on street lights, municipalities can redirect those resources to other community improvement projects.

The XSPR high-efficiency driver and power supply offer robust performance constant over the life of the fixture.

Utilizing highly-diffused performance optics for soft, glare-free light, XSPR luminaires obtain better optical control with the Cree NanoOptic Precision Delivery Grid optical system.

In fact it is offered in different optical distributions to place more lumens in the target area.

State-of-the-art flow-through heat sink technology delivers a decade of near maintenance-free performance as compared to traditional HPS while maintaining the traditional street light design.

The hassle-free design of the XSPR luminaire includes a die cast aluminium housing with a UV stabilized polymeric door.

Its simplified mounting system allows an immediate direct mounting solution or it can be provided with a tenon mounting system that allows for direct arm or pole-top installation (90°) on cylindrical poles and arms with a diameter of 60mm or 76mm. In addition, the adjustable bracket allows the fixture to be tilted by increments of +/- 5 degrees in order to find the ideal position or maintain a horizontal position with respect to the ground.

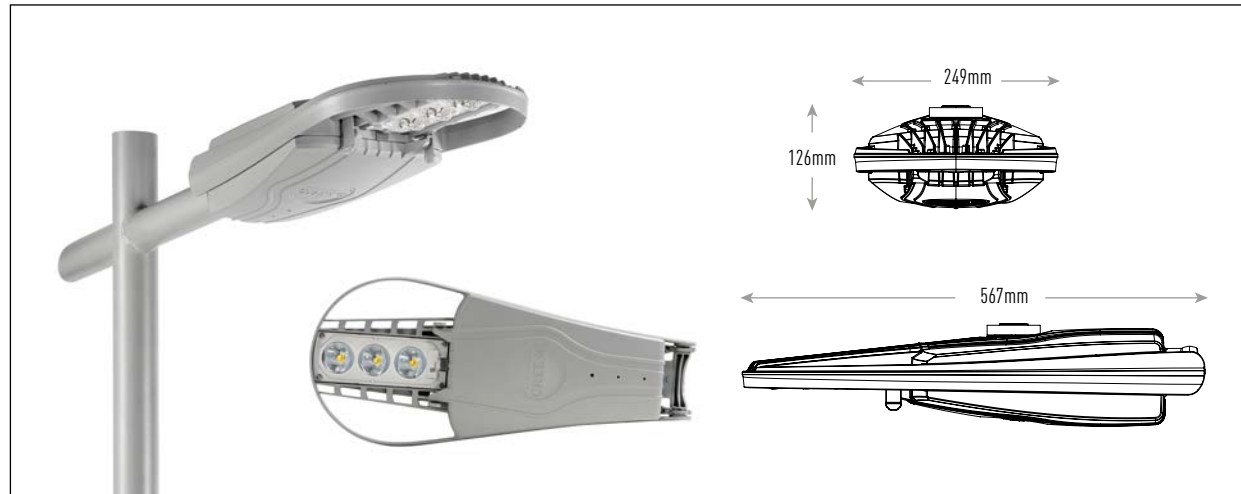
The exclusive Colorfast DeltaGuard finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion.

Cree XSPR is available in a Silver colour.

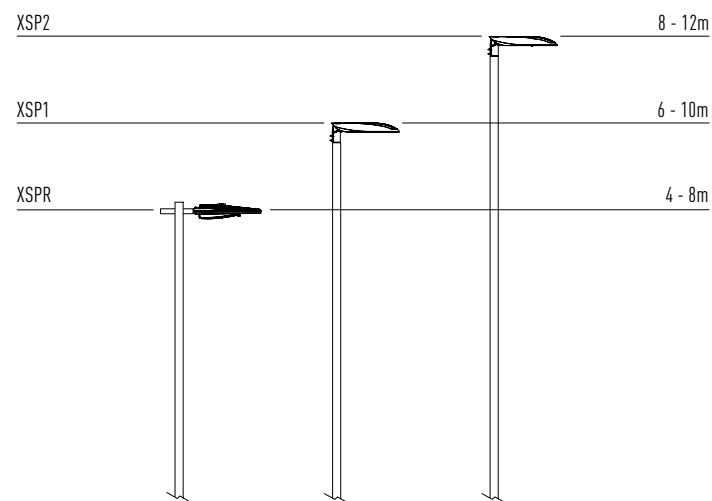
Optical system:	NanoOptic® Precision Delivery Grid™
Colour temperature:	3000K, 4000K or 5700K
CRI:	Minimum 70
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver
Limited warranty:	Class 1 – 10 years on luminaire / 10 years on Colorfast DeltaGuard® finish Class 2 – 5 years on luminaire / 10 years on Colorfast DeltaGuard® finish

Cree XSP R

Direct mount or adjustable arm



Installation mounting height



Accessory information

KIT ADATT.PALO 34MM	Adapter kit for dia. 34mm poles
KIT ADATT.PALO 42MM	Adapter kit for dia. 42mm poles
KIT ADATT.PALO 48MM	Adapter kit for dia. 48mm poles

Ordering Information

Example: XSPR**B072LG40K+24SV**DIM**03**

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color	Options	Cable length*
XSPR	B	HT Horizontal tenon mount	2LG Type II Long	A 54W	30K 3000K	+ Class 1	24 220-240V	SV Silver	No code DIM Dimmable 1-10V - Control by others (only with Input Power A)	No code 03 Standard (w/o cable)
		07 Adjustable mount (60mm)	275 Type II Short 0.75	B 41W	40K 4000K	^ Class 2			Q# Field Adjustable Output - Requires no additional wiring (only with Input Power A)	06 Exit cable 3m
		08 Adjustable mount (76mm)	210 Type II Short 1.0		57K 5700K				Q#D Field Adjustable Dimming	10 Exit cable 10m
			2SH Type II Short						C# Virtual Midnight - Field programmable (only with Input Power A)	
			3SH Type III Short						D# Constant Lumen Output - Field programmable (only with Input Power B)	
			3ME Type III Medium						DY# Dynadimmer (only with Input Power B)	
			4ME Type IV Medium							

* w/o connector

Options

		Option DIM	Option Q#	Option C# D#	Option CLO	Option DY#	Option Q#D
Version B	A 54W	✓	✓	✓	-	-	✓
	B 41W	-	-	-	✓	✓	-





Cree XSP Series

Cree XSP W

Nothing speaks to security like reliability. The XSPW LED Wall Pack leverages Cree's innovative technology, developed for the industry-leading XSP Series street lights, offering customers a premier site lighting solution that incorporates exceptional thermal management with high-quality components and an unmatched paint finish, making Cree LED solutions highly reliable. The result is an LED system capable of providing more than a decade of near maintenance-free service, replacing existing wall packs simply and easily for a high-quality, even illumination.

The XSPW wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminium housing and mounting box are designed for standard wall installation. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weathertight LED driver compartment and thermal management. Optic design features industry-leading NanoOptic Precision Delivery Grid system in multiple distributions.

The XSPW luminaires are ideal for general area and security lighting.

Optical system:	NanoOptic® Precision Delivery Grid™
Colour temperature:	3000K, 4000K or 5700K
CRI:	Minimum 70 CRI
Insulation class:	Class I
IP rating:	IP65
Colours:	Silver, Bronze, Black and White
Limited warranty:	5 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree XSP W

Wall direct mount



Ordering Information

Example: XSPWAW2MED30K+24SVDIM

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color	Options
XSPW	A	W Wall	2ME* Type II Medium 3ME Type III Medium	D 38W	30K 3000K 40K 4000K 57K* 5700K	+ Class 1	24 220-240V	SV Silver BK Black BZ Bronze WH White	DIM No code Fixed Output DIM* 1-10V Dimming

* available from Nov.16





Cree Ledway Series

Since its launch, Cree Ledway Series has become one of the most successful Cree street lights, gaining a reputation based on performance and value.

Available in 10-LED increments (20 to 120 LEDs), flexible drive currents and more than 20 optical distributions, the Ledway Series luminaires can be "right-sized" to provide exacting illumination performance that minimizes first cost while maximizing energy savings.

The fixture body is made from aluminium and its slim design provides extremely low wind exposure. The compartment containing the electrical components is made from die-cast aluminium and can be accessed without the need for tools. The lightbar mount is made from extruded aluminium and is designed to optimize the dissipation of the heat generated by the LEDs using Cree Airflow technology.

Cree Ledway fixtures are equipped with the patented NanoOptic optical system. This system utilizes a high-output precision lens with each diode (lens tested in accordance with Standard CEI EN 62471 for photobiological safety). This exclusive NanoOptic technology directs the light with extreme precision, without creating dispersion or shady areas.

The surface finish of the fixture is treated with Colorfast Deltaguard technology, which includes several material pre-treatment stages, a high-adherence epoxy primer and a polyester powder top coat. This treatment provides extremely high resistance to corrosion, abrasion and peeling and maintains color stability over time, even in the event of high exposure to sunlight.

Cree Ledway Road

Cree Ledway Road is a fixture designed to provide the best performance for street and urban lighting. It offers high levels of illumination, excellent uniformity and high color rendering.

Mounting 7

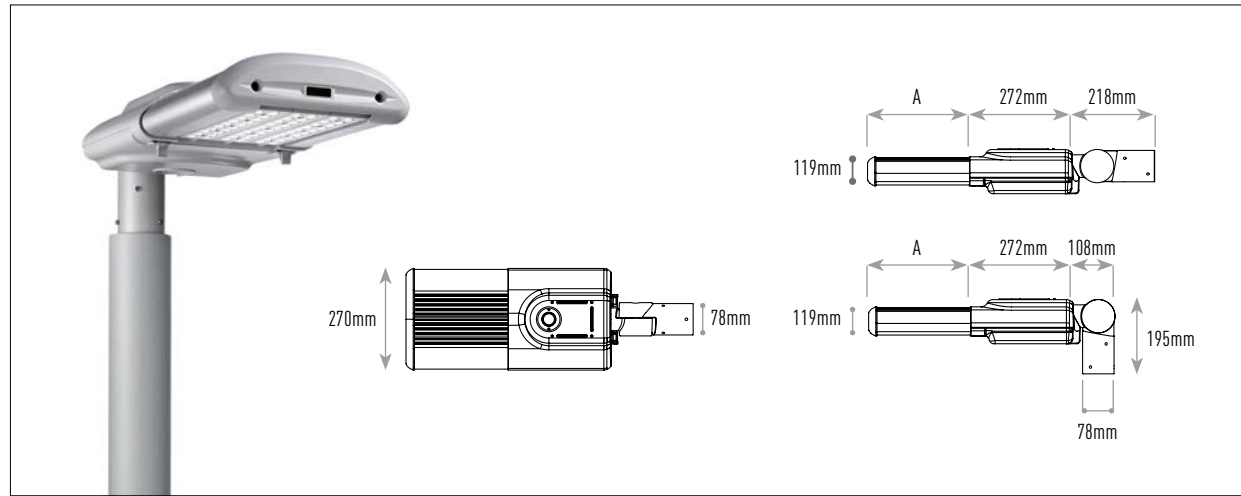
Ledway Road is provided with a tenon mounting system that allows for direct arm or pole-top installation (90°) on cylindrical poles and arms with a diameter of 60mm. The adjustable bracket allows the fixture to be tilted by increments of +/- 5 degrees in order to maintain a horizontal position with respect to the ground, making it ideal for retrofit.



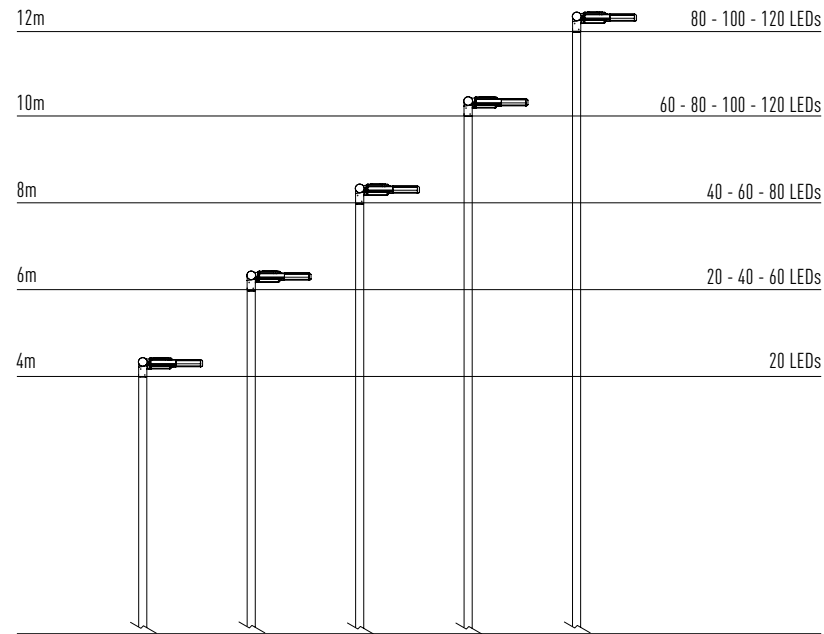
Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	Class 1 - 10 years on luminaire/10 years on Colorfast DeltaGuard® finish Class 2 - 5 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree Ledway Road

Mounting 7 - With tilt adjustment for 60mm OD cylindrical poles and/or arms

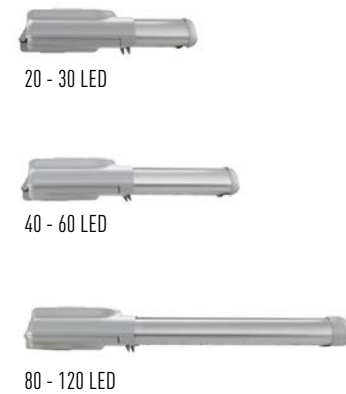


Installation mounting height



Dimensions

LED Count	Dim. "A"
20	156mm
30	156mm
40	270mm
50	270mm
60	270mm
80	552mm
90	552mm
100	552mm
110	552mm
120	552mm



Accessory information

BRDSPK30	Bird Spikes (20 - 30 LEDs)
BRDSPK60	Bird Spikes (40 - 60 LEDs)
BRDSPK120	Bird Spikes (80 - 120 LEDs)
BRDSPKHSG	Bird spikes housing

KIT ADATT.PALO 34MM	Adapter kit for dia. 34mm poles
KIT ADATT.PALO 42MM	Adapter kit for dia. 42mm poles
KIT ADATT.PALO 48MM	Adapter kit for dia. 48mm poles

Ordering Information

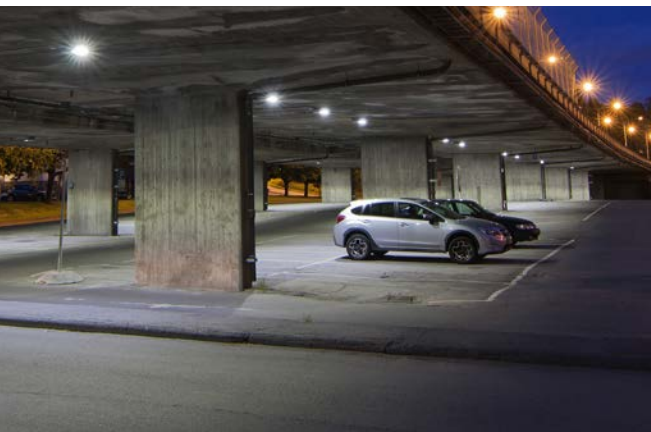
Example: LXDAC702E43BK15

L	X	D	AC	7	02	E	43	BK	I5
Product	Insulation Class	Model	Optic	Mounting	LED Count (x10)	Version	Options	Color	Drive Current
L Ledway	X Class 1 Y Class 2	D Road	AC ACB PR PRB TS TSB TM TMB QV QVS 1S 15 25 40 FS	7	02 03 04 05 06 08 09 10 11 12	E	No code 5700K 43 4000K K# Light Control with Occupancy Sensor - Flux dimming control with occupancy sensor D# Power Line Communication System (PLC) - Power line control system with dimmable driver G# Bi-Level Control - Two distinct power levels, High/Low D Dimmable Driver - Dimmable driver 1-10V with external controller S# Virtual Midnight - Two levels option with virtual midnight T# Reprogrammable Virtual Midnight - Reprogrammable 2 levels option with virtual midnight Q# Field Adjustable Output	BK Black BZ Bronze SB Silver SV Silver WH White	No code 700mA I5 525mA I3 350mA

Options

	Option 43=40K	Option K#	Option D#	Option G#	Option D	Option S#	Option T#	Option Q#
Class I	✓	✓	✓	✓	✓	✓ up to 100 LED	✓	✓
Class II	✓	—	✓	✓	✓	✓ up to 60 LED	✓	✓





Cree Ledway Series

Cree Ledway Multi

Cree Ledway Multi is a modular system available in 10-LED increments (20 to 120 LEDs), flexible drive currents and many optical distributions.

The luminaire housing is all aluminium construction, with tool-less entry, and all components are mercury-free and recyclable.

The sharp profile provides extremely low wind exposure. Mechanically solid and with an extremely strong build, this fixture is the ideal solution for industrial installation lighting, but also car-park, pedestrian crossing and perimeter area lighting.

Cree Ledway Multi is equipped with the patented NanoOptic optical system. This exclusive technology directs the light with extreme precision, without creating dispersion or shady areas.

The surface finish of the fixture is treated with Colorfast Deltaguard technology, extremely resistant also in situations like the harsh environment of industrial sites.

The various different mounting systems available make this fixture extremely versatile and ideal for any ceiling, busway and wall mounting installation.

Mounting M

Busway mounting configuration for ceiling applications, available in two sizes: busway mounting 20-60 LEDs and 80-120 LEDs

Mounting 4M - 180°

Configuration for wall mounting bracket at 180°

Mounting M 90°

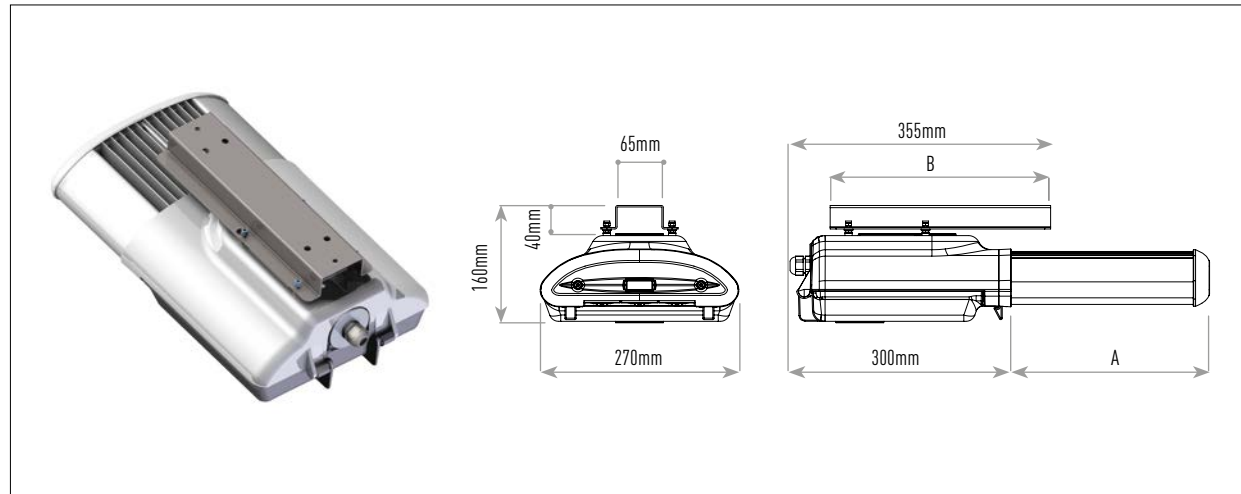
Configuration for wall mounting bracket at 90°



Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	Class 1 - 10 years on luminaire/10 years on Colorfast DeltaGuard® finish Class 2 - 5 years on luminaire/10 years on Colorfast DeltaGuard® finish

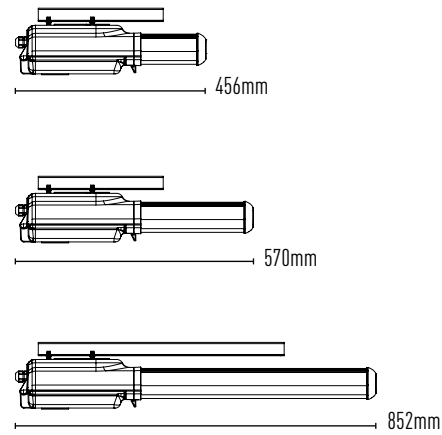
Cree Ledway Multi

Mounting M - Configuration for ceiling and busway mounting bracket



Dimensions

LED Count	Dim. "A"	Dim. "B"
20	156mm	300mm
30	156mm	300mm
40	270mm	300mm
50	270mm	300mm
60	270mm	300mm
80	552mm	600mm
90	552mm	600mm
100	552mm	600mm
110	552mm	600mm
120	552mm	600mm



Accessory information

BRDSPK30	Bird Spikes (20 - 30 LEDs)	PM-MLW	Mounting for ceiling applications. Configured for busway mounting 20 - 60 LEDs
BRDSPK60	Bird Spikes (40 - 60 LEDs)	PM-MLLW	Mounting for ceiling applications. Configured for busway mounting 80 - 120 LEDs
BRDSPK120	Bird Spikes (80 - 120 LEDs)		

Ordering Information

Example: LXD**ACM**02E**43BK**I5

L	X	D	AC	M	02	E	43	BK	I5
Product	Insulation Class	Model	Optic	Mounting	LED Count (x10)	Version	Options	Color	Drive Current
L	X	D	AC	M	02	E	No code	BK	No code
Ledway	Class 1	Multi	PR	(configuration for ceiling and busway mounting)	03		5700K	Black	700mA
	Y		TS		04		43	BZ	I5
	Class 2		TM		05		4000K	Bronze	525mA
			QV		06		K#	SB	I3
			QVS		08		Light Control with Occupancy Sensor	Silver	350mA
			1S		09		- Flux dimming control with occupancy sensor	Bronze	
			15		10		D#	SV	
			25		11		Power Line Communication System (PLC)	Silver	
			40		12		- Power line control system with dimmable driver	White	
			FS				G#	WH	
							Bi-Level Control		
							- Two distinct power levels, High/Low		
							D		
							Dimmable Driver		
							- Dimmable driver 1-10V with external controller		
							S#		
							Virtual Midnight		
							- Two levels option with virtual midnight		
							T#		
							Reprogrammable Virtual Midnight		
							- Reprogrammable 2 levels option with virtual midnight		
							Q#		
							Field Adjustable Output		

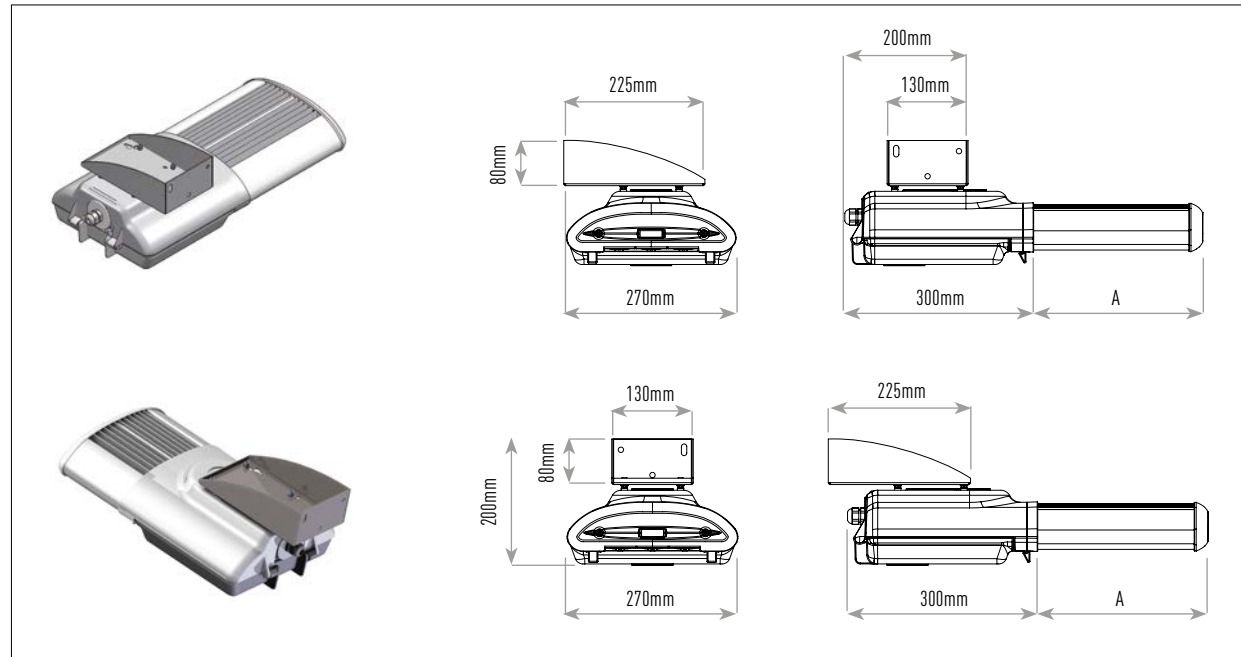
Options

	Option 43=40K	Option K#	Option D#	Option G#	Option D	Option S#	Option T#	Option Q#
Class I	✓	✓	✓	✓	✓	✓ up to 100 LED	✓	✓
Class II	✓	—	✓	✓	✓	✓ up to 60 LED	✓	✓



Cree Ledway Multi

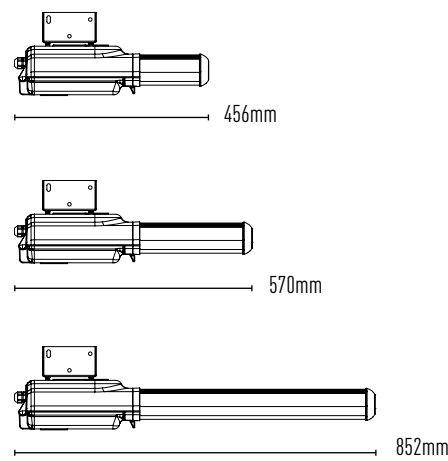
Mounting M90° and 4M180° - Configuration for wall mounting bracket at 90° and 180°



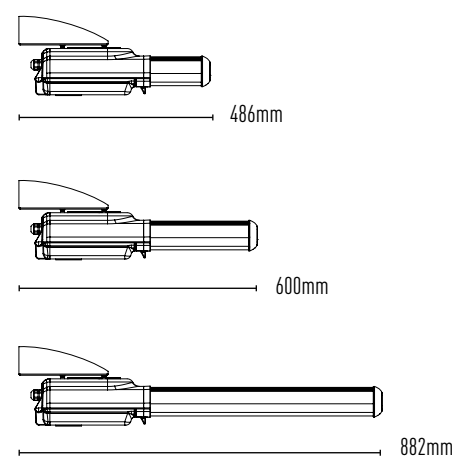
Dimensions

LED Count	Dim. "A"
20	156mm
30	156mm
40	270mm
50	270mm
60	270mm
80	552mm
90	552mm
100	552mm
110	552mm
120	552mm

M90°



M180°



Accessory information

BRDSPK30	Bird Spikes (20 - 30 LEDs)
BRDSPK60	Bird Spikes (40 - 60 LEDs)
BRDSPK120	Bird Spikes (80 - 120 LEDs)

PM-WLW	mounting for wall applications (90 or 180°)
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Ordering Information

Example: LXDACBM02E43BK15

L	X	D	ACB	M	02	E	43	BK	I5
Product	Insulation Class	Model	Optic	Mounting	LED Count (x10)	Version	Options	Color	Drive Current
L	X	D	ACB	M	02	E	No code	BK	No code
Ledway	Class 1	Multi	PRB	(configuration for wall mounting bracket at 90°)	03		5700K	Black	700mA
	Y		TSB		04		43	BZ	I5
	Class 2		TMB		05		4000K	Bronze	525mA
			(with Backlight Shield)	4M	06		K#	SB	I3
				(configuration for wall mounting bracket at 180°)	08		Light Control with Occupancy Sensor	Silver	350mA
					09		- Flux dimming control with occupancy sensor	SV	
					10		D#	WH	
					11		Power Line Communication System (PLC)	White	
					12		- Power line control system with dimmable driver		
							G#		
							Bi-Level Control		
							- Two distinct power levels, High/Low		
							D		
							Dimmable Driver		
							- Dimmable driver 1-10V with external controller		
							S#		
							Virtual Midnight		
							- Two levels option with virtual midnight		
							T#		
							Reprogrammable Virtual Midnight		
							- Reprogrammable 2 levels option with virtual midnight		
							Q#		
							Field Adjustable Output		

Options

	Option 43=40K	Option K#	Option D#	Option G#	Option D	Option S#	Option T#	Option Q#
Class I	✓	✓	✓	✓	✓	✓ up to 100 LED	✓	✓
Class II	✓	-	✓	✓	✓	✓ up to 60 LED	✓	✓





Cree Ledway Series

Cree Ledway E-Tunnel

Cree Ledway E-Tunnel is a solution developed specifically for the LED-based lighting of tunnels and underpasses.

The patented universal bracket provided with the fixtures is designed to allow the installation of Ledway E-Tunnel fixtures on the most common types of metal cable holders. The fixed bracket with 0 degrees of tilt adjustment adapts to tunnel-specific design requirements.

The fixture body is made from aluminium and its slim design provides extremely low wind exposure. The compartment containing the electrical components is made from die-cast aluminium and can be accessed without the need for tools. The lightbar mount is made from extruded aluminium and is designed to optimize the dissipation of the heat generated by the LEDs using Cree Airflow technology.

Ledway E-Tunnel fixtures are equipped with the patented NanoOptic optical system. The modular system makes it possible to choose between the different powers available. The lightbars are composed of 10 or 20 LEDs, making it possible to assemble a fixture with a number of LEDs that can vary from 20 up to 120. The surface finish of the fixture is treated with Colorfast Deltaguard technology, which includes several material pre-treatment stages, a high-adherence epoxy primer and a polyester powder top coat. This treatment provides extremely high resistance to corrosion, abrasion and peeling and maintains color stability over time, even in the event of high exposure to sunlight.

Mounting T

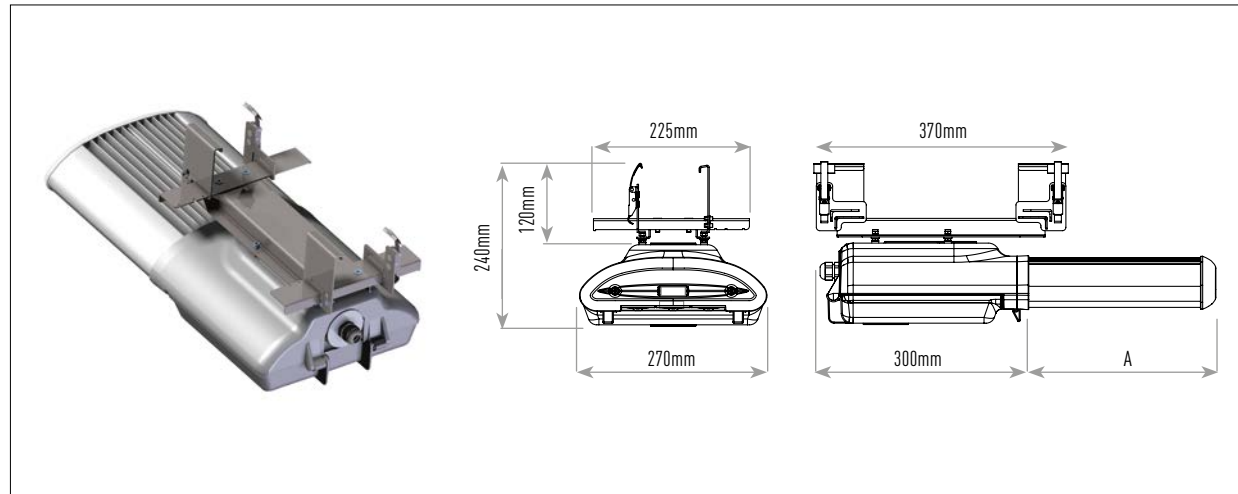
Tunnel application (fixed orientation 0°)



Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	Class 1 - 10 years on luminaire/10 years on Colorfast DeltaGuard® finish Class 2 - 5 years on luminaire/10 years on Colorfast DeltaGuard® finish

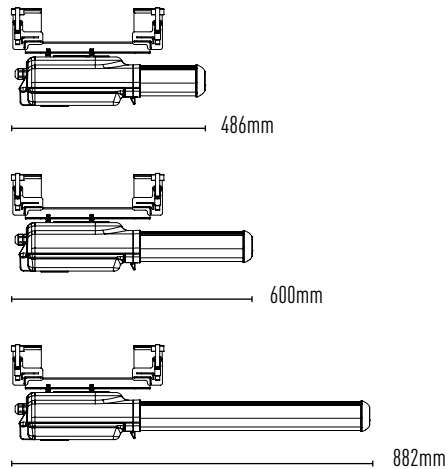
Cree Ledway E-Tunnel

Mounting T - Tunnel mounting system



Dimensions

LED Count	Dim. "A"
20	156mm
30	156mm
40	270mm
50	270mm
60	270mm
80	552mm
90	552mm
100	552mm
110	552mm
120	552mm



Accessory information

BRDSPK30	Bird Spikes (20 - 30 LEDs)
BRDSPK60	Bird Spikes (40 - 60 LEDs)
BRDSPK120	Bird Spikes (80 - 120 LEDs)

Ordering Information

Example: LXDACT02E43BK15

L	X	D	AC	T	02	E	43	BK	I5	
Product	Insulation Class	Model	Optic	Mounting	LED Count (x10)	Version	Options	Color	Drive Current	
L	X Class 1	D E-Tunnel	AC	T (Tunnel mounting system)	02	E	No code	BK Black	No code 700mA	
	Y Class 2		PR		03		5700K			
			TS		04		43 4000K	BZ Bronze	I5 525mA	
			TM		05		K# Light Control with Occupancy Sensor - Flux dimming control with occupancy sensor	SB Silver	I3 350mA	
			QV		06			SV Silver		
			QVS		08			D# Power Line Communication System (PLC) - Power line control system with dimmable driver		WH White
			1S		09			G# Bi-Level Control - Two distinct power levels, High/Low		
			FS		10		D Dimmable Driver - Dimmable driver 1-10V with external controller			
					11			S# Virtual Midnight - Two levels option with virtual midnight		
					12			T# Reprogrammable Virtual Midnight - Reprogrammable 2 levels option with virtual midnight		
							Q# Field Adjustable Output			

*The code does not include the bracket. Available mounting system PM-T0LW (fixed orientation 0)

Options

	Option 43=40K	Option K# (700mA) - ###mA	Option D#	Option G#	Option D	Option S#	Option T#	Option Q
Class I	✓	✓	✓	✓	✓	✓ up to 100 LED	✓	✓
Class II	✓	—	✓	✓	✓	✓ up to 60 LED	✓	✓



Cree OSQ Series

The Cree OSQ Series luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged die-cast aluminium with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, clean design minimizes wind load requirements and blends seamlessly into the site providing even, high-quality illumination.

The fixture is available in two sizes and three different input powers that provide the lumen package needed:

'A' Input power designator is a suitable upgrade for HID applications up to 150 Watts

'J' Input power designator is a suitable upgrade for HID applications up to 250 Watts

'S' Input power designator is a suitable upgrade for HID applications up to 400 Watts

Cree OSQ Series presents an advanced thermal management system through the fin design that allows for an efficient heat transfer; also the airflow nearer to the LEDs is conceived for greater efficiency.

Designed for uplight and downlight applications, Cree OSQ Series mounts to round or square poles through two available mounting systems, with an accessory direct or adjustable adapter.

Cree OSQ Series luminaires are an optimal solution for applications such as parking lots, walkways, campuses, car dealerships, office complexes and internal roadways.

Direct mounting

Convenient interlocking mounting method on direct arm mount. The mounting adapter is rugged die-cast aluminium and mounts to a 76-152mm square or round pole.

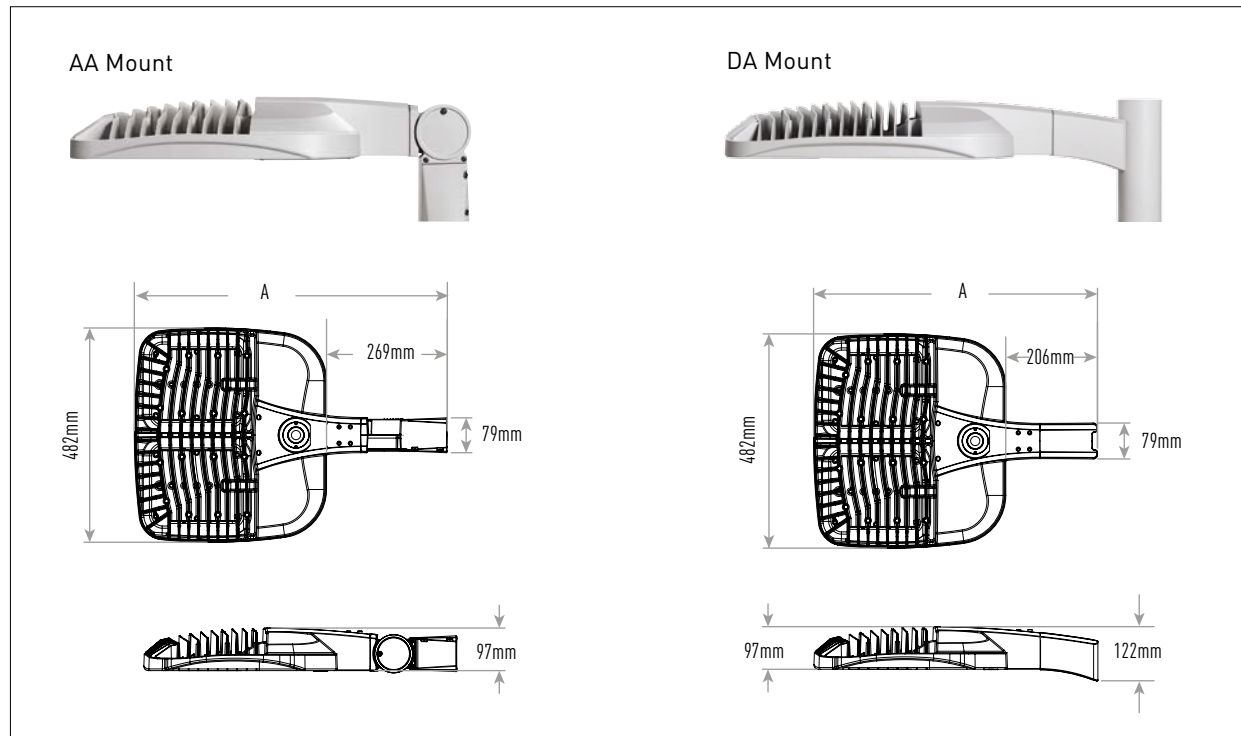
Adjustable Arm mounting

The adjustable arm mount adapter is rugged die-cast aluminium and mounts to a 60mm OD tenon. It can be adjusted 180° in 2.5° increments for angled lighting applications.

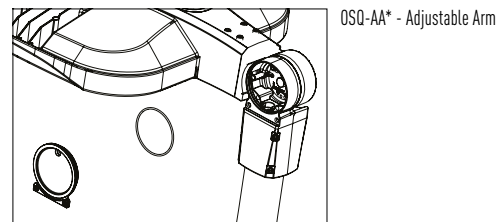
Optical system:	NanoOptic® Precision Delivery Grid™
Colour temperature:	3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
CRI:	70 CRI (4000K & 5700K); 80 CRI (3000K)
Insulation class:	Class I and Class II
IP rating:	IP66
Colours:	Silver, Bronze, Black and White
Limited warranty:	Class 1 - 10 years on luminaire/10 years on Colorfast DeltaGuard® finish Class 2 - 5 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree OSQ

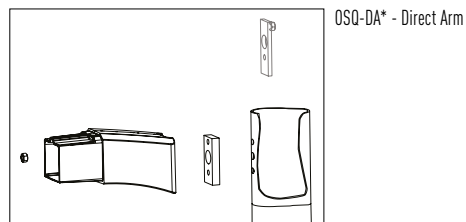
LED Area luminaire - Direct mount or adjustable arm mount



Mounting options (to be ordered separately)



OSQ-AA* - Adjustable Arm



OSQ-DA* - Direct Arm

* Colour options are: **SV** Silver **BK** Black **BZ** Bronze **WH** White

Dimensions

Input Power Designator	System Watts	Measure "A" - AA	Measure "A" - DA
A (Medium)	112W	701mm	635mm
J (Medium)	168W	701mm	635mm
S (Large)	223W	757mm	691mm

Accessory information

OSQ-BLSMF / OSQ-BLSLF	Backlight Shield
OSQ-BLSMR / OSQ-BLSLR	Rotated optics

Ordering Information

Example: QVSNM2ME30K+ULBKDIM

Product	Version	Mounting	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color	Options
OSQ	A	NM No Mount	2ME* Type II Medium 3ME* Type III Medium 4ME* Type IV Medium 5ME Type V Medium 5SH Type V Short	A 112W J 168W S 223W	30K 3000K 40K 4000K 57K 5700K	+ Class 1 ^ Class 2	UL Universal 220-240V	BK Black BZ Bronze SV Silver WH White	DIM 1-10V Dimming Control by others Can't exceed wattage of specified input power designator Q9 Field Adjustable Output Level Factory Set Power levels from 1 to 8 to be set on field by installer RL Rotate Left LED and optic are rotated to the left RR Rotate Right LED and optic are rotated to the right VM Virtual Midnight

* Available with Backlight Shield when ordered with field-installed accessory

Options

	Option DIM	Option Q9	Option RL	Option RR	Option VM
Class I	✓	✓	✓	✓	✓
Class II	✓	✓	✓	✓	✓



Cree Edge Pathway

Cree Edge Pathway

Cree Edge Pathway is the solution specifically designed for lighting footpaths, access paths and building perimeters. It is designed to integrate well with any architectural style. Cree Edge Pathway is a product which, thanks to the three configurations offered, provides excellent flexibility for lighting design projects.

The fixture is small in size and conforms to IP65 protection standards. The shield and supporting structure are made from die-cast aluminium. Cree Edge Pathway can be installed directly on the ground using the three anchoring bolts provided. The 18 LED lightbar is located in the upper part of the shield to ensure the best optical control.

The heat dissipation system is internal and is designed to provide long life and maximum light output for the diodes.

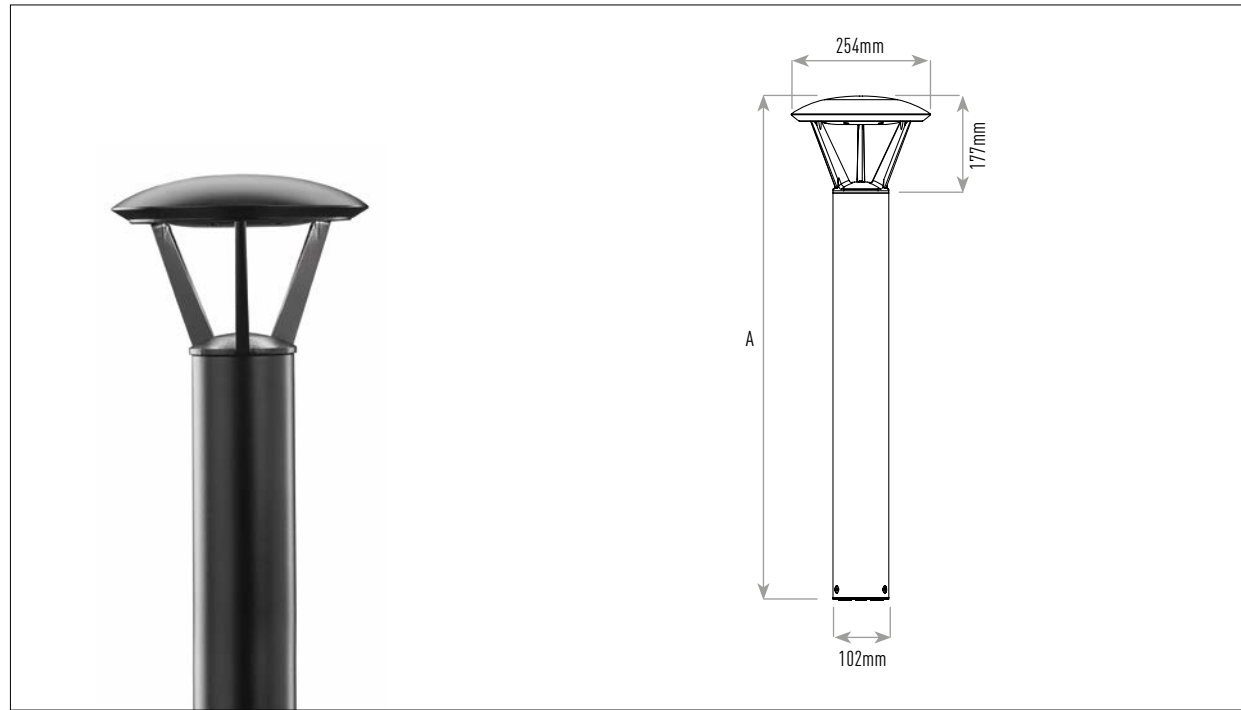
The surface finish of the fixture is treated with Colorfast Deltaguard technology, which includes several material pre-treatment stages, a high-adherence epoxy primer and a polyester powder top coat. This treatment provides extremely high resistance to corrosion, abrasion and peeling and maintains color stability over time, even in the event of high exposure to sunlight.



Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K), 5700K (+/- 500K) standard
CRI:	Minimum 75 CRI
Insulation class:	Class I and Class II
IP rating:	IP65
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	Class 1 - 10 years on luminaire/10 years on Colorfast DeltaGuard® finish Class 2 - 5 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree Edge Pathway

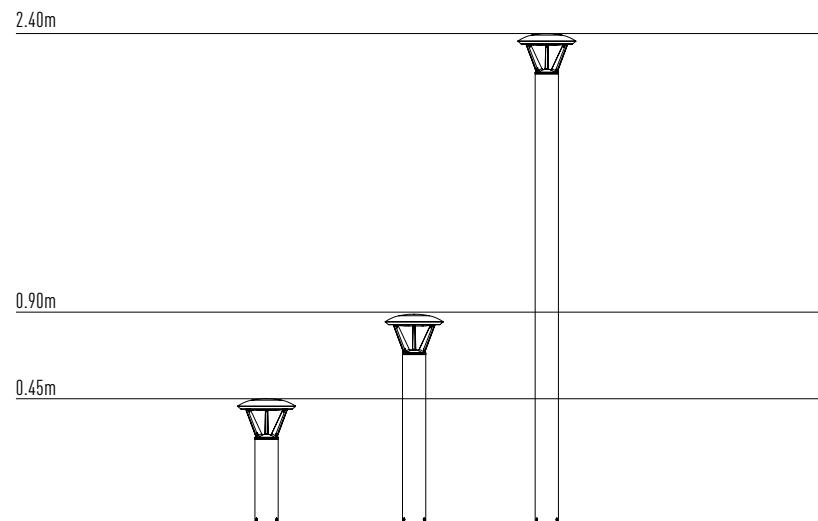
Mounting 0 - Direct mount



Dimensions

LED Count	Power System W (350mA)	Power System W (525mA)	Dim. "A"
18	22	34	450mm
18	22	34	900mm
18	22	34	2400mm

Installation mounting height



Ordering Information

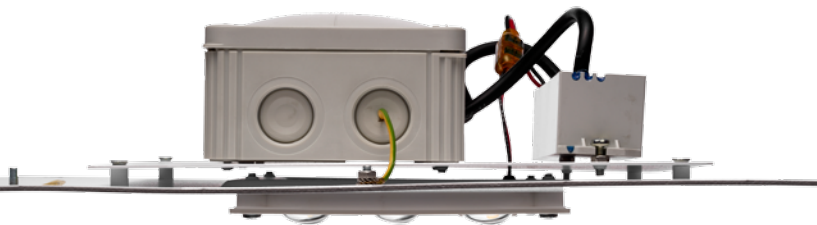
Example: LXHPR01804E43BK15

L	X	H	PR	0	18	04	E	43	BK	I5
Product	Insulation Class	Model	Optic	Mounting	LED Count	Height	Series	Options	Color	Drive Current
L Edge	X Class 1 Y Class 2	H Pathway	AC PR TS TM QV QVS 1S FS	0 Direct mount	18	04 450mm 09 900mm 24 2400mm	E	No code 43 G Tri-power 525 - 350 - 175 mA	BK Black BZ Bronze SB Silver Bronze SV Silver WH White	I3 350mA I5 525mA - Available only in Class 1

Options

	Option 43=40K	Option G# 525mA - 175mA
Class I	✓	✓
Class II	✓	—





Cree RKT Series

This piece of Cree technology utilizes a stand-alone light engine and a mounting base that can be mounted in existing installations. Upgrading to LED lighting has never been so easy: improve energy efficiency, reduce maintenance costs and reuse the existing lantern or decorative post-top luminaire.

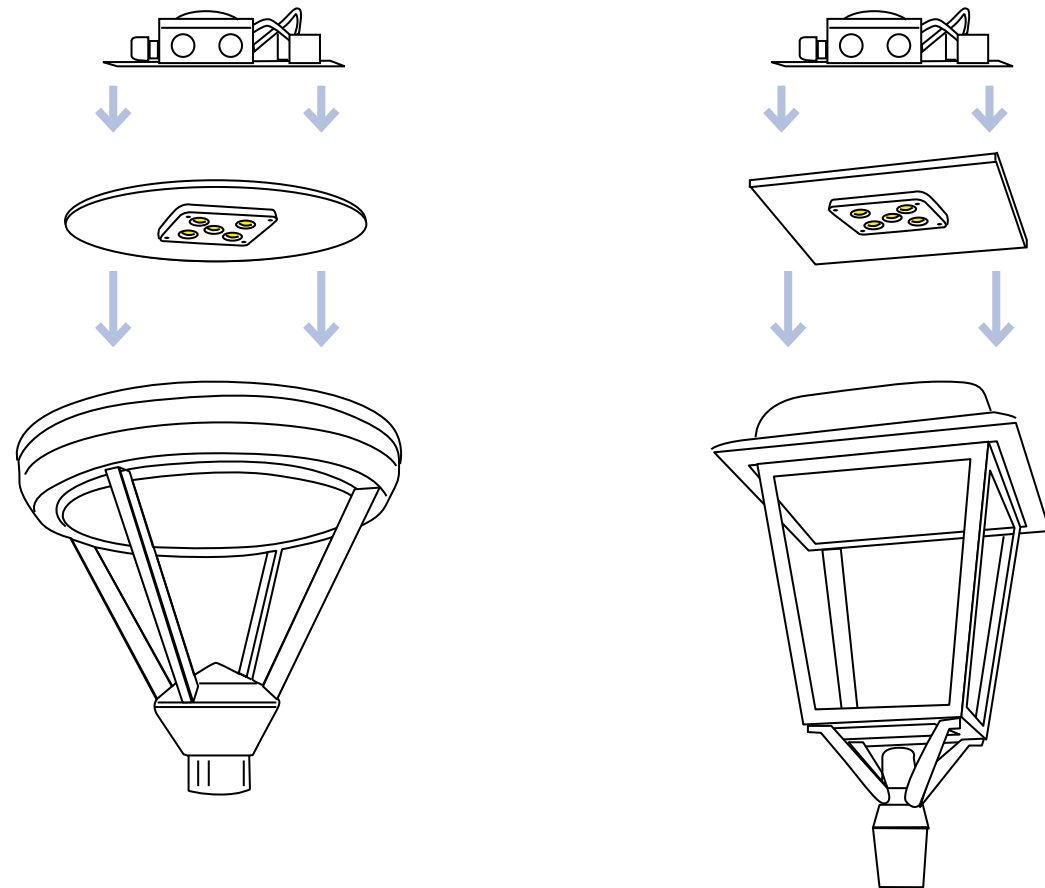
Preserve the historic look of a streetscape, maintain safety and eliminate compliance hurdles with the Cree RKT Series. Powered by Cree technology and featuring the NanoOptic Precision Delivery Grid optic system, this Cree traditional post-top upgrade kit allows owners to seamlessly transform their existing inefficient post-top luminaires with poor optical control into energy-efficient, low-maintenance LED luminaires.

The result is improved optical control and target efficacy that combines a classic day-form style with a beautiful nightscape appearance. The easy-to-install upgrade kit uses most of the existing fixture, resulting in little waste while maintaining a consistent look – a seamless transition from yesterday to today.

Optical system:	NanoOptic® Precision Delivery Grid™
Colour temperature:	3000K or 4000K or 5700K
CRI:	Min 70 CRI
Insulation class:	Class I and Class II
IP rating:	IP65
Colours:	White
Limited warranty:	5 years

Cree RKT Series

Retrofit kit for historical lantern



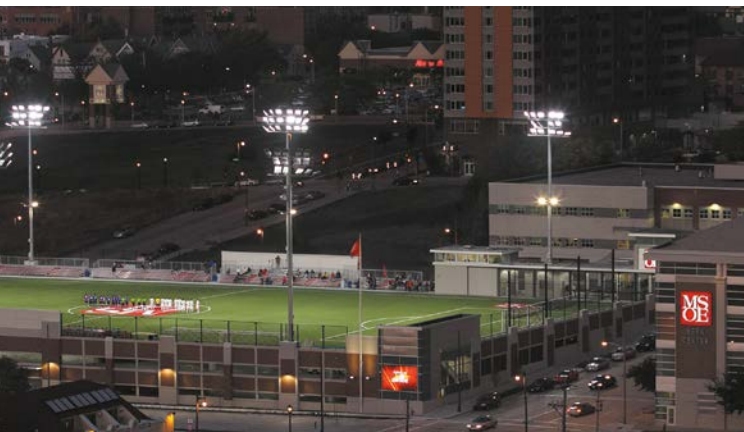
Ordering Information

Example: RKT**C2LG****A30K**+**24WH****WM**

RKT	C	2LG	A	30K	+	24	WH	WM
Product	Version	Optic	Input Power Designator	CCT	Insulation Class	Voltage	Color	Options
RKT	C	2LG Type II Long	0 38W VM 38/27W*	30K 3000K	+ Class 1	24 220-240V	WH White	WM Virtual Midnight - Field programmable (includes 1-10V dimming)
		275 (Type II Short 0.75)	1 43W VM 43/30W*	40K 4000K	^ Class 2			
		210 Type II Short 1,0	2 45W VM 45/32W*	57K 5700K				
		2SH Type II Short	3 27W VM 27/19W*					
		3SH Type III Short	4 29W VM 29/20W*					
		3ME Type III Medium	5 34W VM 34/24W*					
		4ME Type IV Medium	6 38W VM 38/19W*					
		5ME Type V Medium	7 43W VM 43/22W*					
		5SH Type V Short	8 45W VM 45/23W*					
			9 19W Fixed					
			A 27W Fixed					
			B 29W Fixed					
			C 35W Fixed					
			D 38W Fixed					
			E 43W Fixed					
			F 45W Fixed					

Field adjustable output included by default

* Time setting 24:00 - 06:00



Cree Edge High Output Series

The Cree Edge High Output luminaire is designed to deliver high lumen packages with precise optical control, especially for projects that require high output and high mounting height solutions. The upgrade-friendly unit features a slim, low-profile design that minimizes wind load requirements and a rugged die-cast aluminium adjustable mounting shaft for vertical tenon mounting or direct/surface mounting.

By incorporating Cree TrueWhite Technology, the Cree Edge High Output luminaire brings industry-leading 90 CRI color quality and performance to outdoor lighting applications, delivering superior color rendering with unprecedented high-output 5000K illumination.

The Cree Edge High Output Series is capable of saving in excess of 70% in energy consumption, while maintenance costs are greatly reduced by eliminating the re-lamping cycle.

The luminaire has versatile mounting solutions to accommodate various pole and high-mast ring configurations. It is easy to install and is backed by Cree's 10-year limited warranty.

Two different sizes are offered: 120 and 240 LEDs.

Cree Edge High Output Series is designed for high-mast applications and illumination of large areas as ports, airports and sport venues.

Adjustable Arm Mount

The adjustable mounting arm is rugged die-cast aluminium and mounts to a 60mm–76mm OD minimum 95mm tall vertical tenon. With an extruded aluminium adjustable mounting shaft, the luminaire is adjustable from horizontal 90° towards the pole and 120° away from the pole.

Direct/Surface Mount

This version mounts directly to 127mm or larger poles using mounting hardware and anchor plate provided. Luminaires can also be surface wired and mounted directly to vertical or horizontal surfaces.

Surface/Direct Mount (High-Bay)

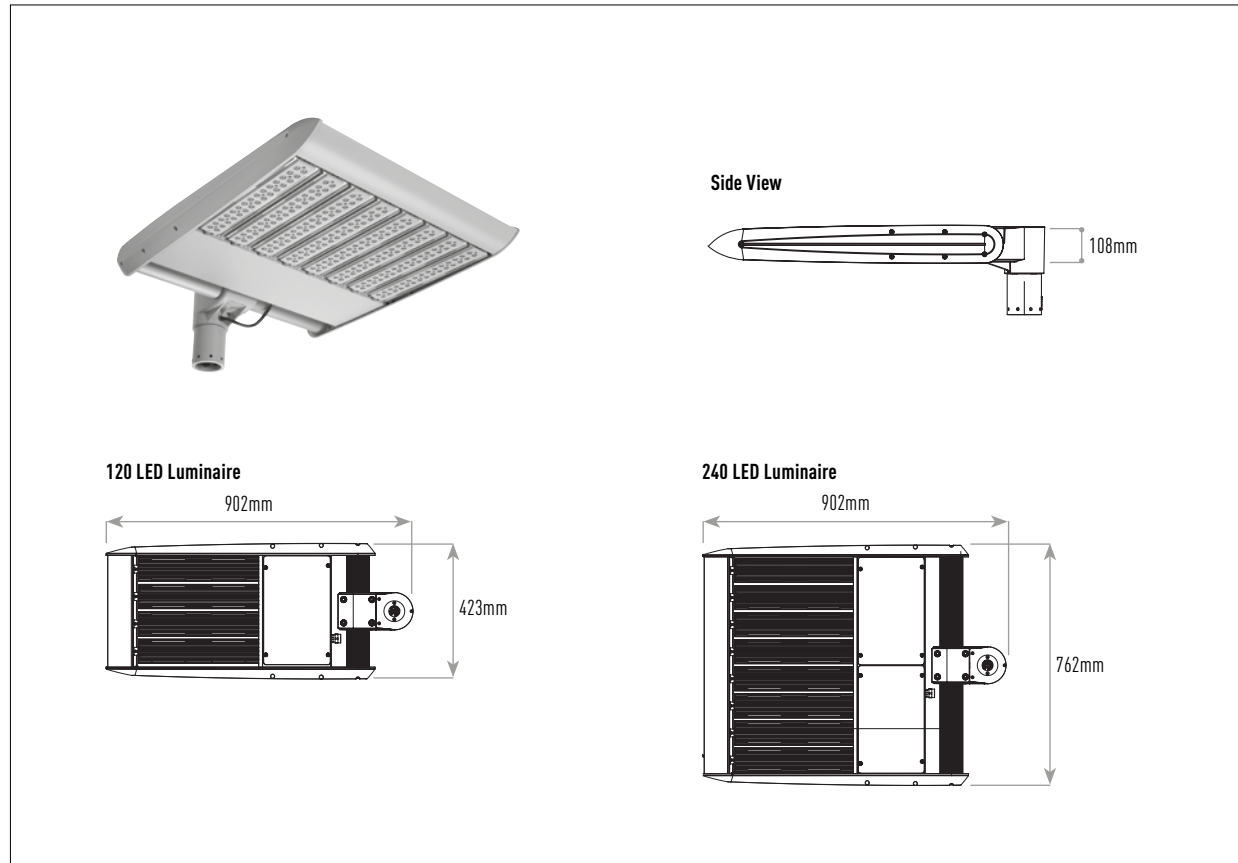
In this version, Cree Edge HO is ideal to illuminate the most challenging high-bay applications. The luminaire mounts directly to solid surfaces with heavy gauge stainless steel mounting brackets.



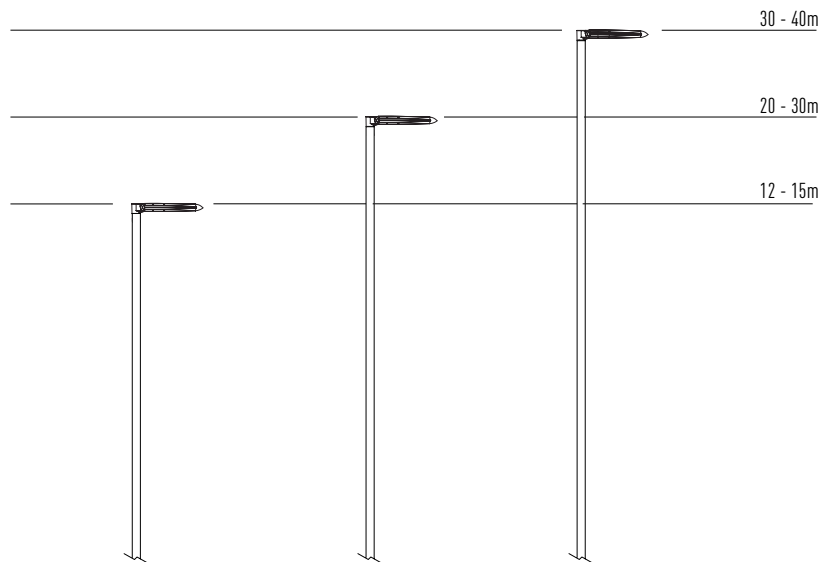
Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K), 5000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI (4000K & 5700K); 90 CRI (5000K)
Insulation class:	Class I
IP rating:	IP65
Colours:	Silver, Silver Bronze, Bronze, Black and White
Limited warranty:	10 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree Edge HO

Mounting AA - Adjustable arm mount



Installation mounting height



Accessory information

XA-BRDSPKXAK12	Bird Spikes for 120 LED luminaires
XA-BRDSPKXAK24	Bird Spikes for 240 LED luminaires

Ordering Information

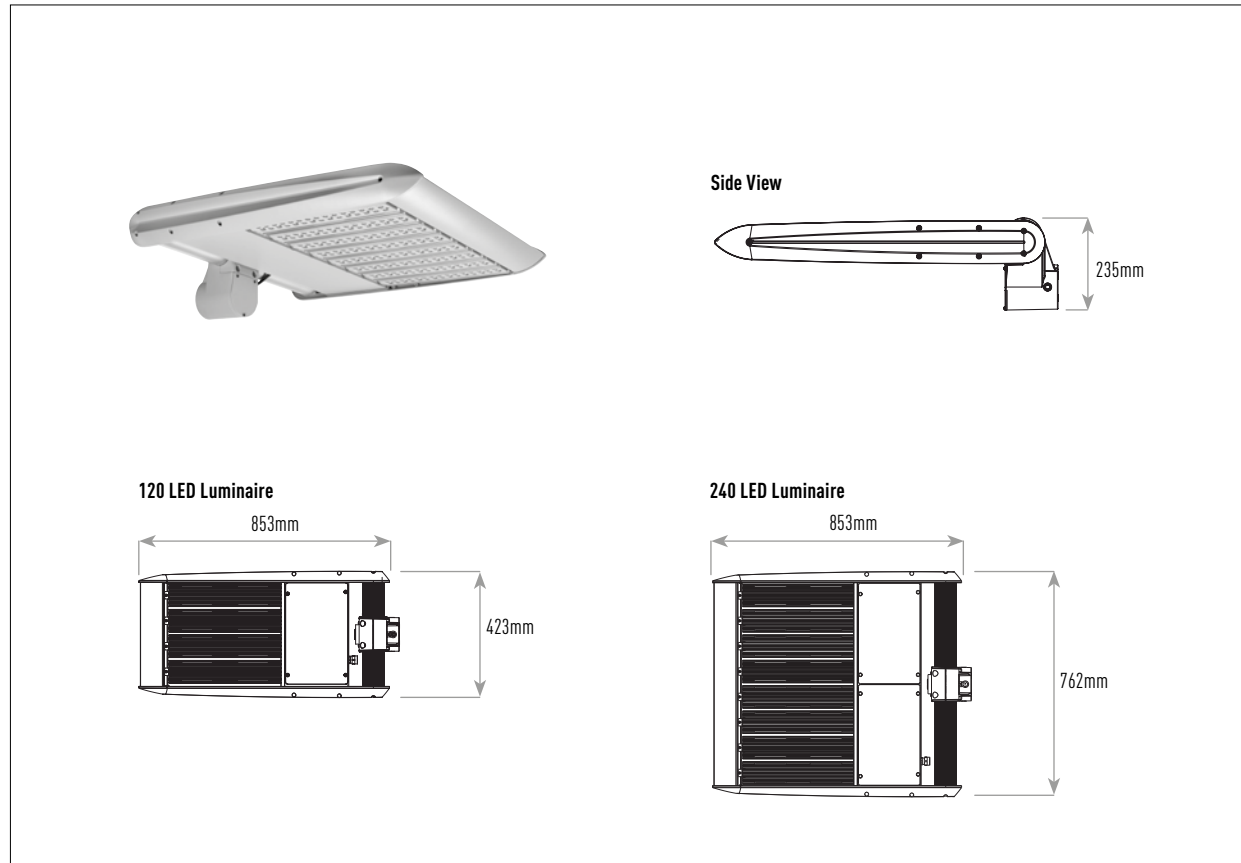
Example: XAK3X125+4DYS9

Product	Mounting	Optic	LED Count (x10)	Series	Insulation Class	Voltage	Drive Current	Options	Color	Color Temperature
XAK EdgeHO	3 Adj Slip fitter Downlight	X (SN) Z (70°) D (40°) C (25°) B (15°) A (FS) (relative to mounting)	12 24	E	+ Class 1	4 230V	D 700mA X 1A	Y 1-10V Dimming - Control by others	S Silver (Standard) T Black Z Bronze B Silver Bronze W White	9 No code 5700K - Minimum 70 CRI 9 5000K - Minimum 90 CRI - Utilizes Cree TrueWhite® Technology 7 4000K - Minimum 70 CRI

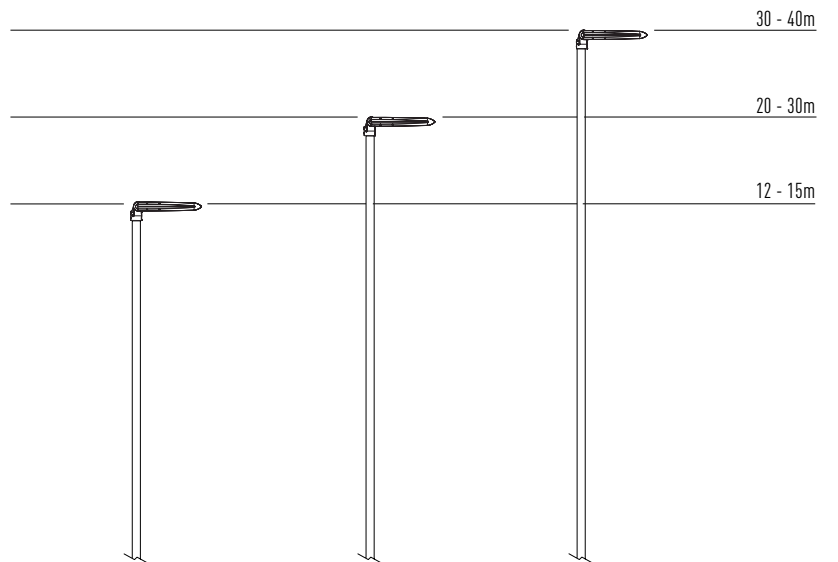


Cree Edge HO

Mounting DA - Direct / surface mount



Installation mounting height



Accessory information

XA-BRDSPKXAK12	Bird Spikes for 120 LED luminaires
XA-BRDSPKXAK24	Bird Spikes for 240 LED luminaires

Ordering Information

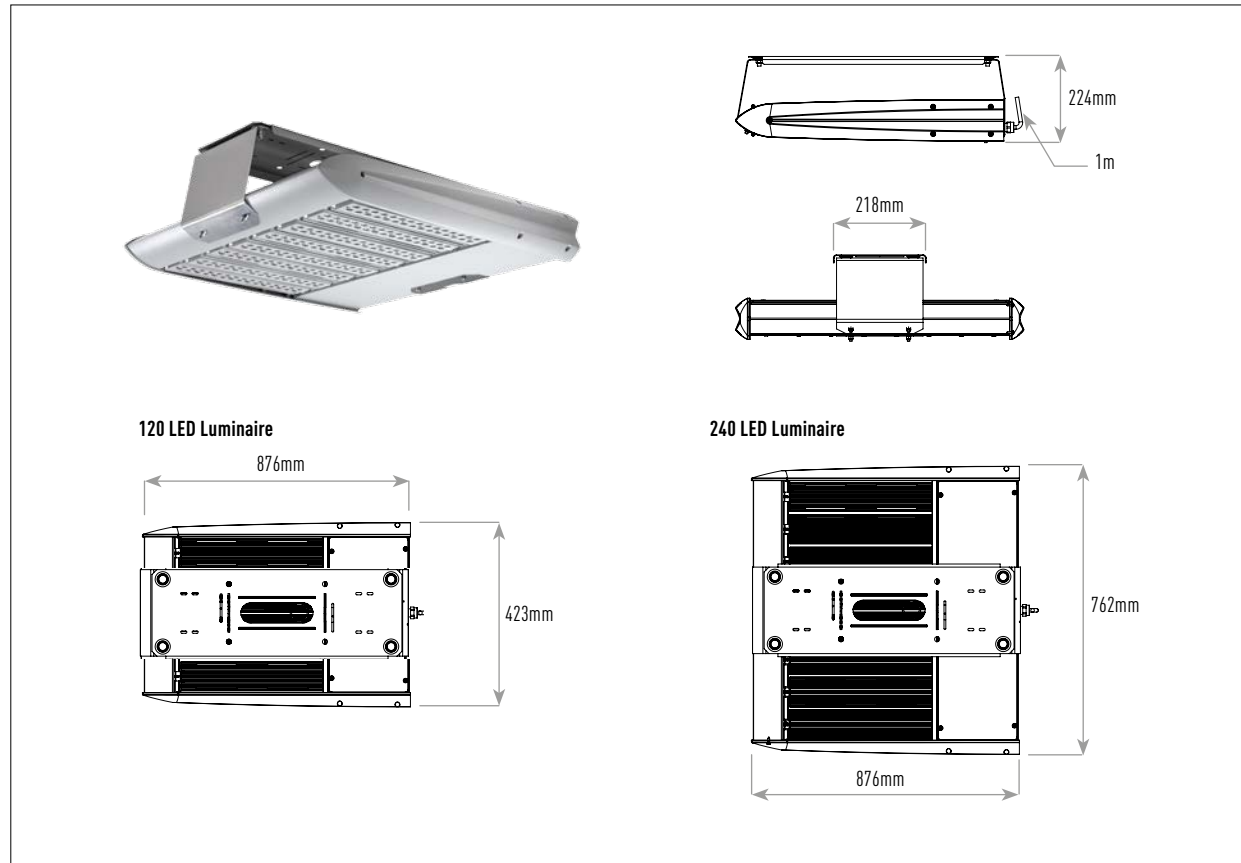
Example: XAKDX125+4DYS9

XAK	D	X	12	E	+	4	D	Y	S	9	
Product	Mounting	Optic	LED Count (x10)	Series	Insulation Class	Voltage	Drive Current	Options	Color	Color Temperature	
XAK EdgeHO	D Direct/Surface mount Downlight U Direct/Surface mount Uplight 5 Direct/Surface mount Downlight - LEFT (relative to mounting) A Direct/Surface mount Downlight - RIGHT (relative to mounting) 6 Direct/Surface mount Uplight - LEFT (relative to mounting) B Direct/Surface mount Uplight - RIGHT (relative to mounting)	X (SN) Z (70°) D (40°) C (25°) B (15°) A (FS) Q (AF) R (QVS) 5 (QV) J (ACB) 4 (AC) H (PRB) 3 (PR) K (TSB) F (TS) G (TMB) 2 (TM) T (1S)	12 24	E	+ Class 1	4 230V	D 700mA X 1A	Y 1-10V Dimming - Control by others	S Silver (Standard) T Black Z Bronze B Silver Bronze W White	9 9 7	5700K - Minimum 70 CRI 5000K - Minimum 90 CRI - Utilizes Cree TrueWhite® Technology 4000K - Minimum 70 CRI

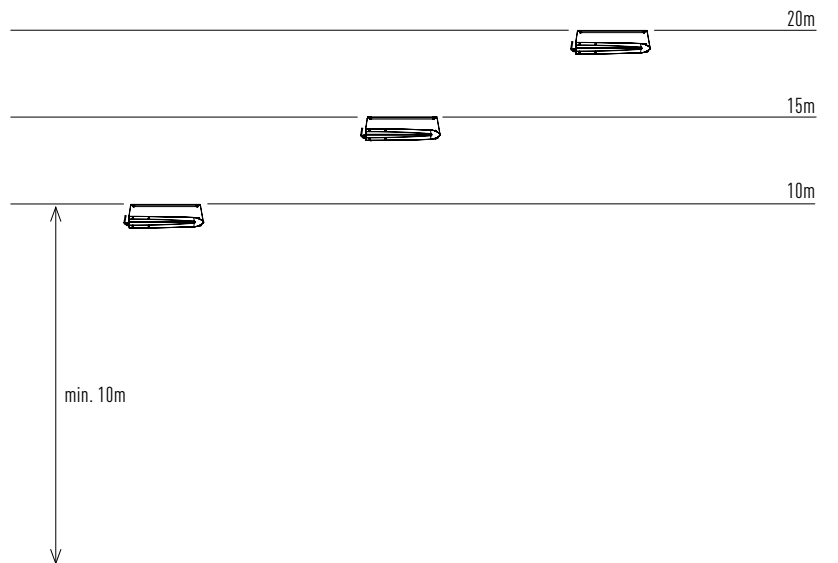


Cree Edge HO

Mounting High Bay - High-Bay Luminaire



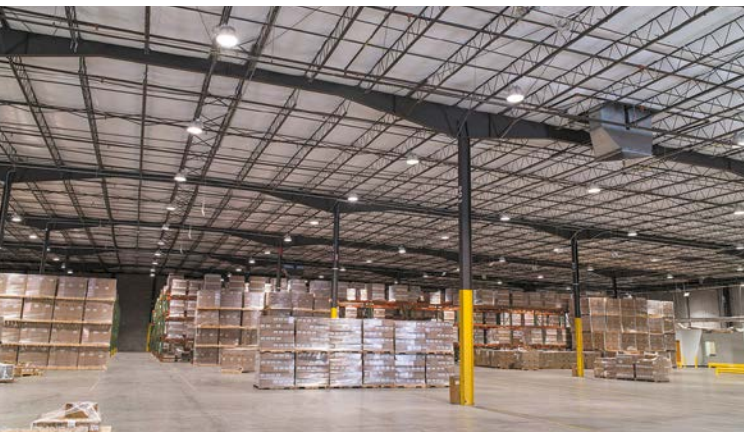
Installation mounting height



Ordering Information

Example: XAKTT125+4DYS9

Product	Mounting	Optic	LED Count (x10)	Series	Insulation Class	Voltage	Drive Current	Options	Color	Color Temperature
XAK EdgeHO	T Surface/Direct mount	X (SN) Z (70°) D (40°) C (25°) B (15°) A (FS) Q (AF) R (QVS) 5 (QV) J (ACB) 4 (AC) H (PRB) 3 (PR) K (TSB) F (TS) G (TMB) 2 (TM) T (1S)	12 24	E	+ Class 1	4 230V	D 700mA X 1A	Y 1-10V Dimming - Control by others	S Silver (Standard) T Black Z Bronze B Silver Bronze W White	9 5700K - Minimum 70 CRI 9 5000K - Minimum 90 CRI - Utilizes Cree TrueWhite® Technology 7 4000K - Minimum 70 CRI



Cree CXB Series

The CXB Series LED Low-Bay/High-Bay luminaire delivers 18,000 median and 24,000 median lumens with illumination performance to allow one-for-one replacement of 250W and 400W HID luminaires and multi-lamp fluorescent low-bay and high-bay fixtures.

With exceptional rated lifetimes, zero restrike time and a compact lightweight construction, the CXB Series is a direct replacement for incumbent HID and fluorescent light sources that provides additional benefits of energy savings and significantly reduced relamp maintenance costs.

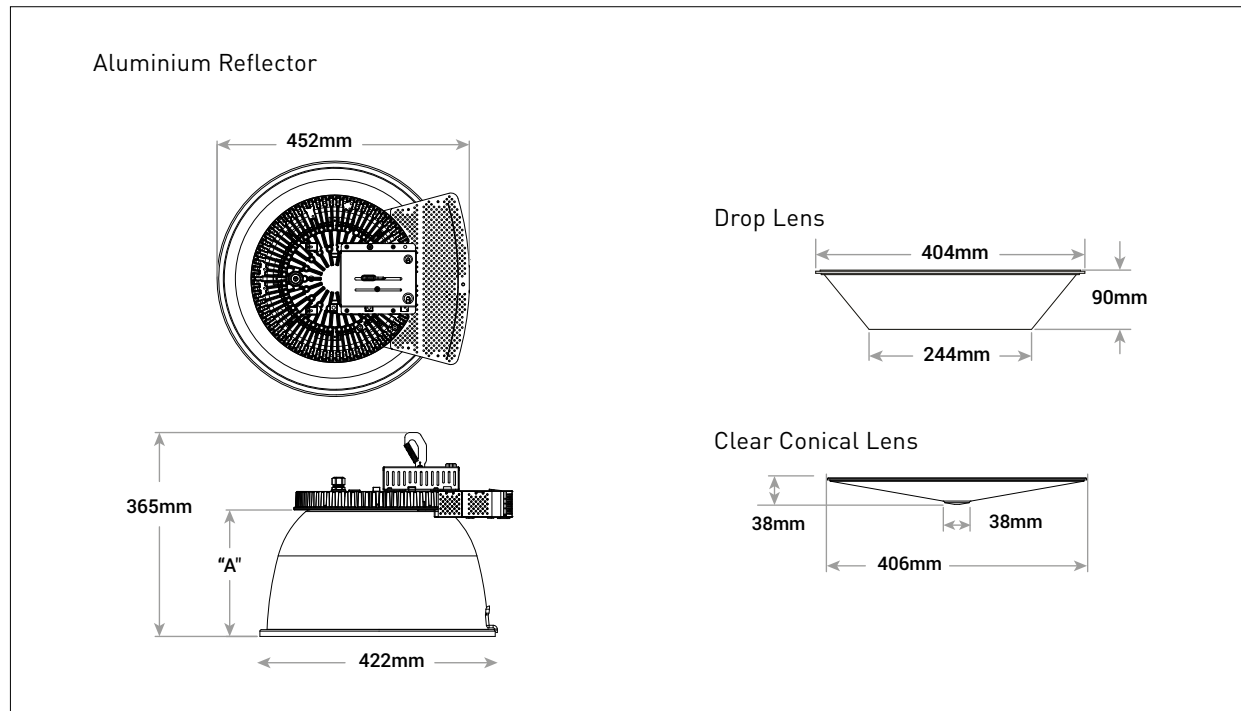
Weighing 50% less than traditional metal halide high- and low-bay luminaires and available in versatile mounting options, the CXB Series offers a quick and easy installation for seamless upgrade and new construction opportunities.

The CXB Series is offered with reflector choices of aluminum, clear and white acrylic with optional bottom lenses — making it ideal for grocery, sport, industrial, retail, manufacturing and warehouse applications.

Optical system:	Clear or White Acrylic, Aluminium reflectors
Colour temperature:	4000K or 5000K
CRI:	Minimum 80 CRI
Insulation class:	Class I
IP rating:	IP20
Colours:	White
Limited warranty:	10 years

Cree CXB Series

LED Low-Bay/High-Bay Luminaire



Reflectors

CXBA16N	406mm Aluminum
CXBP16	406mm Clear Acrylic
CXBW16	406mm White Acrylic



Dimensions

Reflector	"A" Height
CXBA16N (Aluminum)	229mm
CXBP16 (Clear Prismatic)	216mm
CXBW16 (White Acrylic)	216mm

Accessory information

Lenses (for acrylic reflectors)

DL16	406mm Acrylic Clear Prismatic Drop Lens
CL16	406mm Acrylic Clear Conical Bottom Lens



Wire guards

WG-A	Wire Guard for Aluminum Reflector
WG-AP	Wire Guard for Acrylic Reflectors



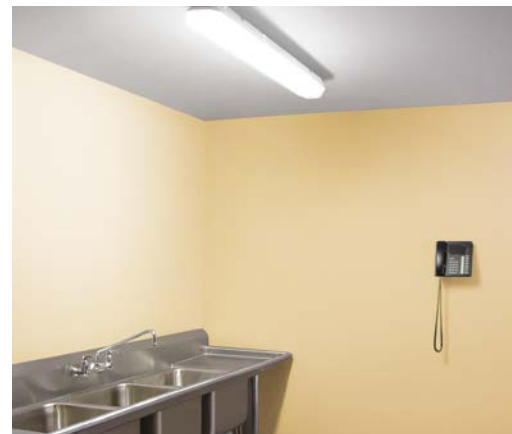
Ordering Information Light Engine

Example: CXBBJPM40K8+UCND

Product	Version	Mounting	Lumen Output	Color Temp	CRI	Insulation Class	Voltage	Controls
CXB	B	JP J-Box or Pendant EY Eye bolt mount HH Hook mount	M 155W, 18,000 Median Lumens - 116 LPW H 230W, 24,000 Median Lumens - 104 LPW	40K 4000K 50K 5000K	8 80 CRI	+	UC 220-240V	ND No dimming ADIM 1-10V Dimming to 5%

Note: Light Engine only - Reflectors and accessories must be ordered separately.





Cree WS Series

The versatile Cree WS Series waterproof LED linear luminaire is suitable for indoor and outdoor applications.

Constructed of one-piece molded polycarbonate housing and with an injection molded, impact resistant, UV stabilised polycarbonate shielding, the Cree WS Series is wet location listed and water-tight sealed for IP65 rating, which provides protection from external elements.

Cree WS Series has been developed to ensure maximum efficiency and reliability in industrial spaces where ambient conditions are hostile and luminaires are difficult to maintain.

This IP65-rated luminaire is water-resistant and provides dust protection for use in environments where existing fluorescent fixtures are installed. Suitable for operating temperatures ranging from -25° to 35°C, the WS Series provides protection from external elements.

Housing and diffuser of the Cree WS Series waterproof LED linear luminaire are constructed in polycarbonate and the closing latches are in PA6 (polyamide). A polyurethane gasketing is poured in place, providing a continuous, seamless seal enable the IP65 protection also for the mounting system built.

Cree WS Series offers two optical choices: an high-efficiency diffuser (opal) with high visual comfort with minimal pixelation that delivers 100 lumens per watt with a UGR less than 25, and an injection molded polycarbonate translucent shielding for IK08 protection.

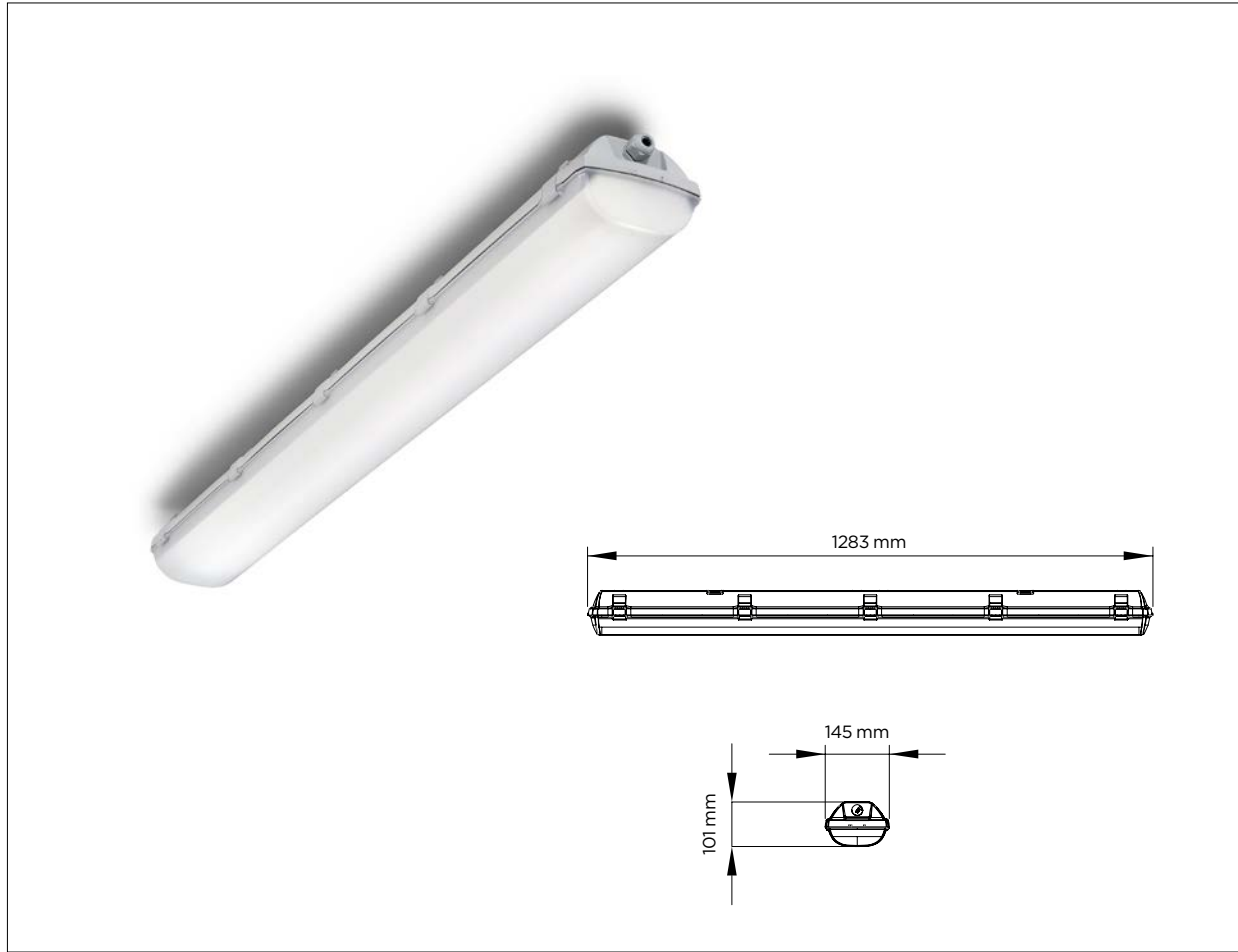
Cree WS Series contains innovative technology suited to the needs of industrial, commercial buildings, car parks and underpasses. It is the optimised solution either in new build or replacement of conventional lighting systems, and for Petroleum & Convenience Lighting.

The mounting options are: surface mount, wall mount, busway mount and suspended mount

Optical system:	Translucent diffuser
Colour temperature:	3000K or 4000K
CRI:	Minimum 80 CRI
Insulation class:	Class I
IP rating:	IP65
Colours:	White
Limited warranty:	5 years

Cree WS

Waterproof LED Linear Luminaire



Ordering Information

Example: WSE12507D

WS	E	12	50	7	D
Product	Version	Length	Lumen Output	Color	Options
WS	E 220-240V	12 1,2m	50 52W 5000 lumens (40K) 40 38W 4000 lumens (40K)	7 4000K 3 3000K	D DALI C Continuous line - max. 25 luminaires per line S Stainless steel clips N Panel connector A Increased eff. lens

Options

	3 = 3000 K	7 = 4000 K	Option D	Option C	Option S	Option N	Option A
50 52W	✓	✓	✓	✓	✓	✓	✓
40 38W	✓	✓	✓	✓	✓	✓	✓

Accessory information

SUSMOUNT	Suspended mounting
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Cree CPY Series

The CPY250 delivers up to 13,000 lumens of beautiful, high-quality light with superior efficiency. With rugged cast aluminium construction and an integral heat sink specifically designed for LED, the CPY250 can withstand the most challenging outdoor environments.

Available with a flat or a prismatic drop lens through which direct imaging of LEDs is eliminated, the luminaire provides two aesthetics to meet visual and illumination performance needs.

The slim, low-profile design enhances curb appeal, while offering seamless installation. With an easy mounting from below the deck, the CPY250 meets all the vertical and horizontal illumination performance needs of canopy/soffit applications.

Different mounting options are offered through a series of accessories designed for recessed or suspended mounting (surface or busway kit).

The optional occupancy sensor can help to reduce light levels and energy costs when the coverage area is vacant.

The fixture is provided with the Colorfast DeltaGuard finish featuring an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion.

Direct Mount

It is the standard mounting system for the CPY250. The fixture mounts directly to the canopy deck in a 51mm to 102mm round hole and is secured in place with self-sealing screws that provide water-tight seal. It is suitable for use in single or double skin canopies with a minimum 102mm wide panels and a minimum 0.7mm canopy thickness.

Surface or Pendant Mount

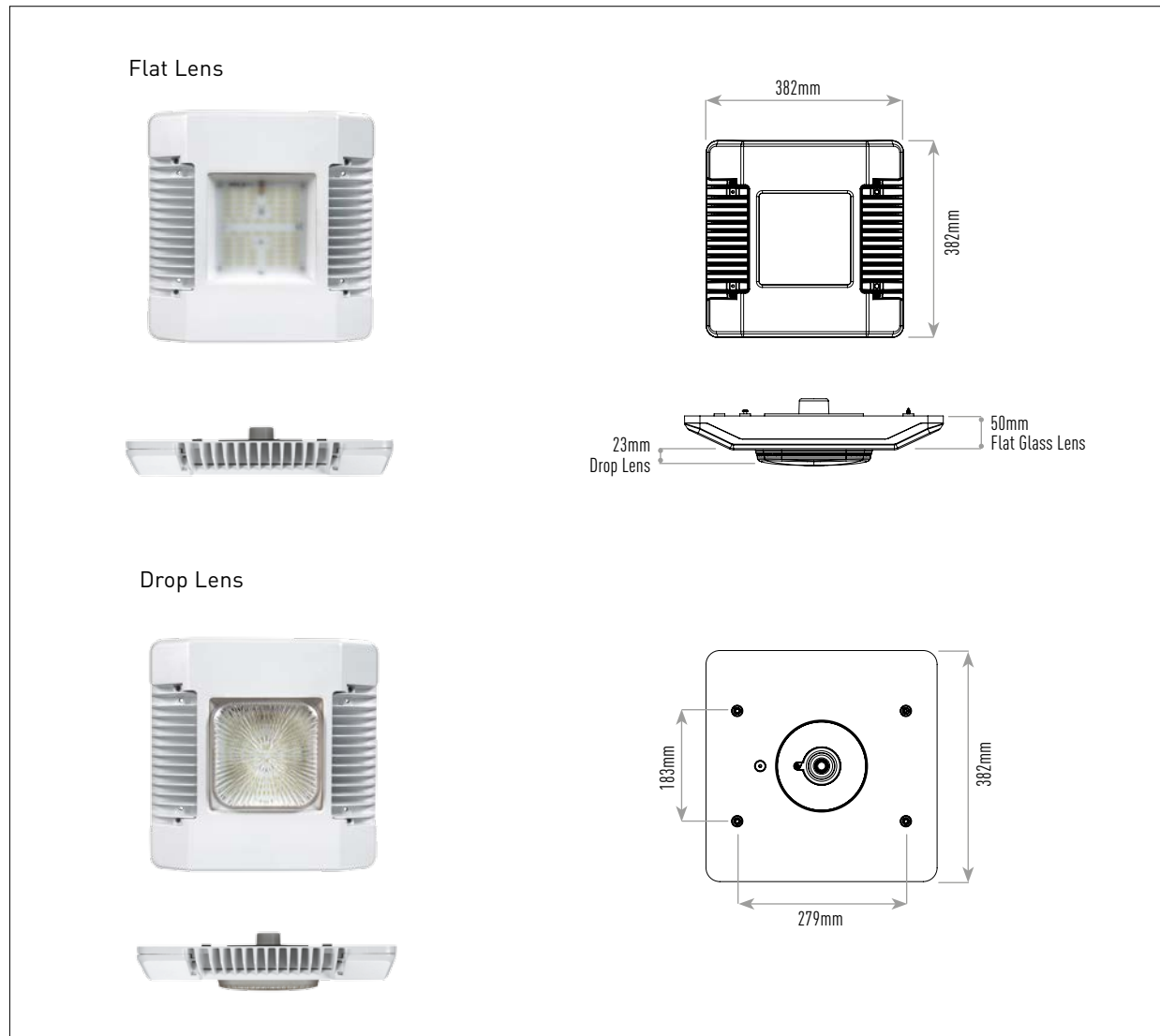
Through a proper accessory kit, the CPY250 can be mounted with a pendant or a hook and cord system to allow an easy installation also for the industrial sites.



Optical system:	Flat or drop glass lens
Colour temperature:	4000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI
Insulation class:	Class I
IP rating:	IP66
Colours:	White, Silver, Silver Bronze, Bronze and Black
Limited warranty:	10 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree CPY250

Mounting 0 - Direct mount



Ordering Information

Example: XCCA0A08+4T7

XCC	A	0	A	08	+	4	T	7
Product	Version	Mounting	Optic	Input Power Designator	Class	Voltage	Color	Options
XCC CPY250	A	0 Direct	A Flat Lens D Drop Lens	08 81W 13 126W	+ Class 1	4 220-240V	W White S Silver T Black Z Bronze B Silver Bronze	7 4000K Color Temperature K# Light Control with Occupancy Sensor - Flux dimming control with occupancy sensor E Light Control with Occupancy Sensor with remote - Flux dimming control with occupancy sensor with remote control Y Dimmable 1-10V - Control by others

Options

	Option 7=40K	Option K#	Option E	Option Y
08 81W	✓	✓	✓	✓
13 126W	✓	✓	✓	✓

Accessory information

XA-BXCCBPW	Beauty Plate	RTF-RCS-A0-CPY	Retrofit kit for recessed mounting
XA-BXCCBP12W	Beauty Plate w/305mm Backer	PM-BCPY-I-RO	Stainless steel kit for surface/busway mounting
XA-BXCCBP16W	Beauty Plate w/406mm Backer	PM-BCPY-V-RO	Galvanized sheet kit for surface/busway mounting
TPS-2	Tamper Resistant Driver Bit		



Cree 304 Series

Cree 304 Series is an extremely versatile fixture which adapts to a wide range of applications: from gas station forecourt canopies, to industrial installations and tunnel lighting.

The driver is located in a separate compartment from the fixture to allow simple and easy access to the wiring compartment for any maintenance or inspection operations required even after the fixture has been installed.

The fixture body, the lightbar cover, the frame and the driver access compartment are all made from die-cast aluminium. The lightbars, with 20 or 30 LEDs each, are housed on an extruded aluminium base designed to provide the best heat dissipation thanks to the exclusive AirFlow Technology. The heat management system yields long service life and outstanding efficiency: each lightbar works at its optimal temperature without mutual interference or heat build-up.

The fixture is offered with a Colorfast DeltaGuard finish featuring an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The 304 Series fixtures utilize patented NanoOptic technology, which involves the application of high-output precision lenses to each diode, tested in accordance with Standard CEI EN 62471 for photobiological safety. This exclusive optical system is offered in different variations of photometric curves to meet the requirements of various applications.

Cree 304 Series canopy luminaires can be configured to achieve 100+ lumen-per-watt performance. Use of an optional integrated multi-level sensor provides timed reduction of light levels.

Cree 304 Series is available with different mounting systems.

Mounting R This version with recessed mounting system is designed to optimize the use of LED technology for lighting petrol station forecourt canopies, generally in metal suspended ceilings with a maximum thickness of 1mm. A retrofit kit is available for 1 to 40mm thickness and for any kind of ceilings.

Mounting 0 This mounting system allows for extremely rapid and simple ceiling installation.

Mounting 4 This mounting system features a stainless steel adjustable bracket allowing adjustment through 180° in increments of 5°. The product's technical and mechanical properties make it particularly well suited for lighting locations subject to critical conditions as vibrations, strong wind for bridges, tunnels, etc.

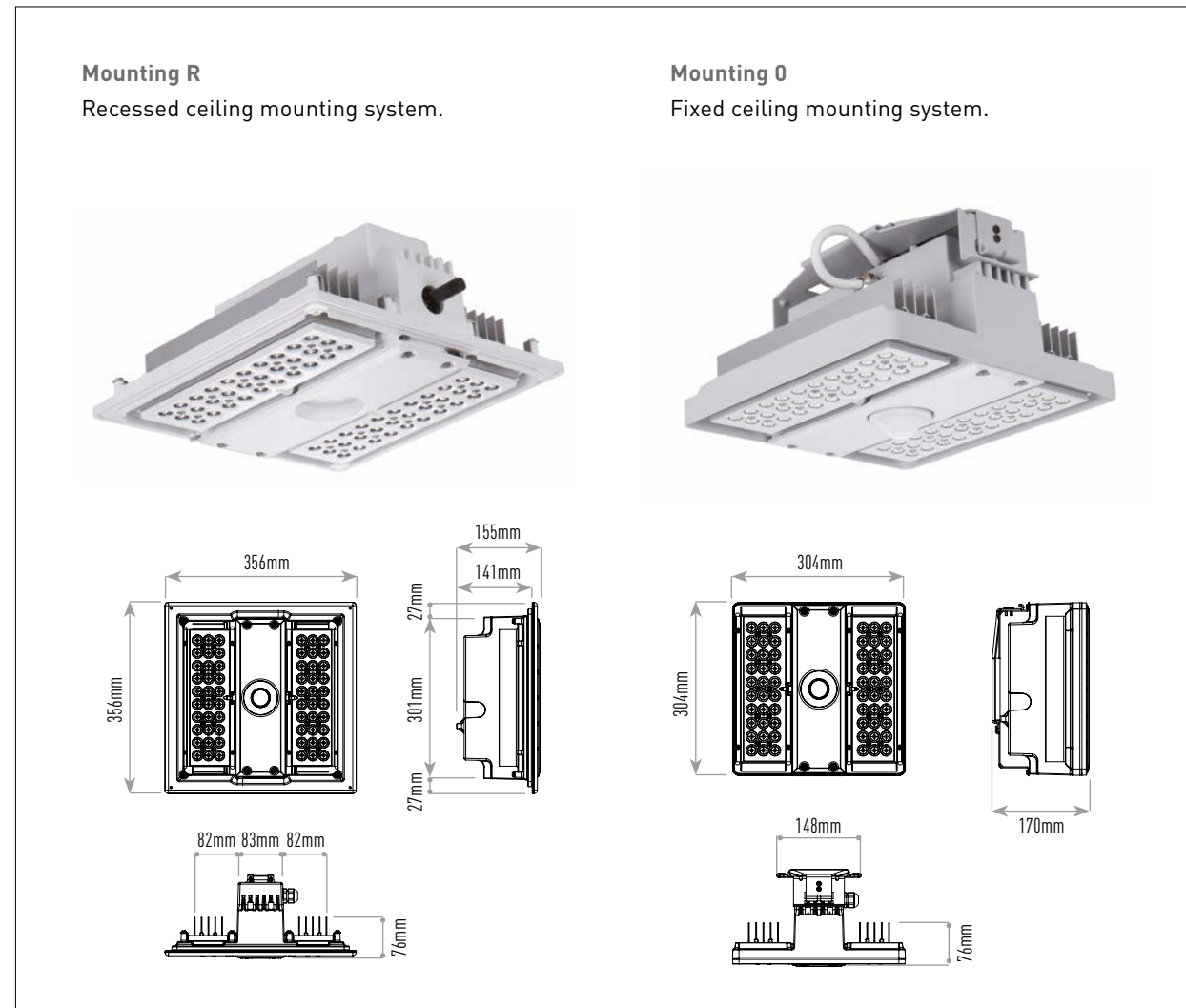
Mounting Y The mounting system features a stainless steel adjustable bracket allowing adjustment through 180° in increments of 5°. The product's technical and mechanical properties make it particularly well suited for lighting industrial plants and car parks, and for spotlight applications.



Optical system:	Patented NanoOptic® technology
Colour temperature:	4000K (+/- 300K) or 5700K (+/- 500K)
CRI:	Minimum 70 CRI
Insulation class:	Class I
IP rating:	IP66
Colours:	White, Silver, Silver Bronze, Bronze and Black
Limited warranty:	10 years on luminaire/10 years on Colorfast DeltaGuard® finish

Cree 304

Recessed and direct mount



Ordering Information

Example: 30XACR04E43BK15

30	X	AC	R	04	E	43	BK	I5
Product	Insulation Class	Optic	Mounting	LED Count (x10)	Series	Options	Color	Drive Current
30304	X Class 1	AC PR TS TM QV QVS FS 15 25 40 1S	R Recessed mount O Fixed ceiling mounting system	04 06	E	No code 5700K 43 4000K - Color temperature per luminaire D Dimmable Driver - Dimmable driver 1-10V with external controller K# Light Control with Occupancy Sensor - Flux dimming control with occupancy sensor E Light Control with Occupancy Sensor with remote - Flux dimming control with occupancy sensor with remote control N# Reprogrammable Virtual Midnight - Reprogrammable 2 levels option with virtual midnight	BK Black BZ Bronze SB Silver Bronze SV Silver WH White	No code 700mA I5 525mA I3 350mA

Options

	Option 43=40K	Option D 1-10V (700mA)	Option D 1-10V (525mA)	Option K (700mA) - ###mA	Option K (525mA) - ###mA	Option E	Option N#
Class I	✓	✓	✓	✓	✓	✓	✓

Accessory information

RTF-RCS-A1-304##	Retrofit kit (only for mounting R)
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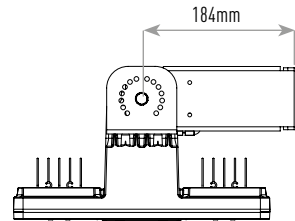
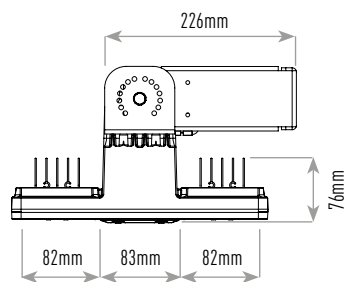
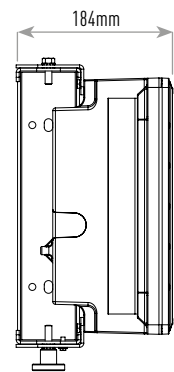
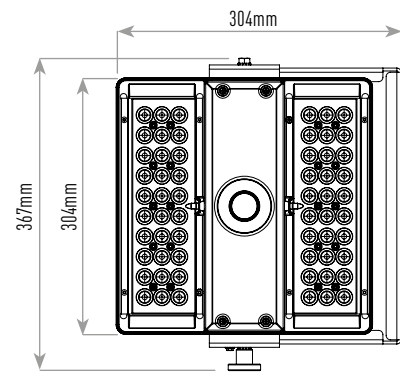


Cree 304

Yoke mount

Mounting 4 / Mounting Y

Adjustable mounting system for ceiling or wall application or application on light beams or pole arms, for industrial plants and car parks.



Ordering Information

Example: 30XAC404E43BK15

30	X	AC	4	04	E	43	BK	I5
Product	Insulation Class	Optic	Mounting	LED Count (x10)	Series	Options	Color	Drive Current
30 304	X Class 1	AC PR TS TM QV QVS FS 15 25 40 1S	4 Adjustable mounting system for ceiling or wall application or application on light beams or pole arms Y Yoke mount	04 06	E	No code 5700K 43 4000K - Color temperature per luminaire D Dimmable Driver - Dimmable driver 1-10V with external controller K# Light Control with Occupancy Sensor - Flux dimming control with occupancy sensor E Light Control with Occupancy Sensor with remote - Flux dimming control with occupancy sensor with remote control N# Reprogrammable Virtual Midnight - Reprogrammable 2 levels option with virtual midnight	BK Black BZ Bronze SB Silver SV Silver WH White	No code 700mA I5 525mA I3 350mA

Options

	Option 43=40K	Option D 1-10V (700mA)	Option D 1-10V (525mA)	Option K (700mA) - ###mA	Option K (525mA) - ###mA	Option E	Option N#
Class I	✓	✓	✓	✓	✓	✓	✓





TECHNICAL SUMMARY

Luminous flux for Cree XP-G2 Series LEDs

In order to optimize lighting systems and maximize energy savings with respect to conventional light sources, it is essential that lighting fixtures are equipped with state-of-the-art LEDs. These light sources provide extremely high levels of luminous efficacy and at the same time, thanks to improved thermal resistance, allow the working life of the light sources to exceed 75,000 hours.

Cree Ledway, 304 and Edge H0 Series products are equipped with XP-G2 Series LEDs manufactured by us which, in the selected configuration, have a nominal flux of 130Lm, with a driving current of 350mA and a color temperature of 4000K.

NanoOptic® Technology Custom-made lighting for all applications

The key to controlling the bright light generated by LEDs is the optical system. In this regard Cree products are at the cutting edge because they use a special direct-contact refractor called NanoOptic Technology, which sits directly on the LED to provide maximum light output and optimal light control. Cree NanoOptic Technology has been developed into an entire range of optics able to provide the correct type of lighting for any type of road, urban setting and general installation.

These optics are carefully designed using 3D computer models that accurately predict how they will behave in different applications. NanoOptic refractors are made of UV-stabilized HID acrylic using a proven manufacturing technique, which does not bring any risk of yellowing or deformation of the lenses.

The performance of the virtual model is checked using verified photometric tests at independent laboratories. Once the optimization process is complete, the model is then duplicated and applied to each individual refractor.

NanoOptic lenses minimize loss and reach levels of efficiency much greater than conventional reflectors (on average 85%).

Cree products comply with IES standards and International Dark-Sky Association guidelines, which encourage darker skies through lighting that creates less sky glow.

Nominal flux (lm) of XP-G2 GenE LEDs - Cree Ledway / Cree 304 Series

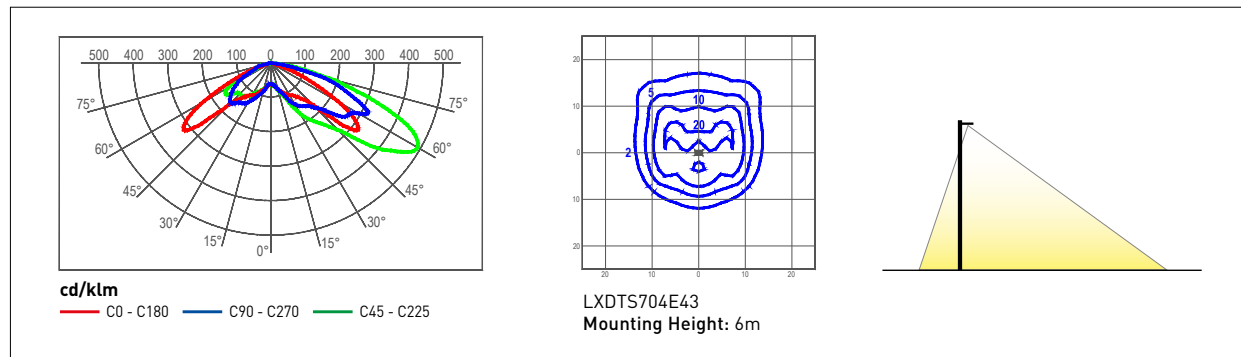
Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	335	325	275	245	237	201	193	187	158	134	130	110
20	6700	6500	5500	4891	4745	4015	3859	3744	3168	2680	2600	2200
30	10050	9750	8250	7337	7118	6023	5789	5616	4752	4020	3900	3300
40	13400	13000	11000	9782	9490	8030	7718	7488	6336	5360	5200	4400
50	na	na	na	12228	11863	10038	9648	9360	7920	6700	6500	5500
60	na	na	na	14673	14235	12045	11578	11232	9504	8040	7800	6600
80	na	na	na	19564	18980	16060	15437	14976	12672	10720	10400	8800
90	na	na	na	22010	21353	18068	17366	16848	14256	12060	11700	9900
100	na	na	na	24455	23725	20075	19296	18720	15840	13400	13000	11000
110	na	na	na	26901	26098	22083	21226	20592	17424	14740	14300	12100
120	na	na	na	29346	28470	24090	23155	22464	19008	16080	15600	13200

Nominal Flux (lm) of XP-G2 GenE LEDs - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	335	257	325	245	188	237
120	40200	30888	39000	29346	22548	28470
240	80400	61776	78000	58692	45096	56940

AC (Type 4 Medium)

Asymmetric optic for street lighting and car parks



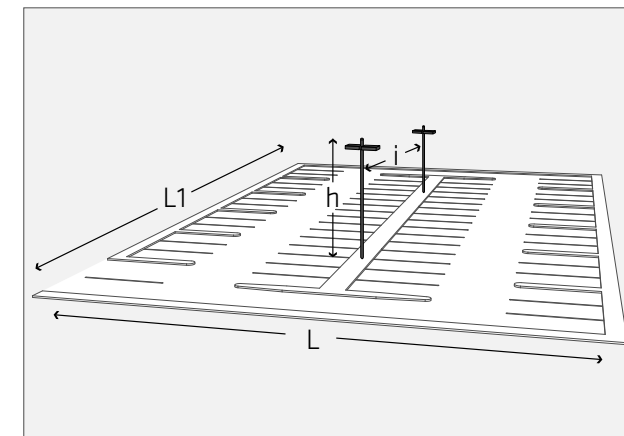
Effective flux (lm) with optic AC - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	260	252	213	190	184	156	150	145	123	104	101	85
20	5195	5039	4264	3792	3679	3113	2992	2903	2456	2078	2016	1706
30	7792	7559	6396	5688	5518	4669	4488	4354	3684	3117	3024	2558
40	10389	10079	8528	7584	7358	6226	5984	5805	4912	4156	4032	3411
50	na	na	na	9480	9197	7782	7480	7257	6140	5195	5039	4264
60	na	na	na	11376	11036	9338	8976	8708	7368	6233	6047	5117
80	na	na	na	15168	14715	12451	11968	11611	9825	8311	8063	6823
90	na	na	na	17064	16555	14008	13464	13062	11053	9350	9071	7675
100	na	na	na	18960	18394	15564	14960	14514	12281	10389	10079	8528
110	na	na	na	20856	20233	17121	16456	15965	13509	11428	11087	9381
120	na	na	na	22752	22073	18677	17952	17416	14737	12467	12095	10234

Effective flux (lm) with optic 4 (AC) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	290	223	281	212	163	205
120	34779	26722	33740	25388	19507	24631
240	69557	53445	67481	50777	39015	49261

Car park



Maintenance coefficient: 0.9

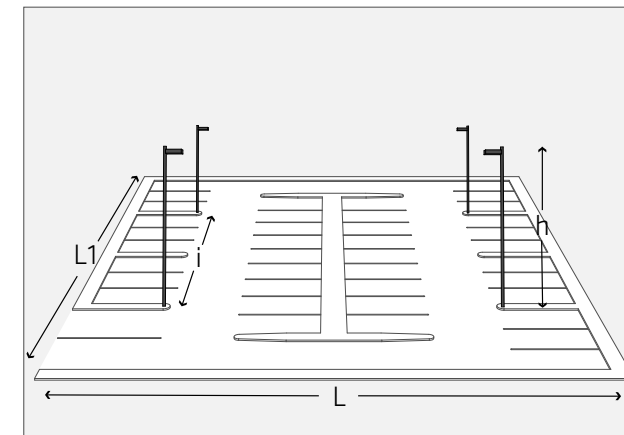
4 fixtures
30 LEDs - 700 mA - 4000K - 70W

h = 8m | i = 30m | L = 30m | L1 = 50m

Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX)	U ₀
	10	0.34

Car park



Maintenance coefficient: 0.9

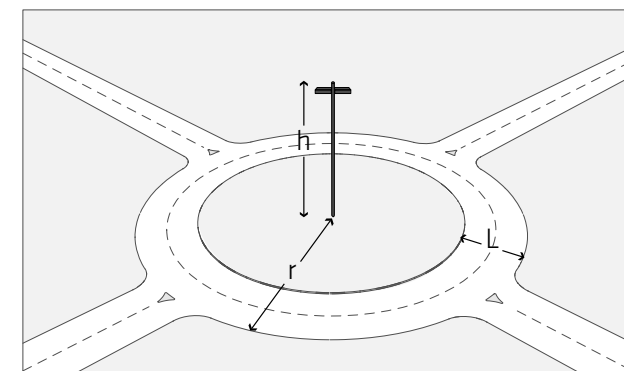
4 fixtures
40 LEDs - 700 mA - 4000K - 91W

h = 8m | i = 25m | L = 40m | L1 = 40m

Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX)	U ₀
	10	0.58

Urban roundabout



Maintenance coefficient: 0.9

2 fixtures
50 LEDs - 700 mA - 4000K - 112W

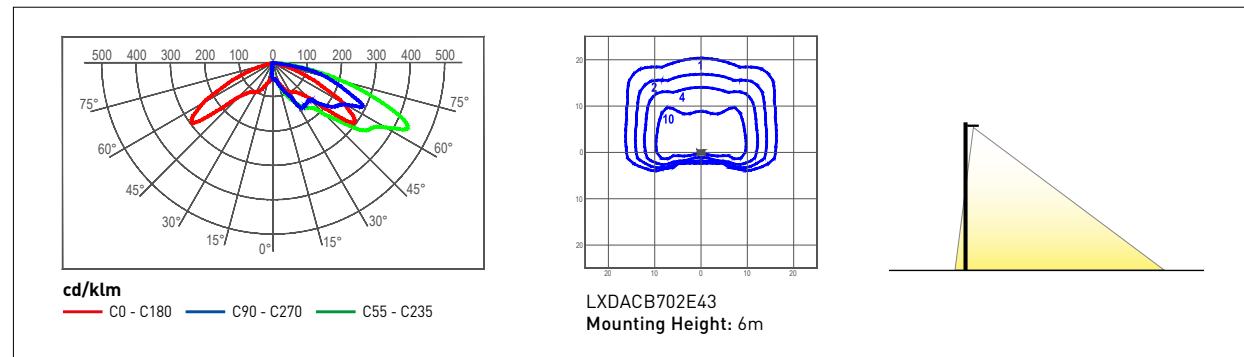
h = 8m | L = 7m | r = 15m

Complying with the following lighting standard:

UNI EN 12464-2 roundabout	Em(LUX)	U ₀
	15	0.47

ACB

Asymmetric optic with backlight shield for street lighting and car parks



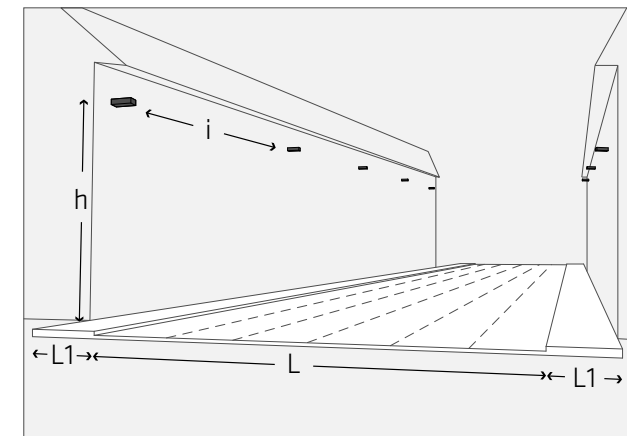
Effective flux (lm) with optic ACB - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	212	206	174	155	150	127	122	119	100	85	82	70
20	4243	4116	3483	3097	3005	2543	2444	2371	2006	1697	1647	1393
30	6365	6175	5225	4646	4508	3814	3666	3557	3009	2546	2470	2090
40	8486	8233	6966	6195	6010	5085	4888	4742	4013	3394	3293	2787
50	na	na	na	7744	7513	6357	6110	5928	5016	4243	4116	3483
60	na	na	na	9292	9015	7628	7332	7113	6019	5092	4940	4180
80	na	na	na	12390	12020	10171	9776	9484	8025	6789	6586	5573
90	na	na	na	13939	13523	11442	10998	10670	9028	7638	7410	6270
100	na	na	na	15487	15025	12713	12220	11855	10031	8486	8233	6966
110	na	na	na	17036	16528	13985	13442	13041	11035	9335	9056	7663
120	na	na	na	18585	18030	15256	14664	14226	12038	10183	9879	8360

Effective flux (lm) with optic J (ACB) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	216	166	209	157	121	153
120	25885	19889	2513	18896	14519	18332
240	51771	39778	50225	37793	29038	36665

Urban road - wall-mounted application



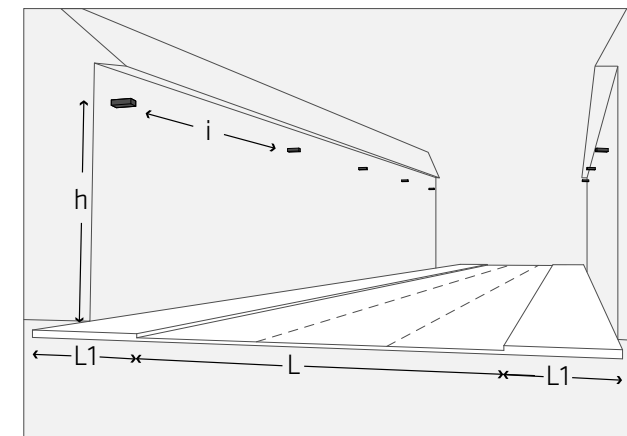
Maintenance coefficient: 0.9

40 LEDs - 700 mA - 4000K - 91W			
h = 6m	i = 24m bilateral	L = 16m	L1 = 2m

Complying with the following lighting classes:

ME3c street	Lm(cd/m²)	Uo	Ul	Tl	SR
	1.02	0.68	0.52	4	0.61
S1 sidewalk	Em(LUX)	Emin(LUX)			
	16.84	10.16			

Urban road - wall-mounted application



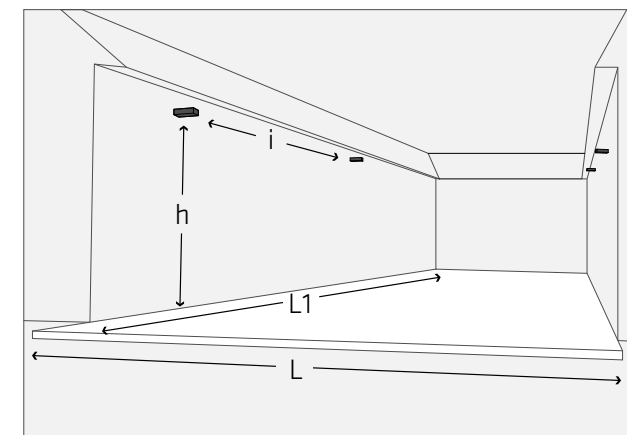
Maintenance coefficient: 0.9

30 LEDs - 700 mA - 4000K - 70W			
h = 6m	i = 24m bilateral	L = 10.5m	L1 = 3.5m

Complying with the following lighting classes:

ME4b street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.80	0.72	0.54	3	0.80
S2 sidewalk	Em(LUX)	Emin(LUX)			
	14.55	8.58			

Square - wall-mounted application



Maintenance coefficient: 0.9

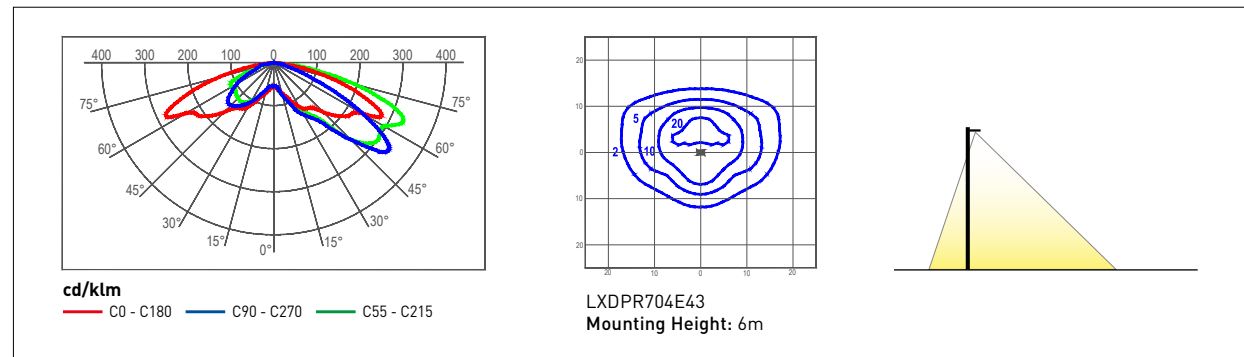
4 fixtures 40 LEDs - 700 mA - 4000K - 91W			
h = 8m	i = 25m	L = 35m	L1 = 35m

Complying with the following lighting classes:

CE4 square	Em(LUX)	Uo
	10	0.53

PR (Type 3 Medium)

Asymmetric optic for street lighting and car parks



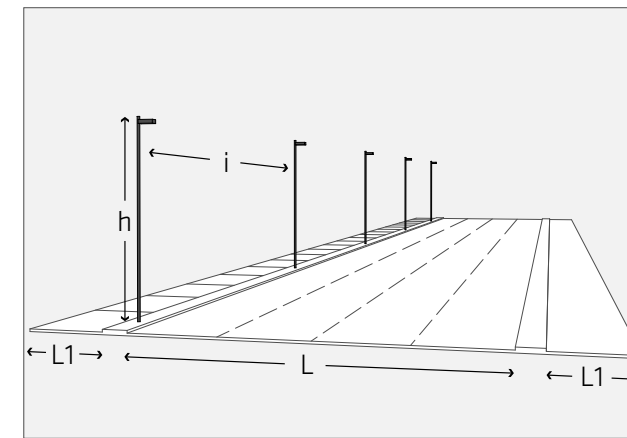
Effective flux (lm) with optic PR - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	245	238	201	179	174	147	141	137	116	98	95	81
20	4909	4763	4030	3584	3477	2942	2828	2743	2321	1964	1905	1612
30	7364	7144	6045	5375	5215	4413	4241	4115	3482	2945	2858	2418
40	9818	9525	8060	7167	6953	5884	5655	5486	4642	3927	3810	3224
50	na	na	na	8959	8692	7354	7069	6858	5803	4909	4763	4030
60	na	na	na	10751	10430	8825	8483	8230	6964	5891	5715	4836
80	na	na	na	14335	13907	11767	11311	10973	9285	7855	7620	6448
90	na	na	na	16126	15645	13238	12724	12345	10445	8836	8573	7254
100	na	na	na	17918	17383	14709	14138	13716	11606	9818	9525	8060
110	na	na	na	19710	19122	16180	15552	15088	12767	10800	10478	8866
120	na	na	na	21502	20860	17651	16966	16459	13927	11787	11430	9672

Effective flux (lm) with optic 3 (PR) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	266	204	258	194	149	188
120	31867	24485	30916	23263	17874	22568
240	63734	48970	61831	46526	35748	45137

Urban street



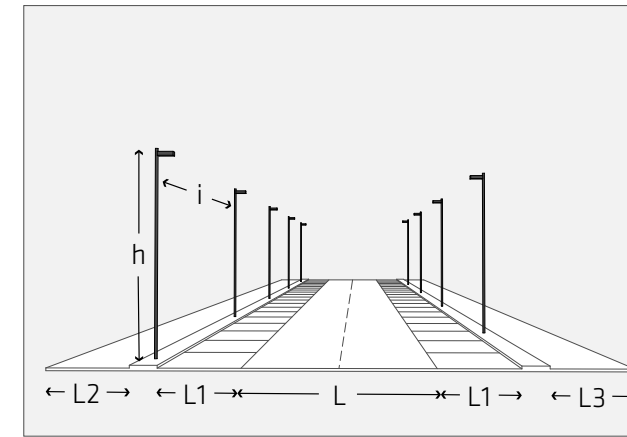
Maintenance coefficient: 0.9

50 LEDs - 700 mA - 4000K - 112W			
$h = 8m$	$i = 30m$	$L = 10.5m$	$L1 = 2.5m$

Complying with the following lighting classes:

ME4b street	Lm(cd/m ²)	U ₀	U ₁	TI	SR
	0.75	0.48	0.51	13	0.65
S3 sidewalk	Em(LUX)	Emin(LUX)			
	7.51	5.09			
CE5 car park	Em(LUX)	U ₀			
	9.74	0.79			

Urban street



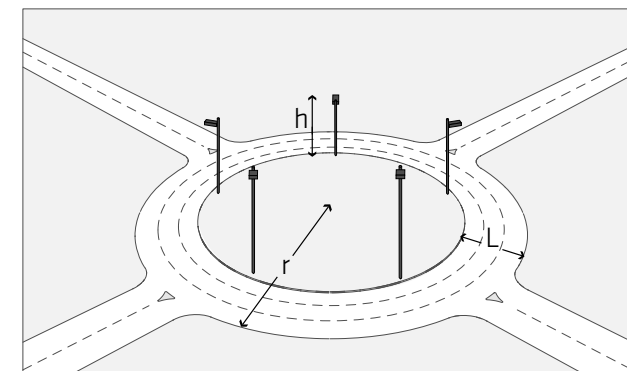
Maintenance coefficient: 0.9

40 LEDs - 700 mA - 4000K - 91W					
$h = 6m$	$i = 45m$ staggered	$L = 7m$	$L1 = 2.5m$	$L2 = 2.5m$	$L3 = 3m$

Complying with the following lighting classes:

ME4b street	Lm(cd/m ²)	U ₀	U ₁	TI	SR
	0.84	0.68	0.50	11	0.70
CE5 car park	Em(LUX)	U ₀			
	11.38	0.47			
S3 sidewalk	Em(LUX)	Emin(LUX)			
	8.30	2.46			
S3 cycle lane	Em(LUX)	Emin(LUX)			
	8.04	2.24			

Urban roundabout



Maintenance coefficient: 0.9

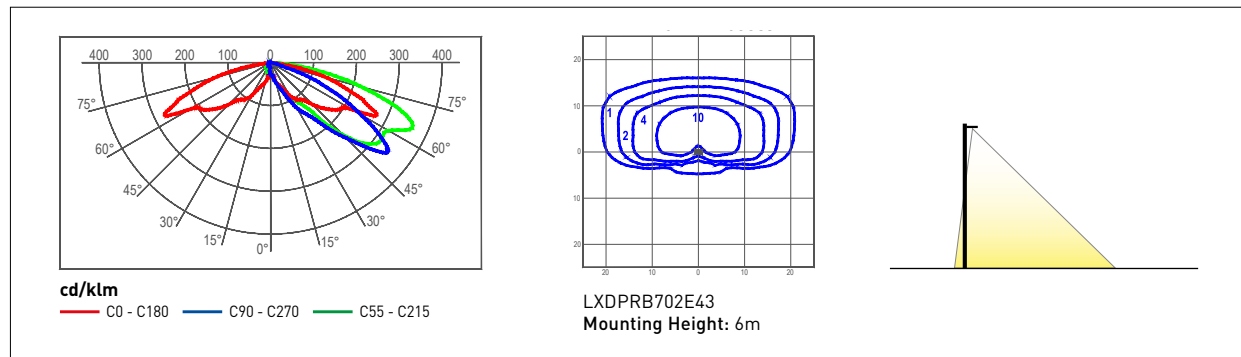
5 fixtures 40 LEDs - 700 mA - 4000K - 91W		
$h = 6m$	$L = 10.5m$	$r = 25m$

Complying with the following lighting classes:

CE3 round-about	Em(LUX)	U ₀
	15	0.45

PRB

Asymmetric optic with backlight shield for street lighting and car parks



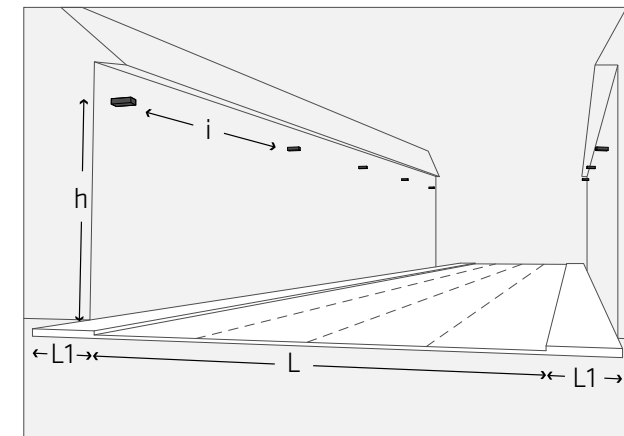
Effective flux (lm) with optic PRB - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	188	183	154	137	133	113	108	105	89	75	73	62
20	3764	3652	3090	2748	2666	2256	2168	2103	1780	1506	1461	1236
30	5646	5478	4635	4122	3999	3383	3252	3155	2670	2258	2191	1854
40	7528	7303	6180	5496	5331	4511	4336	4207	3560	3011	2921	2472
50	na	na	na	6869	6664	5639	5420	5258	4449	3764	3652	3090
60	na	na	na	8243	7997	6767	6504	6310	5339	4517	4382	3708
80	na	na	na	10991	10663	9023	8672	8414	7119	6022	5843	4944
90	na	na	na	12365	11996	10150	9756	9465	8009	6775	6573	5562
100	na	na	na	13739	13329	11278	10840	10517	8899	7528	7303	6180
110	na	na	na	15113	14662	12406	11925	11569	9789	8281	8034	6798
120	na	na	na	16487	15994	13534	13009	12620	10679	9034	8764	7416

Effective flux (lm) with optic H (PRB) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	203	156	197	148	114	144
120	24349	18709	23622	17775	13657	17244
240	48698	37418	47245	35550	27315	34489

Urban road - wall-mounted application



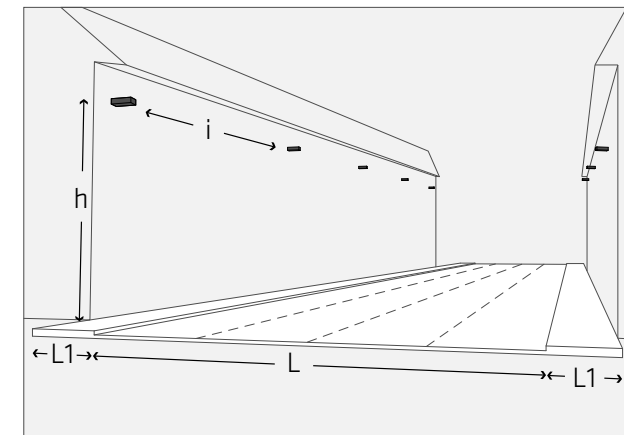
Maintenance coefficient: 0.9

60 LEDs - 700 mA - 4000K - 132W			
h = 8m	i = 40m staggered	L = 14m	L1 = 2.5m

Complying with the following lighting classes:

ME3b street	Lm(cd/m²)	Uo	Ul	Tl	SR
	1.03	0.66	0.60	11	0.60
S2 sidewalk	Em(LUX)	Emin(LUX)			
	11.70	7.18			

Urban road - wall-mounted application



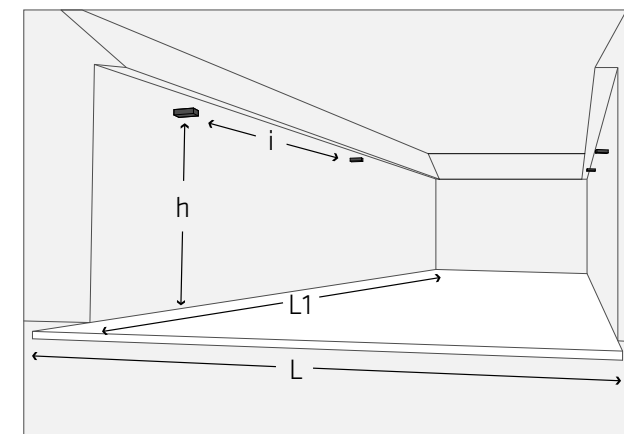
Maintenance coefficient: 0.9

50 LEDs - 700 mA - 4000K - 112W			
h = 8m	i = 45m staggered	L = 14m	L1 = 2.5m

Complying with the following lighting classes:

ME4b street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.76	0.67	0.50	11	0.60
S3 sidewalk	Em(LUX)	Emin(LUX)			
	8.70	4.33			

Square - wall-mounted application



Maintenance coefficient: 0.9

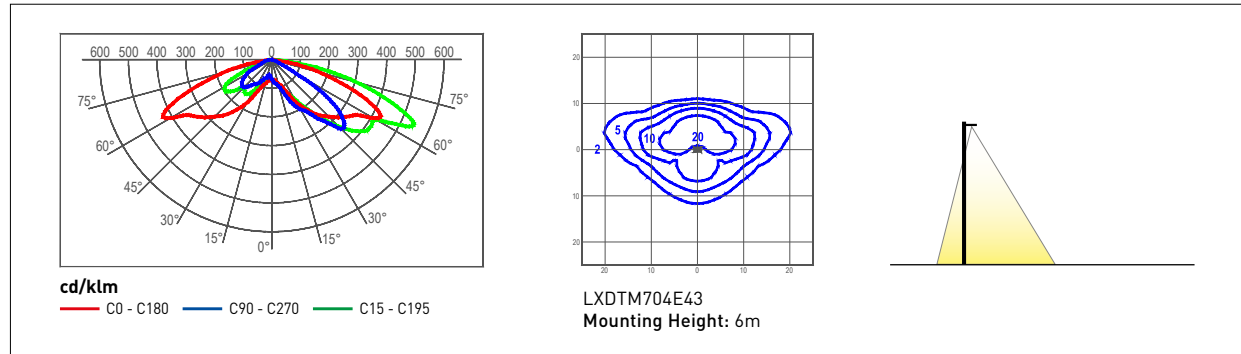
4 fixtures 50 LEDs - 700 mA - 4000K - 112W			
h = 8m	i = 30m	L = 30m	L1 = 50m

Complying with the following lighting classes:

CE4 square	Em(LUX)	Uo
	11	0.51

TM (Type 2 Medium)

Asymmetric optic for street lighting, cycle paths and footpaths



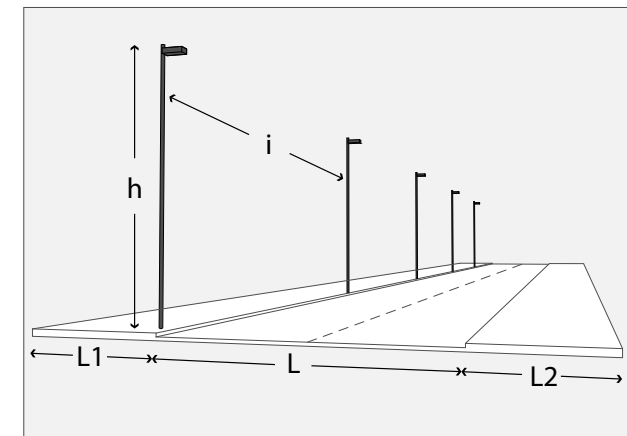
Effective flux (lm) with optic TM - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	252	244	207	184	178	151	145	141	119	101	98	83
20	5039	4889	4137	3679	3569	3020	2903	2816	2383	2016	1955	1655
30	7559	7333	6205	5518	5353	4530	4354	4224	3574	3023	2933	2482
40	10078	9777	8273	7357	7137	6039	5805	5632	4765	4031	3911	3309
50	na	na	na	9196	8922	7549	7256	7040	5957	5039	4889	4137
60	na	na	na	11036	10706	9059	8708	8448	7148	6047	5866	4964
80	na	na	na	14714	14275	12079	11610	11263	9531	8063	7822	6618
90	na	na	na	16553	16059	13589	13061	12671	10722	9070	8800	7446
100	na	na	na	18393	17844	15098	14513	14079	11913	10078	9777	8273
110	na	na	na	20232	19628	16608	15964	15487	13105	11086	10755	9100
120	na	na	na	22071	21412	18118	17415	16895	14296	12094	11733	9928

Effective flux (lm) with optic 2 (TM) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	277	213	269	202	156	196
120	33278	25569	32284	24293	18665	23567
240	66555	51138	64568	48585	37331	47135

Residential road



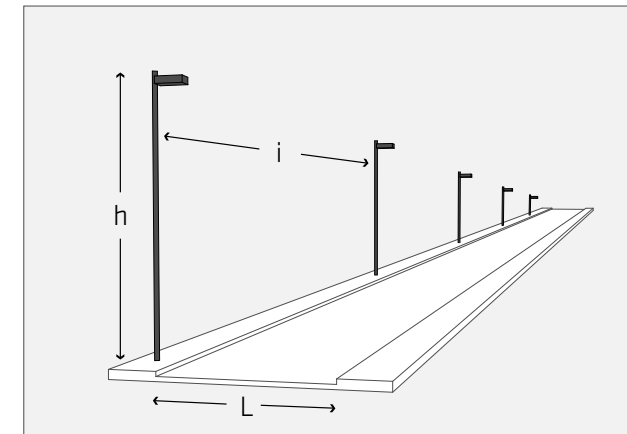
Maintenance coefficient: 0.9

30 LEDs - 700 mA - 4000K - 70W			
h = 8m	i = 34m	L = 7.5m	L1/L2 = 3m

Complying with the following lighting classes:

ME5 street	Lm(cd/m²)	Uo	Ut	Tl	SR
	0.64	0.40	0.40	13	0.62
S4 sidewalk L1	Em(LUX)	Emin(LUX)			
	6.71	4.36			
S4 sidewalk L2	Em(LUX)	Emin(LUX)			
	5.21	1.83			

Cycle lane



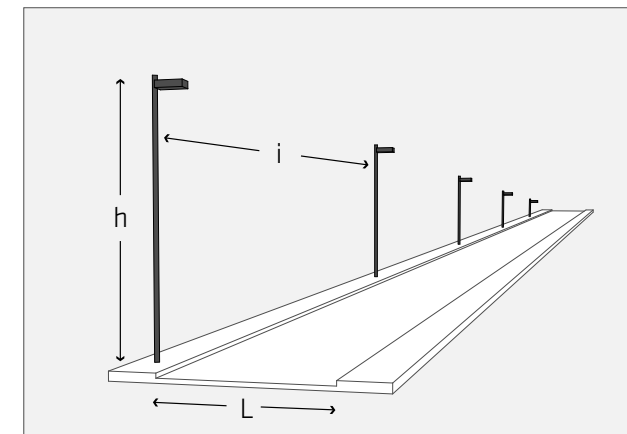
Maintenance coefficient: 0.9

20 LEDs - 525 mA - 4000K - 37W		
h = 5m	L = 3m	i = 27m

Complying with the following lighting classes:

S2 cycle lane	Em(LUX)	Emin(LUX)
	10	3.75

Cycle lane

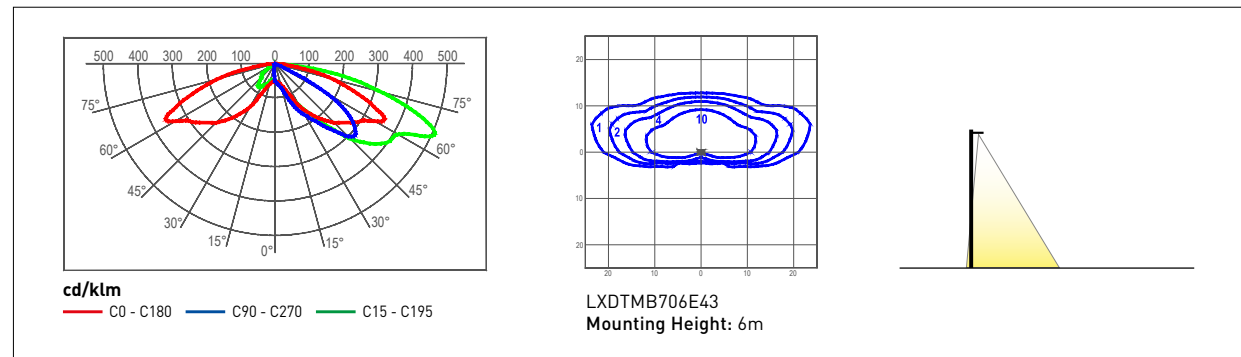


Maintenance coefficient: 0.9

20 LEDs - 350 mA - 4000K - 25W		
h = 4.5m	L = 3m	i = 27m

Complying with the following lighting classes:

S3 cycle lane	Em(LUX)	Emin(LUX)
	7.63	2.11



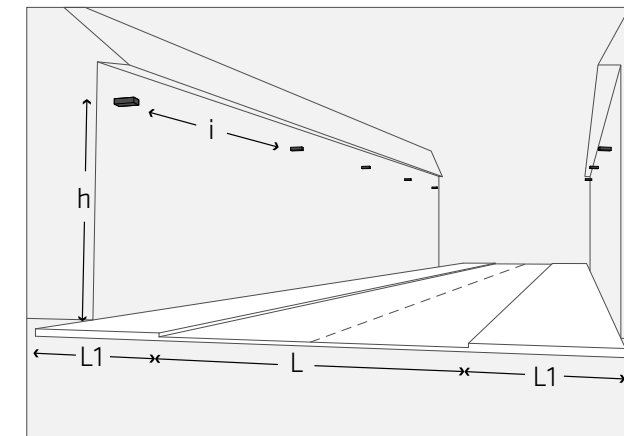
Effective flux (lm) with optic TMB - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	198	192	162	144	140	118	114	110	93	79	77	65
20	3954	3836	3246	2887	2800	2370	2278	2210	1870	1582	1535	1298
30	5932	5754	4869	4330	4201	3554	3417	3315	2805	2373	2302	1948
40	7909	7673	6492	5773	5601	4739	4555	4419	3740	3163	3069	2597
50	na	na	na	7217	7001	5924	5694	5524	4674	3954	3836	3246
60	na	na	na	8660	8401	7109	6833	6629	5609	4745	4604	3895
80	na	na	na	11547	11202	9479	9111	8839	7479	6327	6138	5194
90	na	na	na	12990	12602	10663	10250	9944	8414	7118	6905	5843
100	na	na	na	14433	14002	11848	11388	11049	9349	7909	7673	6492
110	na	na	na	15877	15403	13033	12527	12153	10284	8700	8440	7141
120	na	na	na	17320	16803	14218	13666	13258	11219	9490	9207	7791

Effective flux (lm) with optic G (TMB) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	211	162	205	154	118	150
120	25336	19467	24579	18495	14211	17943
240	50671	38934	49159	36990	28422	35886

Urban road - wall-mounted application



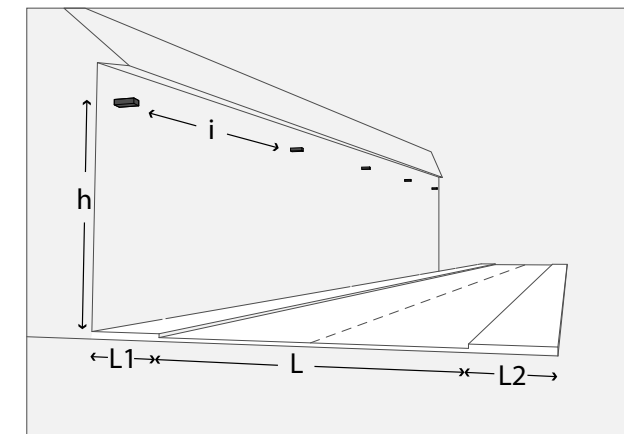
Maintenance coefficient: 0.9

40 LEDs - 700 mA - 4000K - 91W			
h = 8m	i = 60m staggered	L = 7.5m	L1 = 2m

Complying with the following lighting classes:

ME4b street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.83	0.63	0.50	15	0.67
S3 sidewalk	Em(LUX)	Emin(LUX)			
	9.76	5.22			

Urban road - wall-mounted application



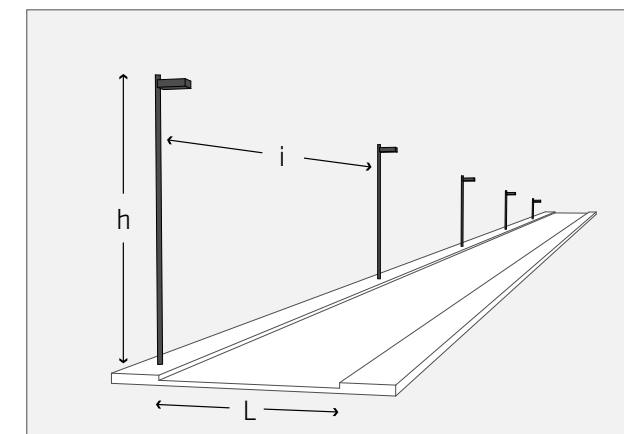
Maintenance coefficient: 0.9

30 LEDs - 700 mA - 4000K - 70W			
h = 8m	i = 40m	L = 5.5m	L1/L2 = 2m

Complying with the following lighting classes:

ME5 street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.53	0.58	0.54	14	0.84
S4 sidewalk L1	Em(LUX)	Emin(LUX)			
	7.17	3.19			
S4 sidewalk L2	Em(LUX)	Emin(LUX)			
	5.93	3.06			

Cycle lane



Maintenance coefficient: 0.9

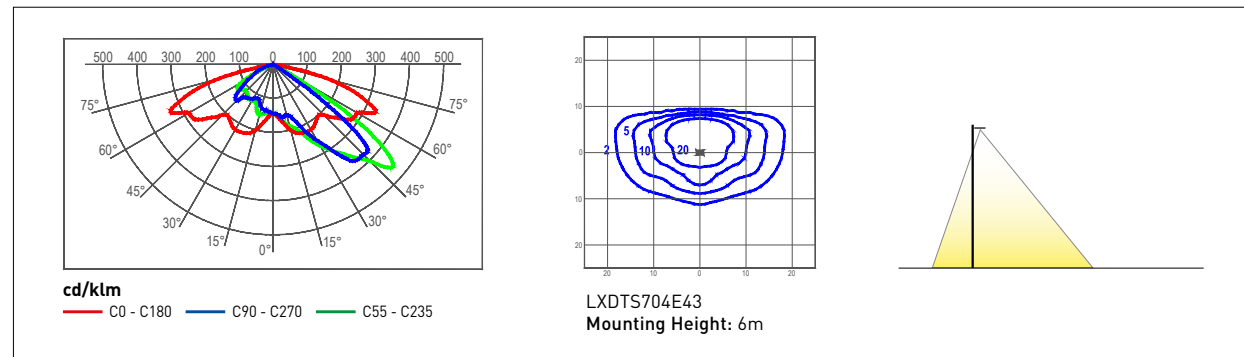
20 LEDs - 525 mA - 4000K - 37W		
h = 5m	L = 3m	i = 34m

Complying with the following lighting classes:

S3 cycle lane	Em(LUX)	Emin(LUX)
	7.54	1.50

TS (Type 2 Short)

Asymmetric optic for street lighting



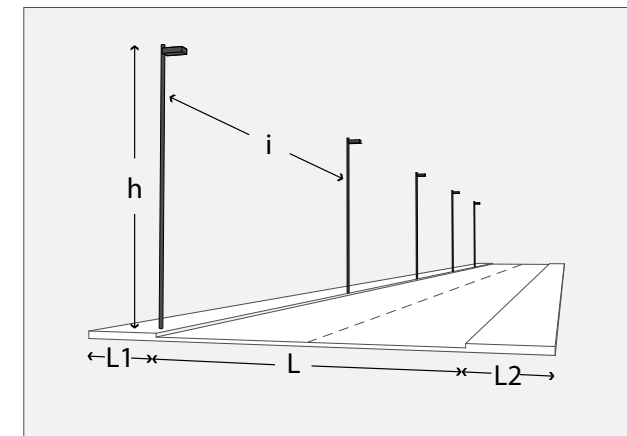
Effective flux (lm) with optic TS - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	284	276	234	208	201	170	164	159	134	114	110	93
20	5689	5519	4670	4153	4029	3409	3277	3179	2690	2276	2208	1868
30	8533	8279	7005	6229	6043	5114	4915	4769	4035	3413	3311	2802
40	11378	11038	9340	8306	8058	6818	6554	6358	5380	4551	4415	3736
50	na	na	na	10382	10072	8523	8192	7948	6725	5689	5519	4670
60	na	na	na	12459	12087	10227	9831	9537	8070	6827	6623	5604
80	na	na	na	16612	16116	13637	13107	12716	10760	9102	8831	7472
90	na	na	na	18688	18130	15341	14746	14306	12105	10240	9934	8406
100	na	na	na	20765	20145	17046	16384	15895	13450	11378	11038	9340
110	na	na	na	22841	22159	18750	18023	17485	14795	12516	12142	10274
120	na	na	na	24918	24174	20455	19661	19074	16140	13654	13246	11208

Effective flux (lm) with optic F (TS) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	296	228	287	216	166	210
120	35539	27307	34478	25943	19934	25169
240	71078	54613	68956	51887	39868	50338

Extra-urban road



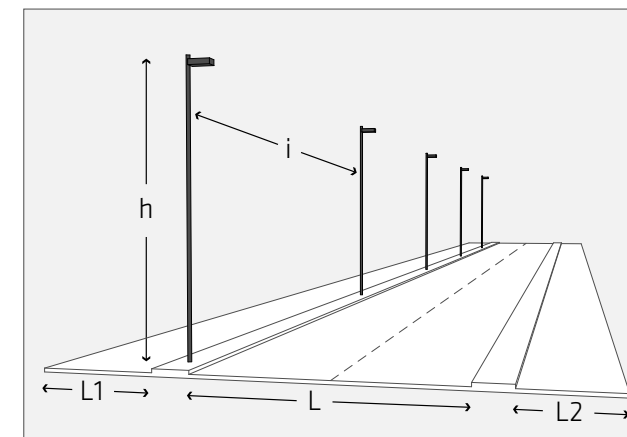
Maintenance coefficient: 0.9

40 LEDs - 700 mA - 4000K - 91W			
h = 8m	i = 30m	L = 8m	L1/L2 = 2m

Complying with the following lighting classes:

ME3a street	Lm(cd/m²)	Uo	Ul	Tl	SR
1	0.52	0.70	9	0.62	
S2 sidewalk L1	Em(LUX)	Emin(LUX)			
12.96	7.78				
S2 sidewalk L2	Em(LUX)	Emin(LUX)			
11.27	5.37				

Urban street



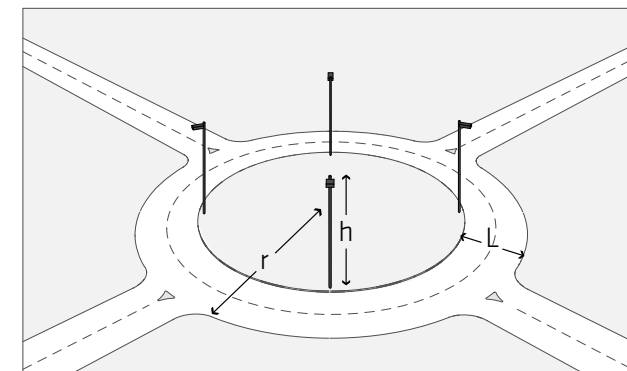
Maintenance coefficient: 0.9

30 LEDs - 700 mA - 4000K - 70W				
h = 8m	i = 30m	L = 7.5m	L1 = 3m	L2 = 3m

Complying with the following lighting classes:

ME4a street	Lm(cd/m²)	Uo	Ul	Tl	SR
0.75	0.55	0.71	9	0.68	
S3 sidewalk L1	Em(LUX)	Emin(LUX)			
9.03	5.56				
S3 sidewalk L2	Em(LUX)	Emin(LUX)			
8.16	3.49				

Urban roundabout

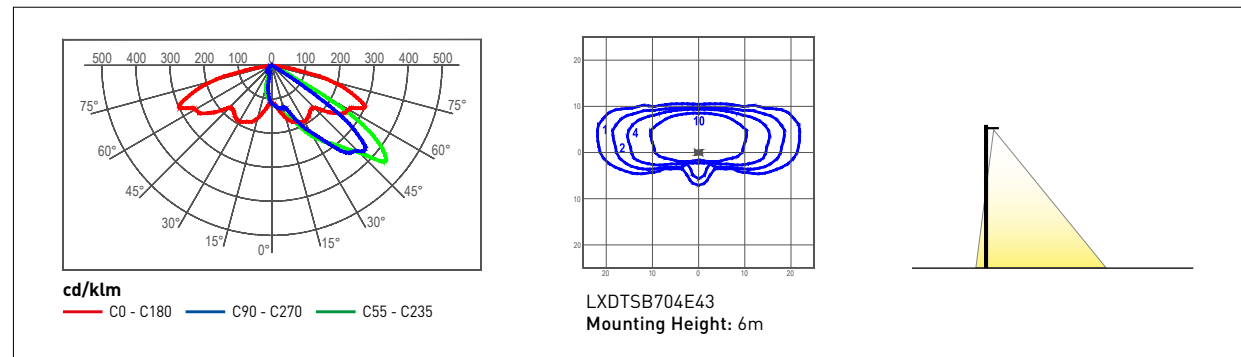


Maintenance coefficient: 0.9

4 fixtures 50 LEDs - 700 mA - 4000K - 112W		
h = 8m	L = 8m	r = 25m

Complying with the following lighting classes:

CE3 round-about	Em(LUX)	Uo
17	0.45	



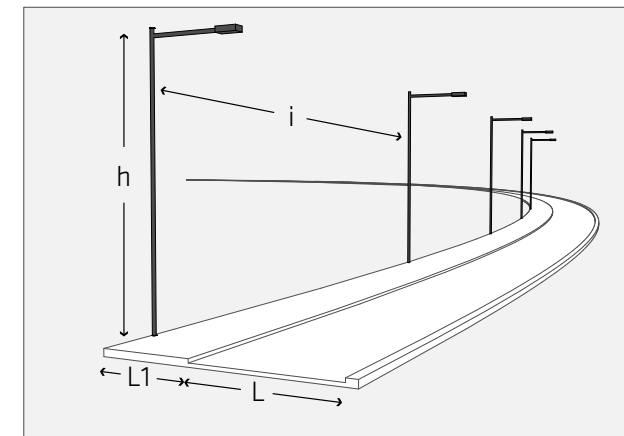
Effective flux (lm) with optic TSB - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	214	208	176	156	152	128	123	120	101	86	83	70
20	4287	4159	3519	3129	3036	2569	2469	2395	2027	1715	1663	1408
30	6430	6238	5278	4694	4554	3853	3704	3593	3040	2572	2495	2111
40	8573	8317	7038	6259	6072	5138	4938	4791	4054	3529	3327	2815
50	na	na	na	7823	7590	6422	6173	5989	5067	4287	4159	3519
60	na	na	na	9388	9108	7706	7407	7186	6081	5144	4990	4223
80	na	na	na	12517	12143	10275	9876	9582	8108	6859	6654	5630
90	na	na	na	14082	13661	11560	11111	10779	9121	7716	7486	6334
100	na	na	na	15646	15179	12844	12346	11977	10134	8573	8317	7038
110	na	na	na	17211	16697	14128	13580	13175	11148	9431	9149	7742
120	na	na	na	18776	18215	15413	14815	14372	12161	10288	9981	8445

Effective flux (lm) with optic K (TSB) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	227	174	220	166	127	161
120	27244	20933	26431	19888	15281	19294
240	54488	41866	52861	39776	30562	38589

Motorway junction



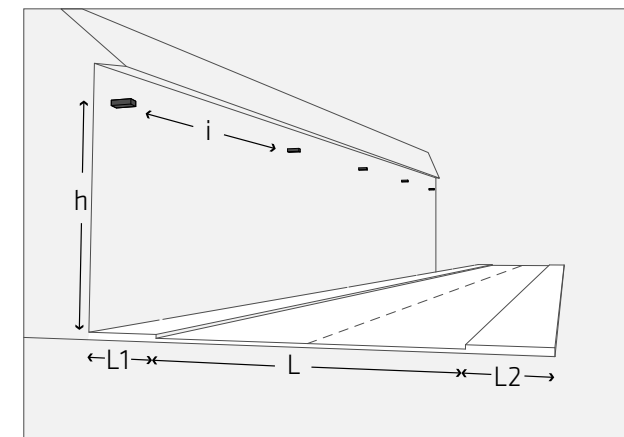
Maintenance coefficient: 0.9

80 LEDs - 700 mA - 5700K - 183W			
h = 10m	i = 37m	L = 4m	L1 = 2.5m

Complying with the following lighting classes:

ME2 street	Lm(cd/m²)	Uo	UI	TI	SR
	1.50	0.72	0.73	8	0.91

Urban road - wall-mounted application



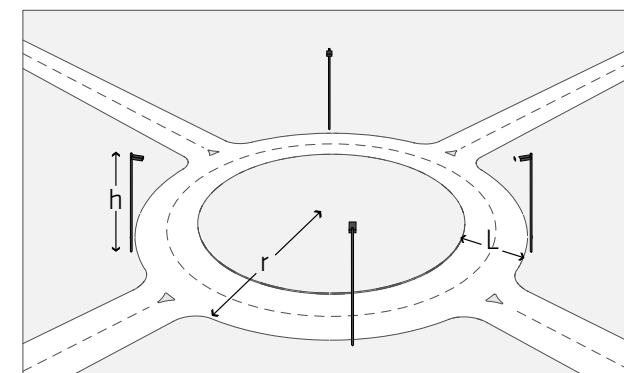
Maintenance coefficient: 0.9

40 LEDs - 700 mA - 4000K - 91W				
h = 8m	i = 30m	L = 7m	L1 = 2m	L2 = 2m

Complying with the following lighting classes:

ME4a street	Lm(cd/m²)	Uo	UI	TI	SR
	0.77	0.55	0.67	10	0.70
S2 sidewalk L1	Em(LUX)	Emin(LUX)			
	13.27	8.21			
S3 sidewalk L2	Em(LUX)	Emin(LUX)			
	8.31	4.46			

Urban roundabout



Maintenance coefficient: 0.9

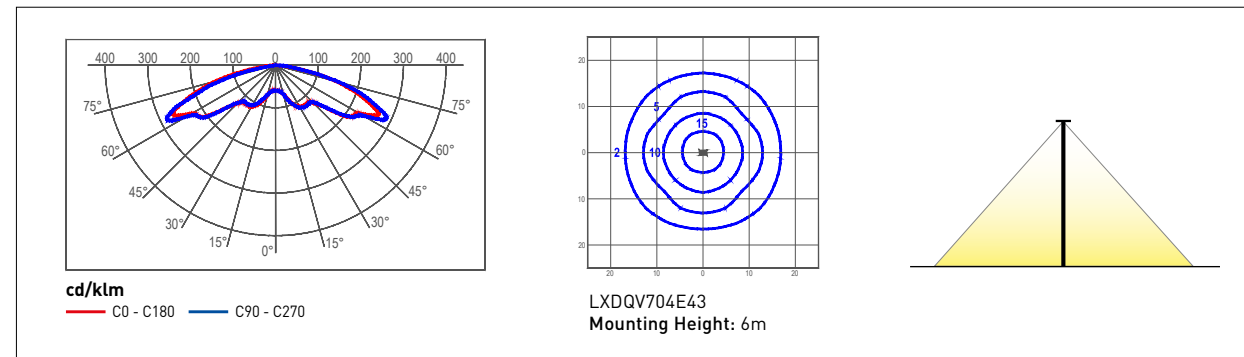
4 fixtures 40 LEDs - 700 mA - 4000K - 91W		
h = 8m	L = 7m	r = 20m

Complying with the following lighting classes:

CE3 round- about	Em(LUX)	Uo
	15	0.54

QV (Type 5 Medium)

Symmetrical optic for street lighting and car parks



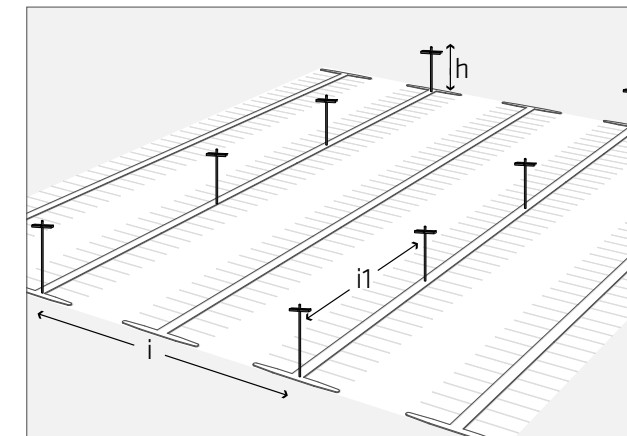
Effective flux (lm) with optic QV - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	274	266	225	200	194	164	158	153	129	110	106	90
20	5475	5312	4495	3997	3878	3281	3154	3060	2589	2190	2125	1798
30	8213	7968	6742	5995	5816	4922	4731	4589	3883	3285	3187	2697
40	10950	10624	8989	7994	7755	6562	6307	6119	5178	4380	4249	3596
50	na	na	na	9992	9694	8203	7884	7649	6472	5475	5312	4495
60	na	na	na	11991	11633	9843	9461	9179	7767	6570	6374	5394
80	na	na	na	15988	15510	13124	12615	12238	10356	8760	8499	7191
90	na	na	na	17986	17449	14765	14192	13768	11650	9855	9561	8090
100	na	na	na	19985	19388	16405	15769	15298	12944	10950	10624	8989
110	na	na	na	21983	21327	18046	17346	16828	14239	12046	11686	9888
120	na	na	na	23982	23266	19686	18922	18358	15533	13141	12748	10787

Effective flux (lm) with optic 5 (QV) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	278	213	269	203	156	197
120	33323	25604	32328	24325	18691	23599
240	66645	51207	64656	48651	37381	47199

Shopping center car park



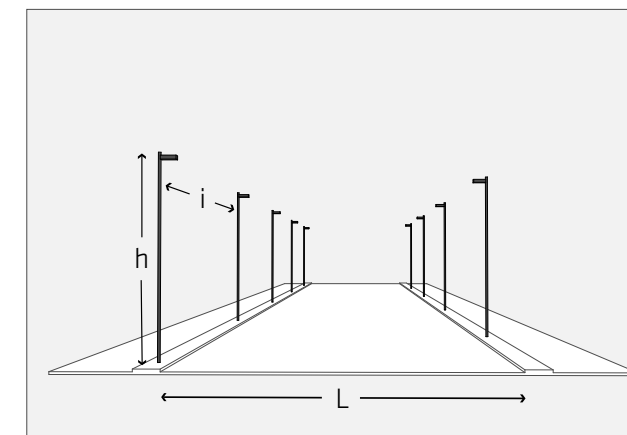
Maintenance coefficient: 0.9

2 fixtures per pole 80 LEDs - 700 mA - 4000K - 183W		
h = 8m	i = 35m	i1 = 35m

Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX) 23	Uo 0.54
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Green area - pedestrian path



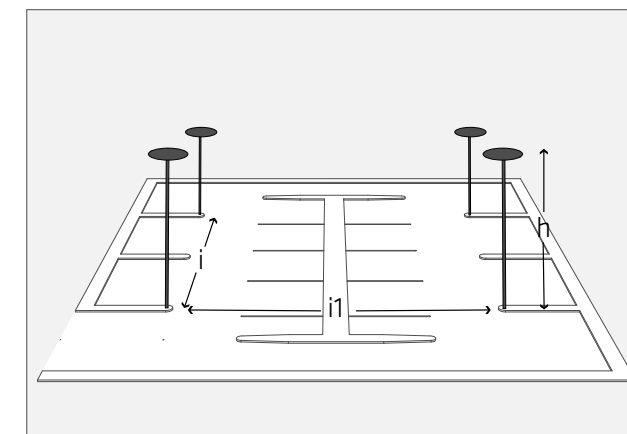
Maintenance coefficient: 0.9

40 LEDs - 525 mA - 4000K - 69W		
h = 5m	L = 3m	i = 40m staggered

Complying with the following lighting classes:

S1 path	Em(LUX) 15.14	Emin(LUX) 11.44
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High mast lighting



Maintenance coefficient: 0.9

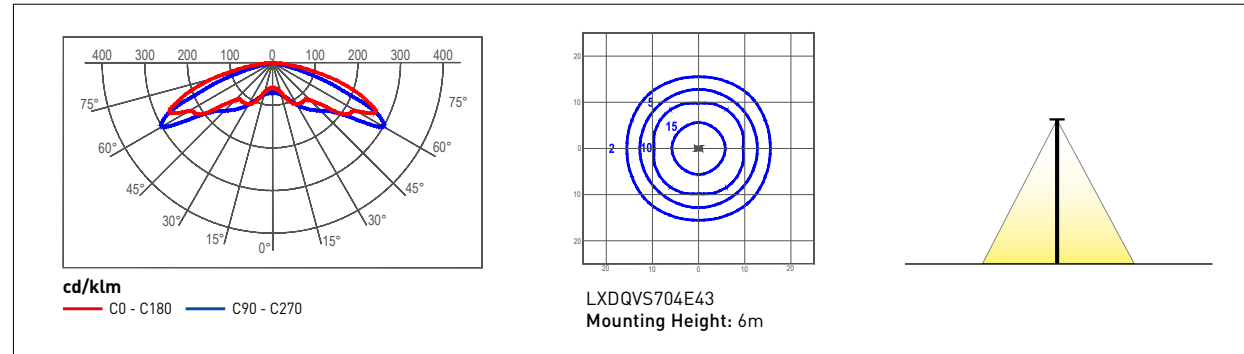
5 fixtures each tower 240 LEDs - 1A - 5700K - 831W		
h = 30m	i = 120m	i1 = 120m

Complying with the following lighting standard:

UNI EN 12464-2	Em(LUX) 21	Uo 0.67
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QVS (Type 5 Short)

Symmetrical optic for street lighting and car parks



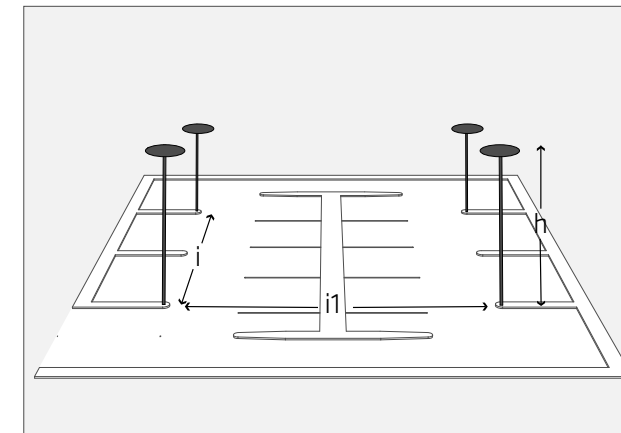
Effective flux (lm) with optic QVS - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	321	311	263	234	227	192	185	179	152	128	124	105
20	6413	6222	5264	4681	4542	3843	3694	3584	3032	2565	2489	2106
30	9619	9332	7897	7022	6813	5764	5541	5372	4548	3848	3733	3159
40	12826	12443	10529	9363	9083	7686	7388	7167	6065	5130	4977	4212
50	na	na	na	11704	11354	9607	9235	8959	7581	6413	6222	5264
60	na	na	na	14044	13625	11524	11082	10751	9097	7696	7466	6317
80	na	na	na	18726	18167	15372	14775	14334	12129	10261	9954	8423
90	na	na	na	21067	20438	17293	16622	16126	13645	11543	11199	9476
100	na	na	na	23407	22709	19215	18469	17918	15161	12826	12443	10529
110	na	na	na	25748	24979	21136	20316	19710	16678	14109	13687	11582
120	na	na	na	28089	27250	23058	22163	21502	18194	15391	14932	12635

Effective flux (lm) with optic R (QVS) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	321	246	311	234	180	227
120	38478	29565	37329	28089	21582	27250
240	76956	59130	74658	56178	43165	54501

High mast lighting

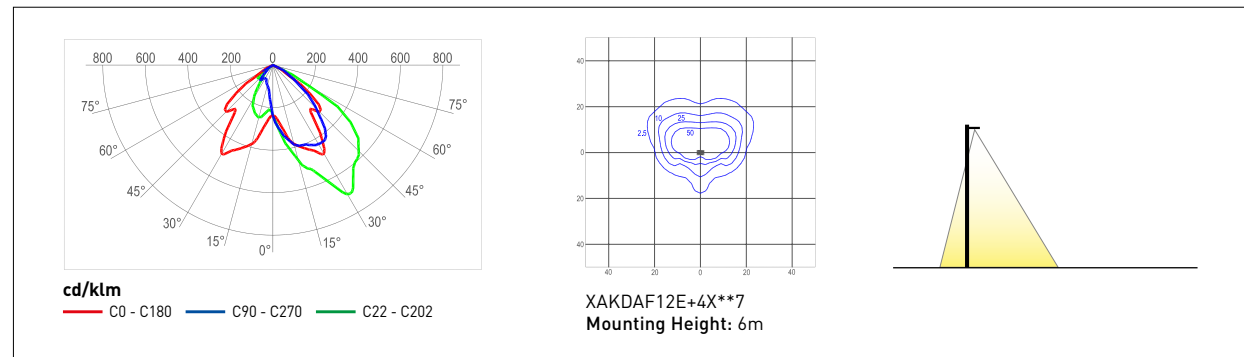


Maintenance coefficient: 0.9

5 fixtures each tower		
240 LEDs - 1A - 5700K - 831W		
h = 30m	i = 120m	i1 = 120m

Complying with the following lighting standard:

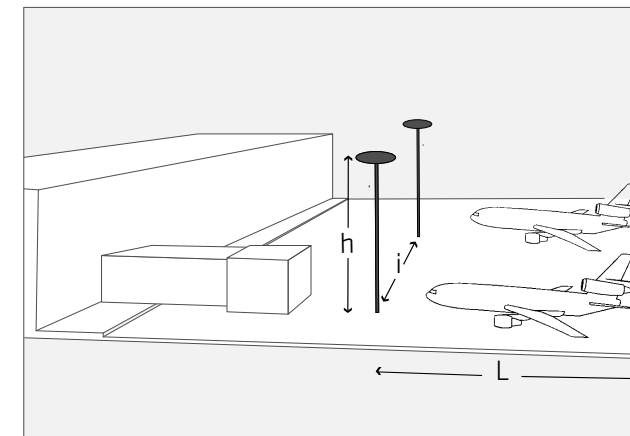
UNI EN 12464-2	Em(LUX)	Uo
	24	0.41



Effective flux (lm) with optic AF - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	312	240	303	228	175	221
120	37459	28782	36341	27345	21011	26529
240	74918	57564	72682	54690	42022	53058

Airport



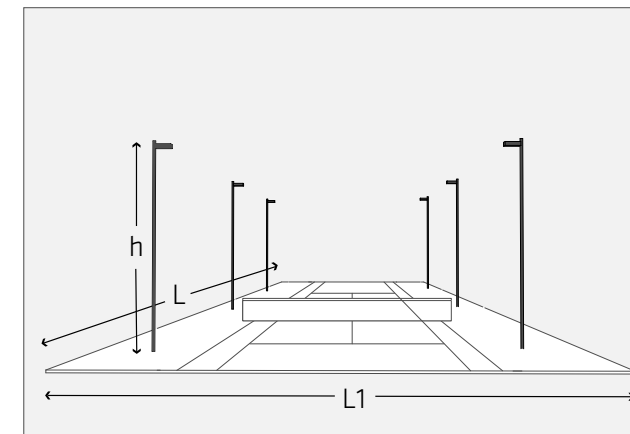
Maintenance coefficient: 0.9

3 fixtures each tower 240 LEDs - 1A - 4000K - 831W		
h = 30m	i = 45m	L = 40m

Complying with the following lighting standard:

UNI EN	Em(LUX)	Uo	Ev (LUX)	GRmax
12464-2	50	0.40	20	h4.5=<30 h6.5=<50

Tennis court



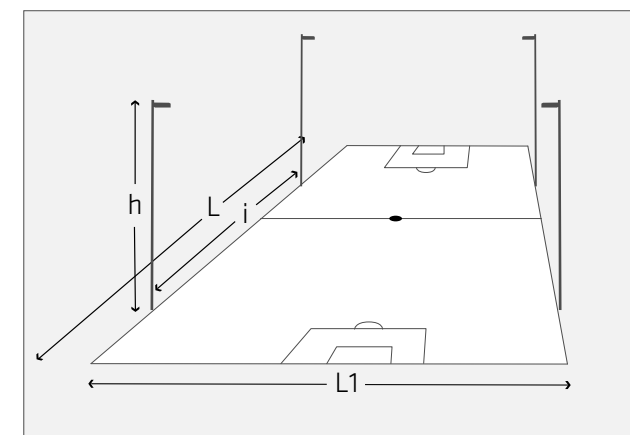
Maintenance coefficient: 0.9

6 fixtures 120 LEDs - 1A - 4000K - 416W		
h = 8m	L = 36m	L1 = 18m

Complying with the following lighting standard:

UNI EN	Em(LUX)	Uo	GRmax
9547	230	0.70	27

Five-a-side-football



Maintenance coefficient: 0.9

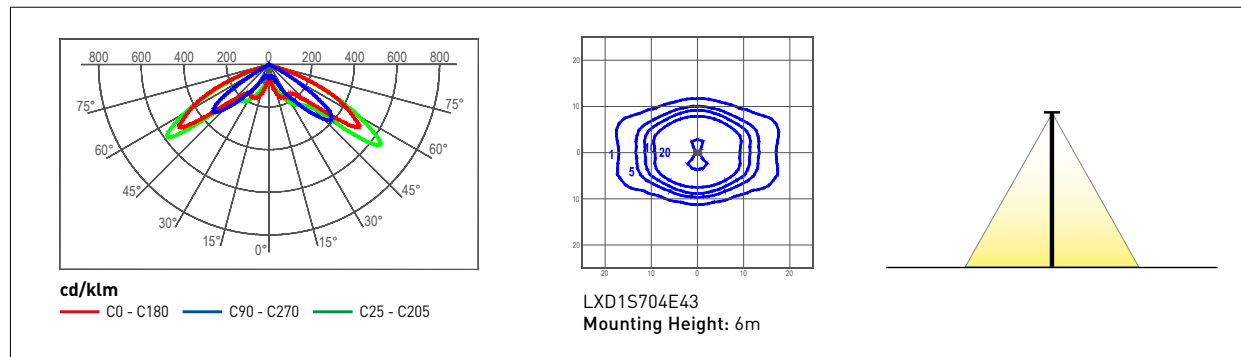
4 fixtures 120 LEDs - 1A - 5700K - 416W			
h = 12m	L = 40m	L1 = 22m	i = 22m

Complying with the following lighting standard:

UNI EN	Em(LUX)	Uo
12193	103	0.76

1S (Type 1 Short)

Symmetrical beam optic for lighting tunnels and underpasses



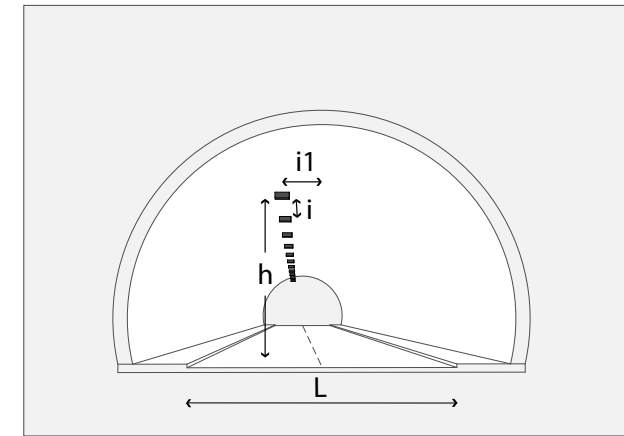
Effective flux (lm) with optic 1S - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	311	302	256	227	221	187	179	174	147	125	121	102
20	6228	6042	5113	4547	4411	3732	3587	3480	2945	2491	2417	2045
30	9342	9063	7669	6820	6616	5598	5381	5220	4417	3737	3625	3068
40	12456	12084	10225	9093	8822	7464	7175	6961	5890	4982	4834	4090
50	na	na	na	11366	11027	9331	8968	8701	7362	6228	6042	5113
60	na	na	na	13640	13232	11197	10762	10441	8835	7474	7251	6135
80	na	na	na	18186	17643	14929	14350	13921	11780	9965	9668	8180
90	na	na	na	20459	19849	16795	16143	15661	13252	11211	10876	9203
100	na	na	na	22733	22054	18661	17937	17402	14724	12456	12084	10225
110	na	na	na	25006	24259	20527	19731	19142	16197	13702	13293	11248
120	na	na	na	27279	26465	22393	21524	20882	17669	14947	14501	12270

Effective flux (lm) with optic T (1S) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	325	250	315	237	182	230
120	38975	29947	37812	28452	21861	27603
240	77950	59894	75623	56904	43722	55205

Motorway tunnel



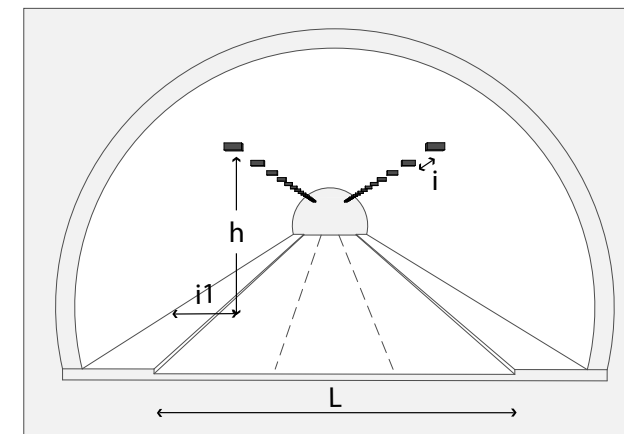
Maintenance coefficient: 0.8

30 LEDs - 700 mA - 4000K - 70W			
L = 7.5m	h = 5.2m	i = 9m	i1 = 1.1m

Complying with the following lighting classes:

ME1 downgraded to ME2 bi-direction	Lm(cd/m²)	Uo	Ul	Tl
	3.09	0.66	0.71	3.36
Wall close to fixtures	Lm(cd/m²)	Uo	Ul	
	7.41	0.63	0.64	
Wall opposite	Lm(cd/m²)	Uo	Ul	
	4.47	0.47	0.80	

Motorway tunnel



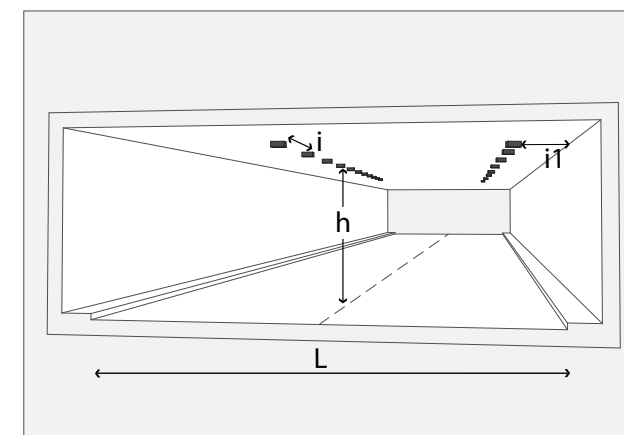
Maintenance coefficient: 0.8

20 LEDs - 350 mA - 5700K - 25W			
L = 10.5m	h = 5.9m	i = 10.5m	i1 = 3.1m

Complying with the following lighting classes:

ME2 downgraded to ME3 mono-direction	Lm(cd/m²)	Uo	Ul	Tl
	1.53	0.67	0.73	2.34
Walls	Lm(cd/m²)	Uo	Ul	
	1.43	0.68	0.87	

Urban underpass



Maintenance coefficient: 0.8

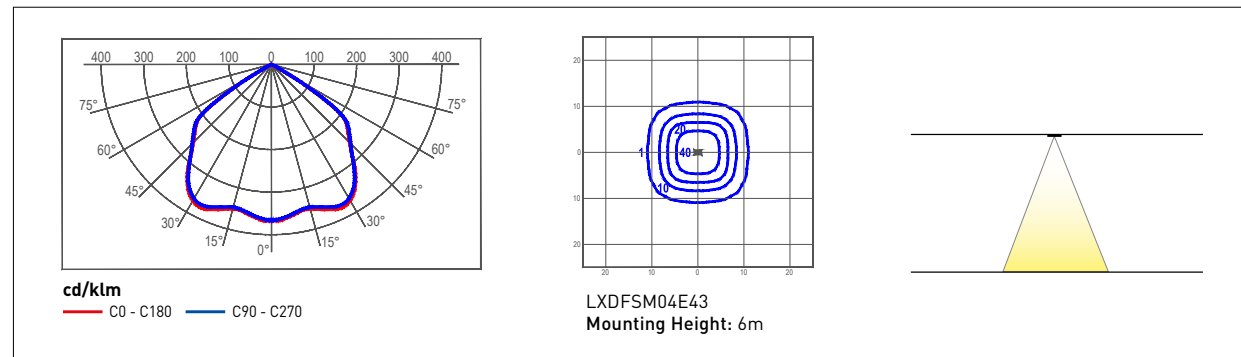
20 LEDs - 525 mA - 4000K - 37W			
L = 9.5m	h = 4.6m	i = 9m	i1 = 1m

Complying with the following lighting classes:

ME3a bi-direction	Lm(cd/m²)	Uo	Ul	Tl
	2.21	0.76	0.75	3.30
Walls	Lm(cd/m²)	Uo	Ul	
	1.98	0.47	0.60	

FS (Petroleum Canopy)

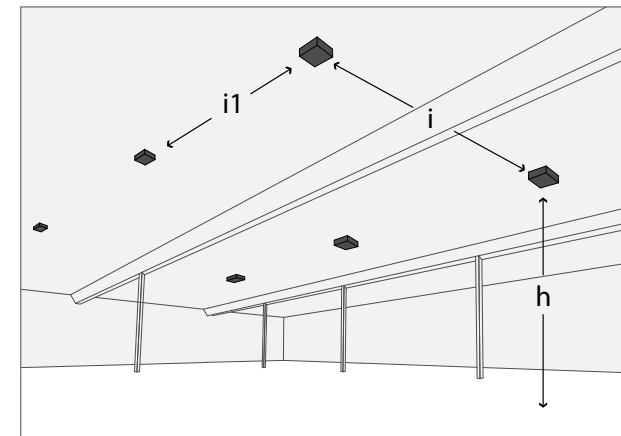
Square symmetrical beam optic for ceiling-mounted lighting



Effective flux (lm) with optic FS - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	320	310	262	233	226	192	184	179	151	128	124	105
20	6392	6201	5247	4666	4527	3830	3682	3572	3022	2557	2480	2099
30	9588	9302	7871	6999	6790	5746	5523	5358	4534	3835	3721	3148
40	12784	12402	10494	9332	9054	7661	7364	7144	6045	5114	4961	4198
50	na	na	na	11665	11317	9576	9204	8930	7556	6392	6201	5247
60	na	na	na	13998	13581	11491	11045	10716	9067	7670	7441	6297
80	na	na	na	18665	18107	15322	14727	14288	12089	10227	9922	8395
90	na	na	na	20998	20371	17237	16568	16073	13601	11506	11162	9445
100	na	na	na	23331	22634	19152	18409	17859	15112	12784	12402	10494
110	na	na	na	25664	24898	21067	20250	19645	16623	14062	13643	11544
120	na	na	na	27997	27161	22983	22091	21431	18134	15341	14883	12593

Covered sports arena



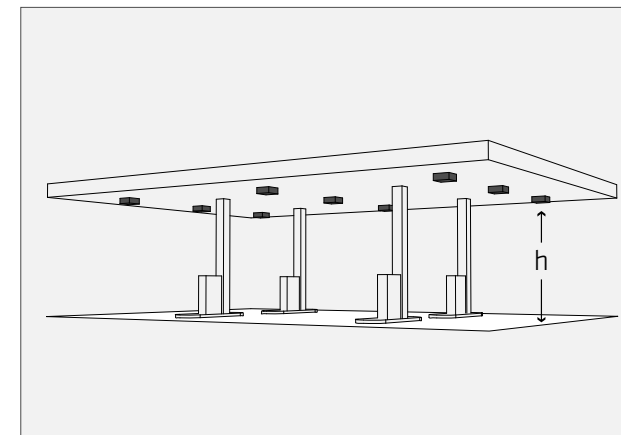
120 LEDs - 700 mA - 4000K - 264W

h = 7.5m | i = 6.7m | i1 = 4.4m

Complying with the following lighting standard:

UNI EN	Em(LUX)	Uo	UGRmax
12193	755	0.84	13

Service station

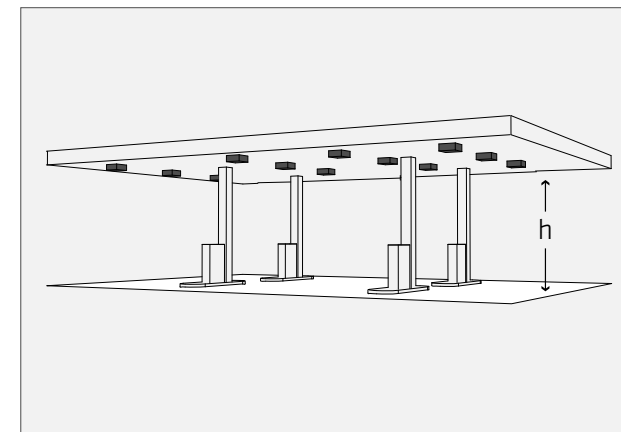


9 fixtures
 60 LEDs - 700 mA - 5700K - 132W

h = 4.5m

Em(LUX)	Uo	Ev
312	0.62	h1.5=>150

Service station

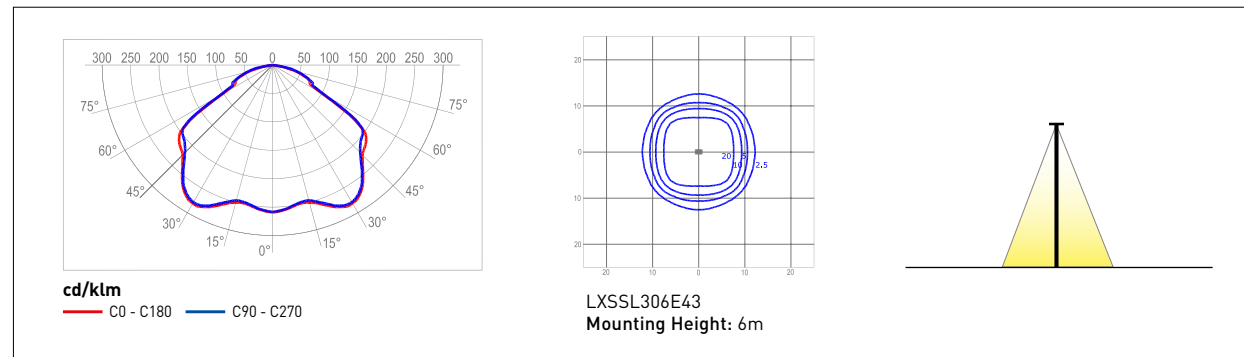


12 fixtures
 40 LEDs - 700 mA - 5700K - 92W

h = 4.5m

Em(LUX)	Uo	Ev
306	0.51	h1.5=>150

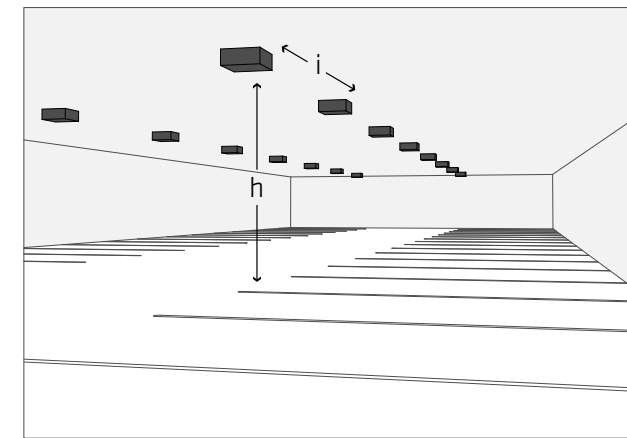
Square symmetrical beam optic for ceiling-mounted applications



Effective flux (lm) with optic SL - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	299	290	245	218	212	179	172	167	141	120	116	98
20	5981	5802	4910	4366	4236	3584	3445	3342	2828	2392	2321	1964
30	8971	8703	7364	6549	6354	5376	5167	5013	4242	3588	3481	2946
40	11962	11605	9819	8732	8471	7168	6890	6684	5656	4785	4642	3928
50	na	na	na	10915	10589	8960	8612	8355	7070	5981	5802	4910
60	na	na	na	13098	12707	10752	10335	10026	8484	7177	6963	5892
80	na	na	na	17464	16943	14336	13780	13368	11312	9569	9284	7855
90	na	na	na	19647	19061	16128	15502	15040	12726	10765	10444	8837
100	na	na	na	21830	21178	17920	17225	16711	14140	11962	11605	9819
110	na	na	na	24013	23296	19712	18947	18382	15554	13158	12765	10801
120	na	na	na	26196	25414	21504	20670	20053	16968	14354	13925	11783

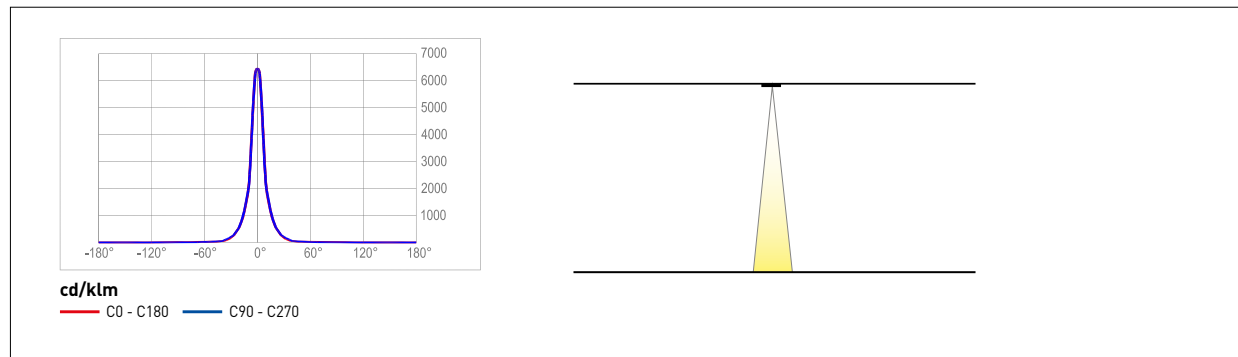
Underground car park



Maintenance coefficient: 0.8

20 LEDs - 350 mA - 4000K - 25W		
h = 2.6m	L = 4.1m	
Em(LUX)	Uo	UGRmax
75	0.41	24

Focused symmetrical beam optic with 15° opening



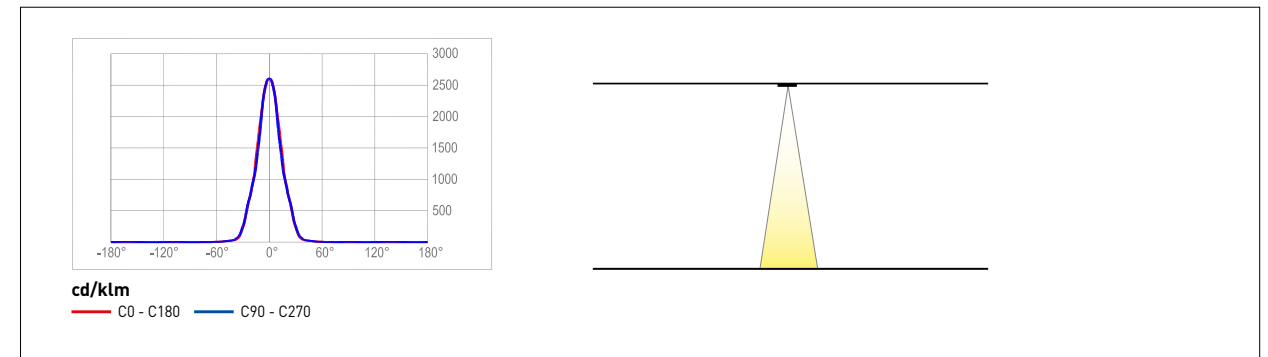
Effective flux (lm) with optic 15 - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	334	324	274	244	236	200	192	187	158	134	130	110
20	6676	6476	5480	4873	4728	4000	3845	3730	3157	2670	2591	2192
30	10014	9715	8220	7310	7092	6001	5768	5596	4735	4005	3886	3288
40	13351	12953	10960	9747	9456	8001	7690	7461	6313	5341	5181	4384
50	na	na	na	12183	11820	10001	9613	9326	7891	6676	6476	5480
60	na	na	na	14620	14183	12001	11536	11191	9470	8011	7772	6576
80	na	na	na	19493	18911	16002	15381	14922	12626	10681	10362	8768
90	na	na	na	21930	21275	18002	17304	16787	14204	12016	11658	9864
100	na	na	na	24366	23639	20002	19226	18652	15783	13351	12953	10960
110	na	na	na	26803	26003	22003	21149	20517	17361	14687	14248	12056
120	na	na	na	29240	28367	24003	23071	22383	18939	16022	15544	13152

Effective flux (lm) with optic B (15) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	334	256	324	244	187	236
120	40054	30776	38859	29240	22467	28367
240	80109	61552	77718	58480	44933	56734

Focused symmetrical beam optic with 25° opening



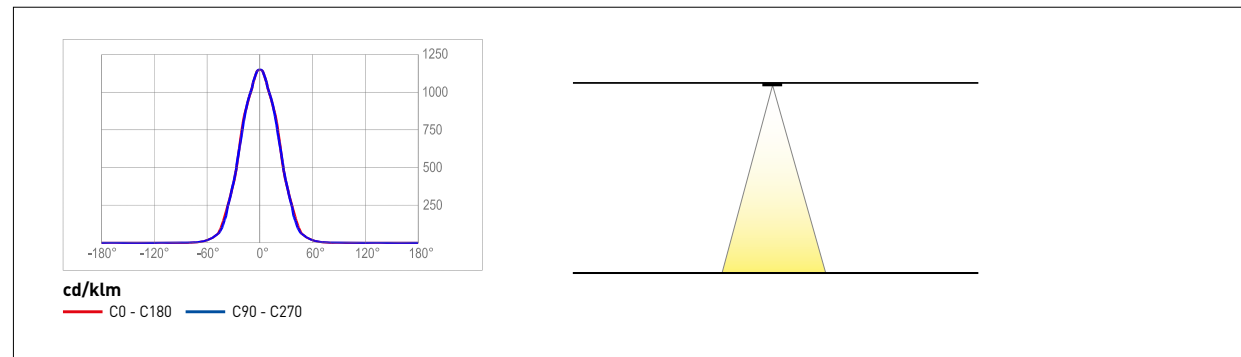
Effective flux (lm) with optic 25 - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	334	324	274	243	236	200	192	186	158	133	129	110
20	6671	6471	5476	4869	4724	3997	3842	3728	3154	2668	2589	2190
30	10006	9707	8214	7304	7086	5996	5763	5591	4731	4002	3883	3285
40	13341	12943	10952	9739	9448	7995	7684	7455	6308	5336	5177	4381
50	na	na	na	12174	11810	9993	9606	9319	7885	6671	6471	5476
60	na	na	na	14608	14172	11992	11527	11183	9462	8005	7766	6571
80	na	na	na	19478	18896	15989	15369	14910	12616	10673	10354	8761
90	na	na	na	21913	21259	17988	17290	16774	14193	12007	11649	9856
100	na	na	na	24347	23621	19987	19211	18638	15770	13341	12943	10952
110	na	na	na	26782	25983	21985	21132	20501	17347	14675	14237	12047
120	na	na	na	29217	28345	23984	23053	22365	18924	16009	15531	13142

Effective flux (lm) with optic C (25) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	334	256	324	243	187	236
120	40023	30752	38828	29217	22449	28345
240	80046	61504	77657	58434	44898	56689

Focused symmetrical beam optic with 40° opening



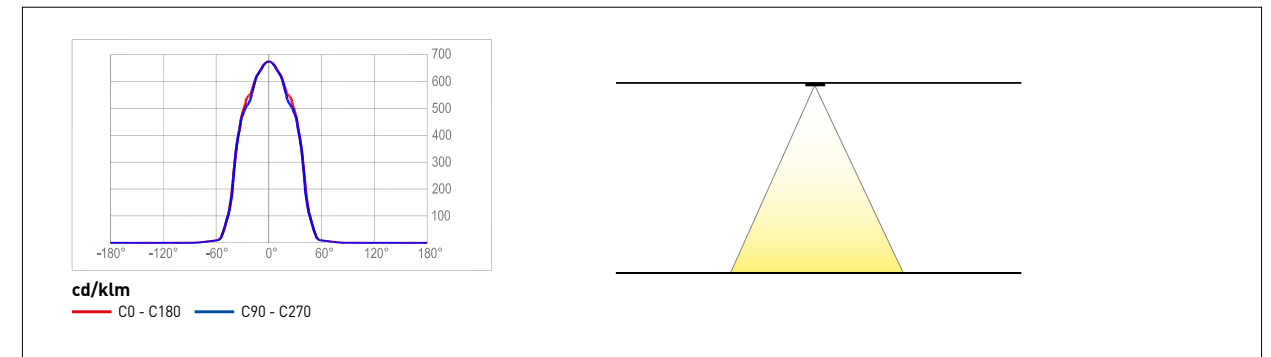
Effective flux (lm) with optic 40 - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	313	304	257	229	222	188	180	175	148	125	122	103
20	6266	6079	5144	4574	4438	3755	3609	3502	2963	2507	2432	2058
30	9400	9119	7716	6862	6657	5633	5414	5253	44444	3760	3648	3086
40	12533	12159	10288	9149	8876	7510	7219	7003	5926	5013	4863	4115
50	na	na	na	11436	11095	9388	9024	8754	7407	6266	6079	5144
60	na	na	na	13723	13314	11265	10828	10505	8889	7520	7295	6173
80	na	na	na	18298	17752	15021	14438	14007	11852	10026	9727	8230
90	na	na	na	20585	19971	16898	16242	15758	13333	11279	10943	9259
100	na	na	na	22872	22190	18776	18047	17508	14815	12533	12159	10288
110	na	na	na	25159	24408	20653	19852	19259	16296	13786	13375	11317
120	na	na	na	27447	26627	22531	21657	21010	17778	15039	14590	12346

Effective flux (lm) with optic D (40) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	313	241	304	229	176	222
120	37598	28889	36476	27447	21089	26627
240	75197	57778	72952	54893	42178	53255

Focused symmetrical beam optic with 70° opening



Effective flux (lm) with optic 70 - Cree Ledway / Cree 304 Series

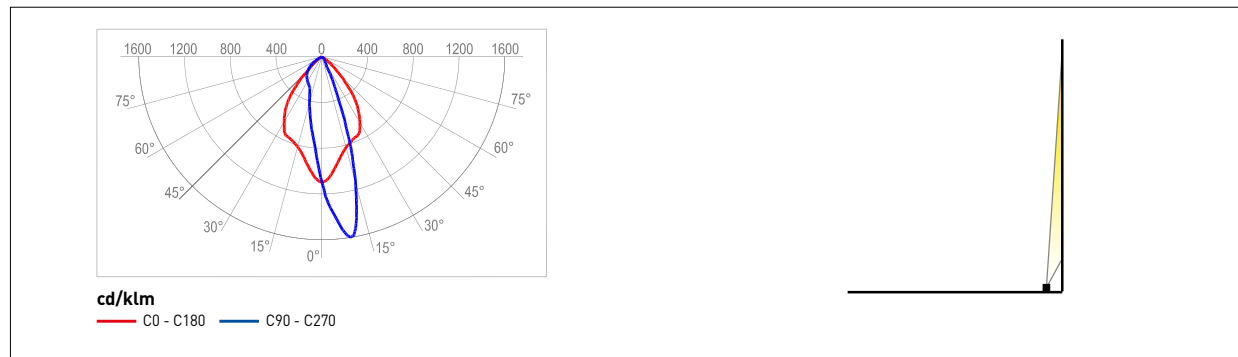
Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	284	275	233	207	201	170	163	159	134	113	110	93
20	5674	5505	4658	4142	4019	3400	3268	3171	2683	2270	2202	1863
30	8512	8257	6987	6213	6028	5101	4903	4756	4025	3405	3303	2795
40	11349	11010	9316	8285	8037	6801	6537	6342	5366	4539	4404	3726
50	na	na	na	10356	10047	8501	8171	7927	6708	5674	5505	4658
60	na	na	na	12427	12056	10201	9805	9513	8049	6809	6606	5590
80	na	na	na	16569	16075	13602	13074	12683	10732	9079	8808	7453
90	na	na	na	18640	18084	15302	14708	14269	12074	10214	9909	8385
100	na	na	na	20711	20093	17002	16342	15854	13415	11349	11010	9316
110	na	na	na	22783	22102	18702	17976	17440	14757	12484	12111	10248
120	na	na	na	24854	24112	20402	19611	19025	16098	13618	13212	11179

Effective flux (lm) with optic D (70) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	284	218	275	207	159	201
120	34046	26160	33030	24854	19097	24112
240	68092	52319	66060	49707	38193	48224

SN

Asymmetric beam optic for lighting building facades and signs, and for grazing/wall wash lighting effects



Effective flux (lm) with optic SN - Cree Ledway / Cree 304 Series

Number of LEDs	1A			700mA			525mA			350mA		
	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K	5700K	4000K	3500K
1	300	291	247	219	213	180	173	168	142	120	117	99
20	6006	5827	4930	4384	4254	3599	3460	3356	2840	2402	2331	1972
30	9009	8740	7396	6577	6380	5399	5189	5034	4260	3604	3496	2958
40	12012	11654	9861	8769	8507	7198	6919	6712	5680	4805	4661	3944
50	na	na	na	10961	10634	8998	8649	8391	7100	6006	5827	4930
60	na	na	na	13153	12761	10797	10379	10069	8520	7207	6992	5916
80	na	na	na	17538	17014	14397	13838	13425	11360	9610	9323	7889
90	na	na	na	19730	19141	16196	15568	15103	12780	10811	10488	8875
100	na	na	na	21922	21268	17996	17298	16781	14199	12012	11654	9861
110	na	na	na	24114	23395	19795	19027	18459	15619	13213	12819	10847
120	na	na	na	26307	25521	21595	20757	20137	17039	14415	13984	11833

Effective flux (lm) with optic X (SN) - Cree Edge High Output Series

Number of LEDs	1A			700mA		
	5700K	5000K	4000K	5700K	5000K	4000K
1	300	231	291	219	168	213
120	36036	27689	34961	26307	20213	25521
240	72073	55378	69922	32613	40426	51043



Luminous flux for Cree MD-A Series LEDs

Cree OSQ, XSP and RKT Series products are equipped with MD-A Series LEDs manufactured by us which, in the selected configuration, have a nominal flux of 1220Lm.

Cree innovation in LED and optic technologies created multiple efficiency improvements over previous generations of Cree LED street lights. A NanoOptic Precision Delivery Grid optic efficiently delivers light where needed, allowing to deliver unmatched target efficacy. Also, with the new version of the XSP Series, Cree moves its optic carrier to over-molded optics, improving the manufacturing technology.

Nominal flux (lm) of MD-A LEDs - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
12662	11943	10032	18993	17915	15049	25324	23887	20065

Nominal flux (lm) of MD-A LEDs - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5809	5537	4539	11619	11074	9077

Nominal flux (lm) of MD-A LEDs - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
9495	9050	7418	15744	15006	12300

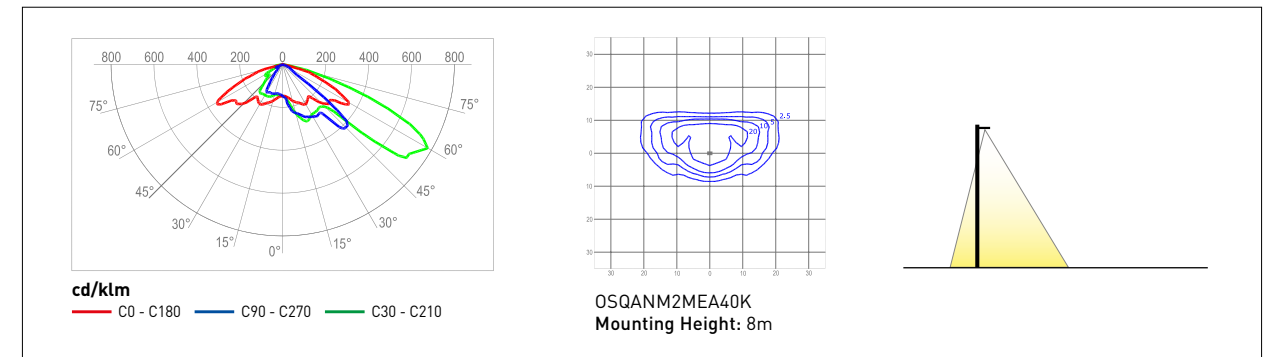
H - 67W			I - 116W		
5700K	4000K	3000K	5700K	4000K	3000K
7327	6984	5725	12678	12084	9905

Nominal flux (lm) of MD-A LEDs - Cree XSPR Series

A - 54W			B - 41W		
5700K	4000K	3000K	5700K	4000K	3000K
5613	5350	4385	4321	4118	3375

2ME (Type II Medium)

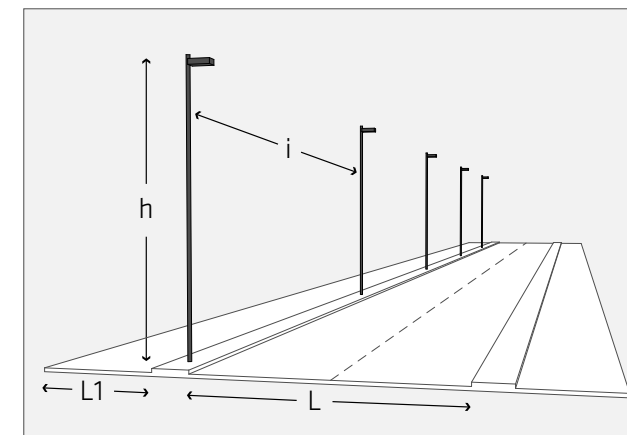
Asymmetric optic for street lighting



Effective flux (lm) with optic 2ME - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
11649	10988	9230	17474	16482	13845	23298	21976	18460

Urban Street



Maintenance coefficient: 0.9

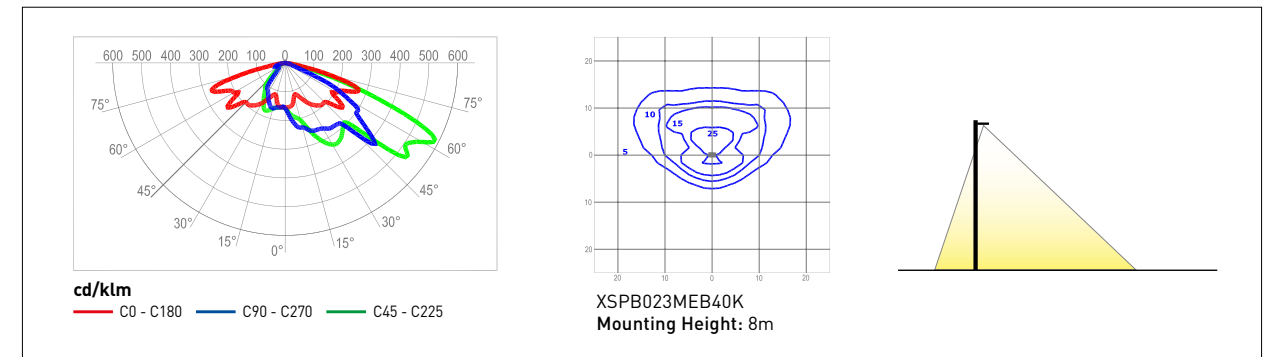
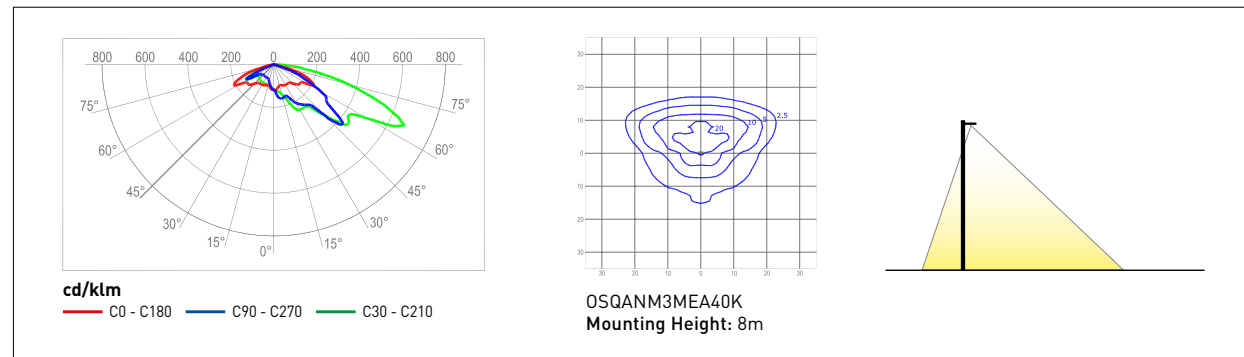
Input Power A - 4000K - Q1 - 56W			
h = 9m	i = 38m	L = 9m	L1 = 3.5m

Complying with the following lighting classes:

ME5 street	Lm(cd/m²)	Uo	Ut	Tl	SR
	0.61	0.54	0.42	7	0.54
S4 cycle lane	Em(LUX)	Emin(LUX)			
	5.43	1.49			

3ME (Type III Medium)

Asymmetric optic for street lighting



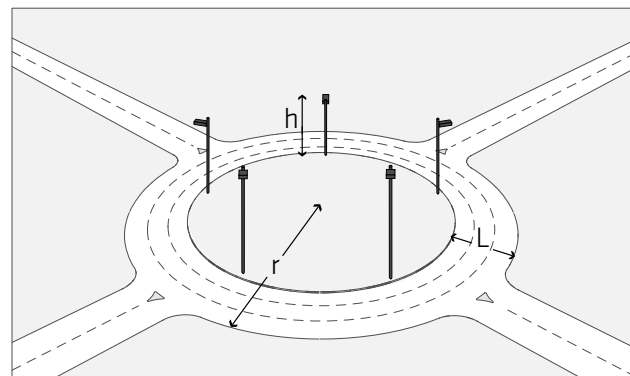
Effective flux (lm) with optic 3ME - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
11499	10846	9111	17248	16269	13666	22997	21692	18221

Effective flux (lm) with optic 3ME - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5220	4975	4078	10439	9950	8156

Urban roundabout



5 fixtures		
Input Power J - 4000K - Q4=120W		
h = 6m	L = 10m	r = 24.5m

Complying with the following lighting classes:

CE1 round- about	Em(LUX)	Uo
	31	0.42

Maintenance coefficient: 0.9

Effective flux (lm) with optic 3ME - Cree XSPR Series

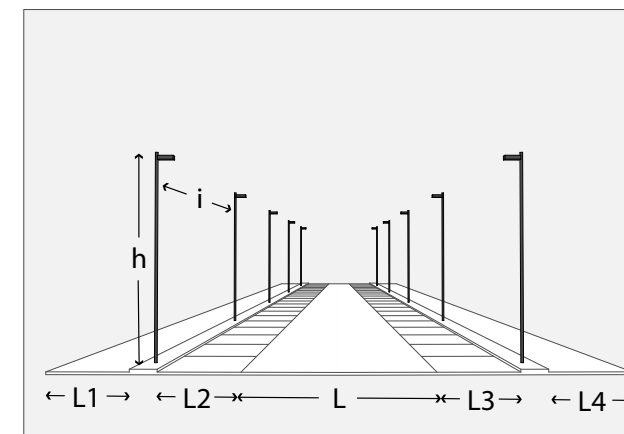
A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
5004	4770	3910	3852	3671	3009

Effective flux (lm) with optic 3ME - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8531	8131	6665	14146	13483	11052

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
6584	6275	5144	11391	10857	8900

Urban street



Maintenance coefficient: 0.9

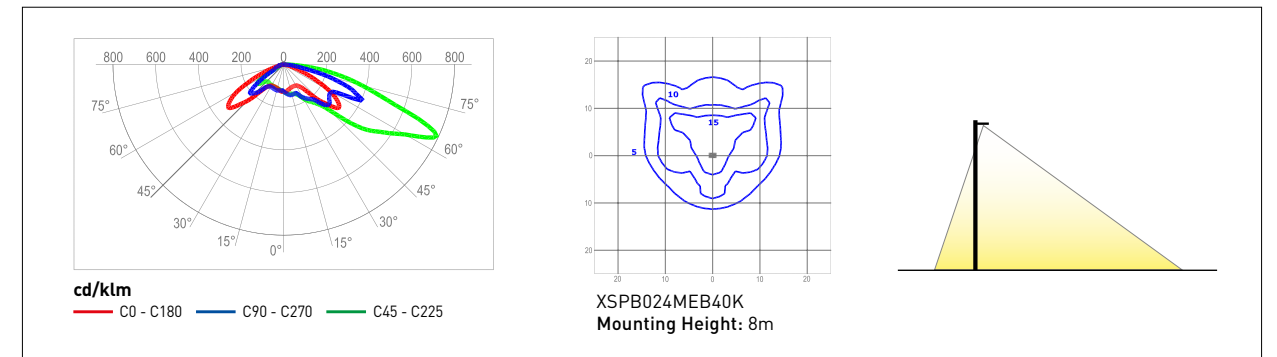
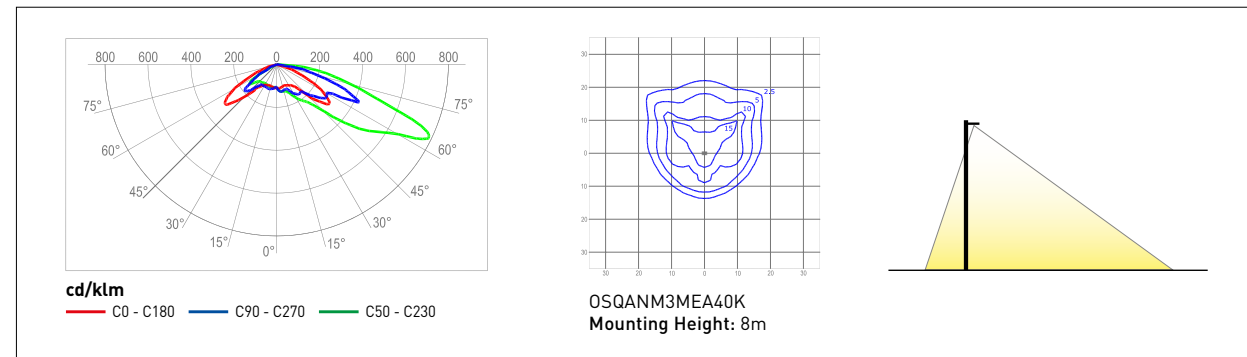
XSPB - Double mod - 4000K - Q7=83W						
h = 8m	i = 35m	L = 8m	L1 = 2.5m	L2 = 4m	L3 = 4m	L4 = 2.5m

Complying with the following lighting classes:

ME3b street	Lm(cd/m²)	Uo	UI	TI	SR
	1.22	0.72	0.62	9	0.72
S2 L1/L4	Em(LUX)	Emin(LUX)			
	11.88	4.46			
CE4 car park L2/L3	Em(LUX)	Uo			
	16.67	0.46			

4ME (Type IV Medium)

Asymmetric optic for street lighting



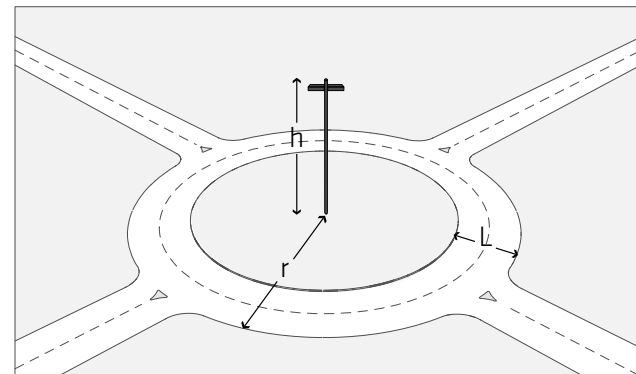
Effective flux (lm) with optic 4ME - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
11339	10696	8984	17009	16044	13477	22678	21391	17969

Effective flux (lm) with optic 4ME - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5391	5138	4212	10782	10277	8424

Urban roundabout



2 fixtures Input Power A - 4000K - Q7=101W		
h = 8m	L = 7m	r = 15m

Complying with the following lighting classes:

CE3 round- about	Em(LUX)	Uo
	15	0.41

Maintenance coefficient: 0.9

Effective flux (lm) with optic 4ME - Cree XSPR Series

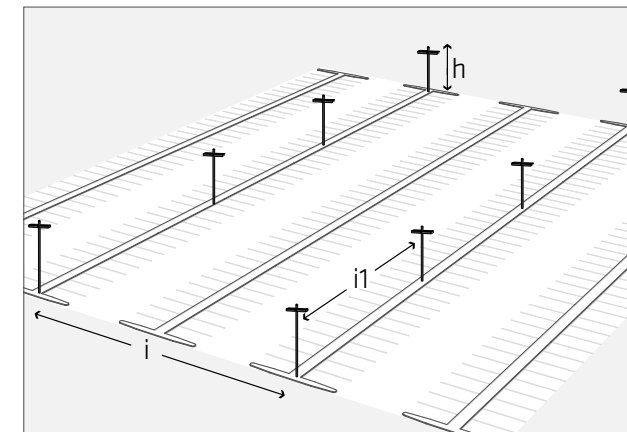
A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
4946	4714	3864	3807	3629	2974

Effective flux (lm) with optic 4ME - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8811	8398	6884	14610	13926	11414

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
6800	6481	5312	11765	11214	9192

Car Park



XSPB - Double mod - 4000K - Q9=101W		
h = 8m	i = 35m	i1 = 35m

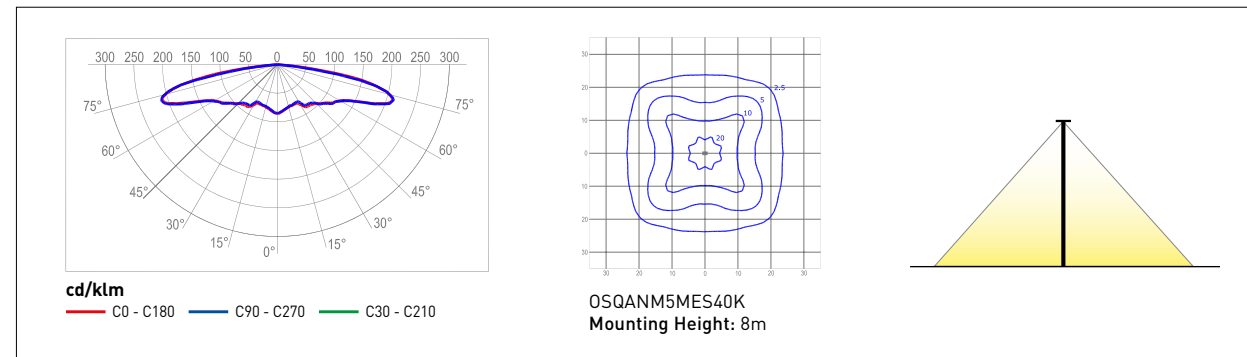
Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX)	Uo
	11	0.34

Maintenance coefficient: 0.9

5ME (Type V Medium)

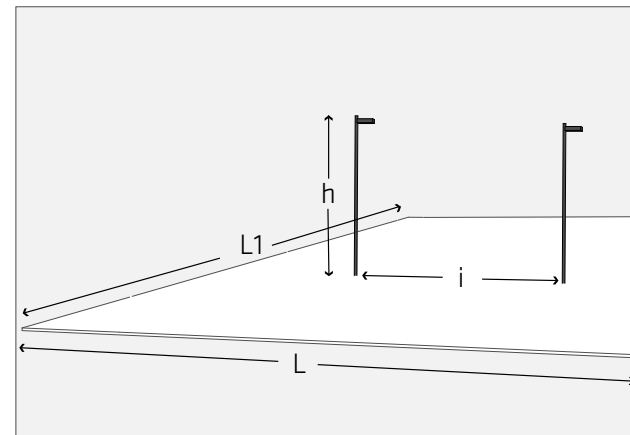
Symmetric optic for street and area lighting



Effective flux (lm) with optic 5ME - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
10467	10355	8711	15700	15532	13066	20933	20709	17422

Pedestrian square



Maintenance coefficient: 0.9

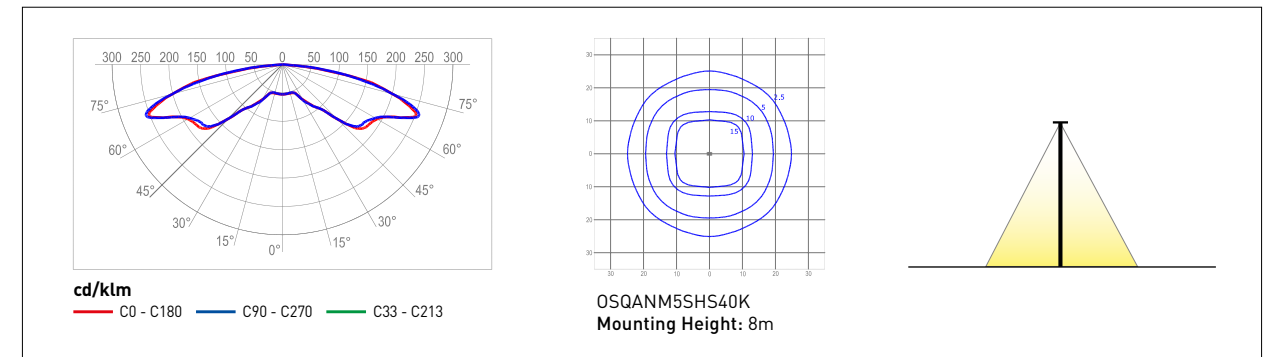
2 fixtures Input Power S - 40K - Q9=223W			
h = 8m	i = 40m	L = 70m	L1 = 30m

Complying with the following lighting standard:

UNI EN 12464-2	Em(LUX)	Uo
	11	0.49

5SH (Type V Short)

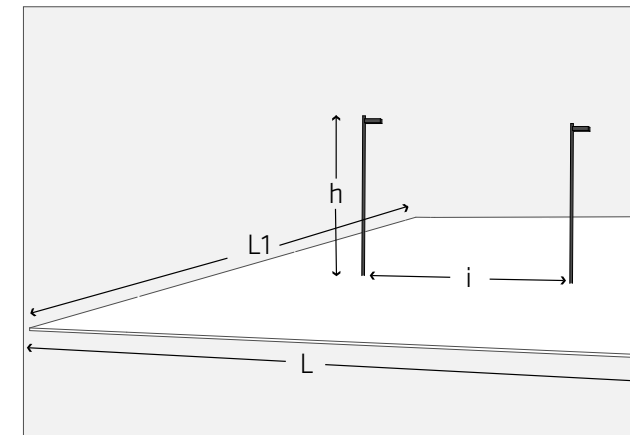
Symmetric optic for street and area lighting



Effective flux (lm) with optic 5SH - Cree OSQ Series

A - 112W			J - 168W			S - 223W		
5700K	4000K	3000K	5700K	4000K	3000K	5700K	4000K	3000K
10647	10533	8861	15971	15800	13292	21294	21066	17722

Pedestrian square



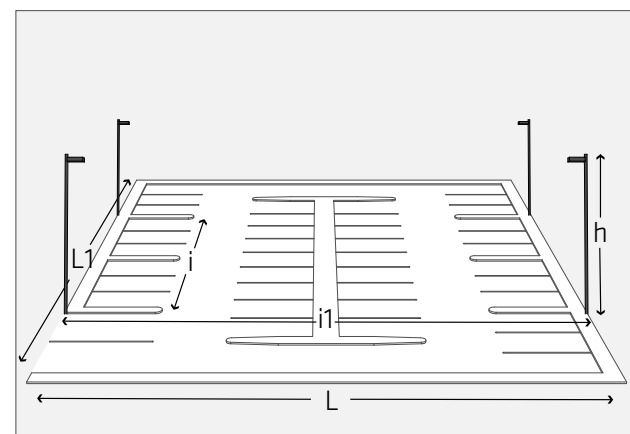
Maintenance coefficient: 0.9

2 fixtures Input Power S - 40K - Q9=223W			
h = 8m	i = 40m	L = 70m	L1 = 30m

Complying with the following lighting standard:

UNI EN 12464-2	Em(LUX)	Uo
	12	0.41

Car park



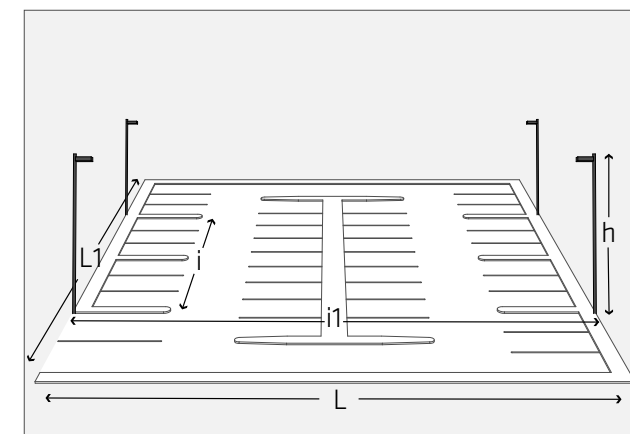
Maintenance coefficient: 0.9

4 fixtures Input Power S - 40K - Q5=175W				
h = 6m	i = 40m	i1 = 35m	L = 35m	L1 = 80m

Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX)	Uo
	10	0.28

Car park



Maintenance coefficient: 0.9

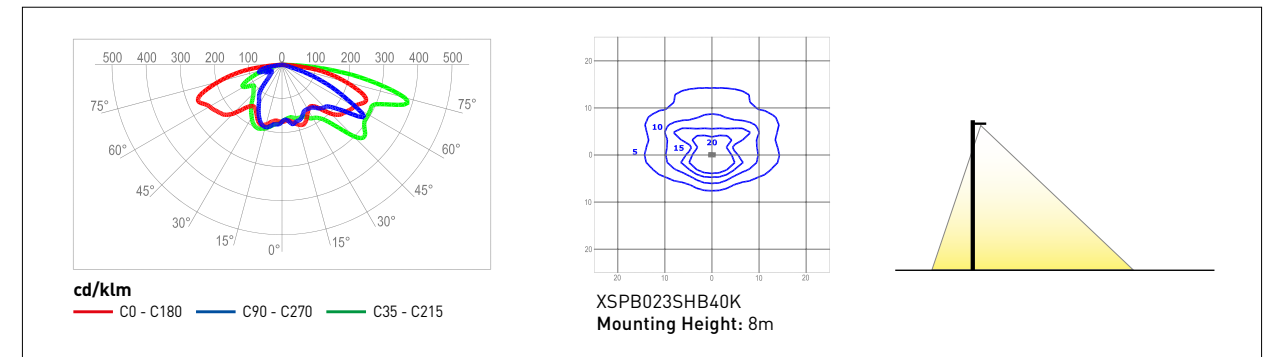
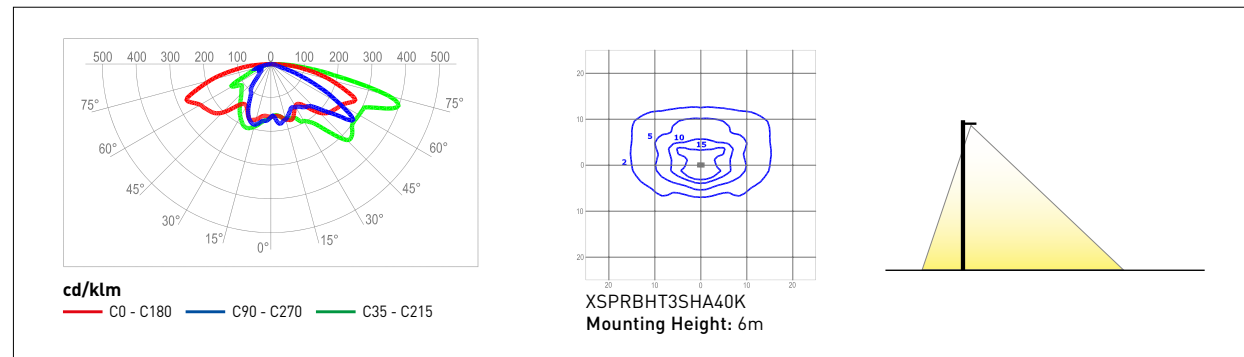
4 fixtures Input Power S - 40K - Q5=175W				
h = 6m	i = 20m	i1 = 35m	L = 35m	L1 = 40m

Complying with the following lighting standard:

UNI EN 12464-2 car park	Em(LUX)	Uo
	16	0.32

3SH (Type III Short)

Asymmetric optic for street lighting



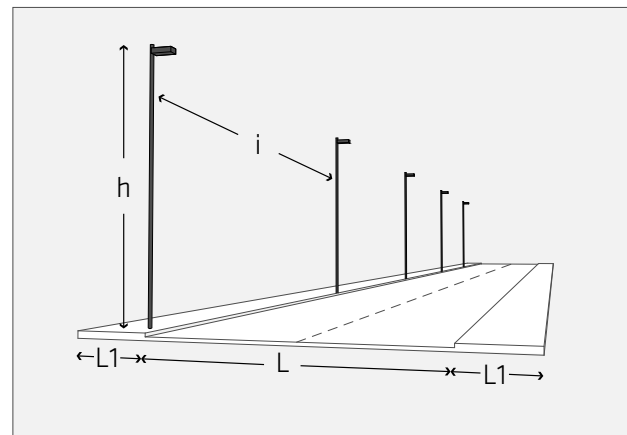
Effective flux (lm) with optic 3SH - Cree XSPR Series

A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
4834	4607	3776	3721	3546	2907

Effective flux (lm) with optic 3SH - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5140	4899	4016	10280	9798	8031

Extra urban road



Maintenance coefficient: 0.9

Input Power A - 4000K - Q9=54W		
h = 8m	i = 28m	L = 8.5m

Complying with the following lighting classes:

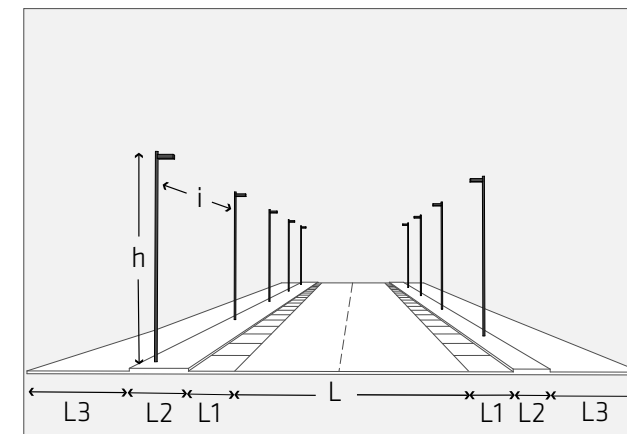
ME5 street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.51	0.44	0.74	15	0.80

Effective flux (lm) with optic 3SH - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8401	8007	6563	13930	13277	10883

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
6483	6179	5065	11218	10692	8764

Urban street



Maintenance coefficient: 0.9

XSPB - Double mod - 4000K - Q3=53W					
h = 6m	i = 33m staggered	L = 8m	L1 = 2.5m	L2 = 3m	L3 = 4m

Complying with the following lighting classes:

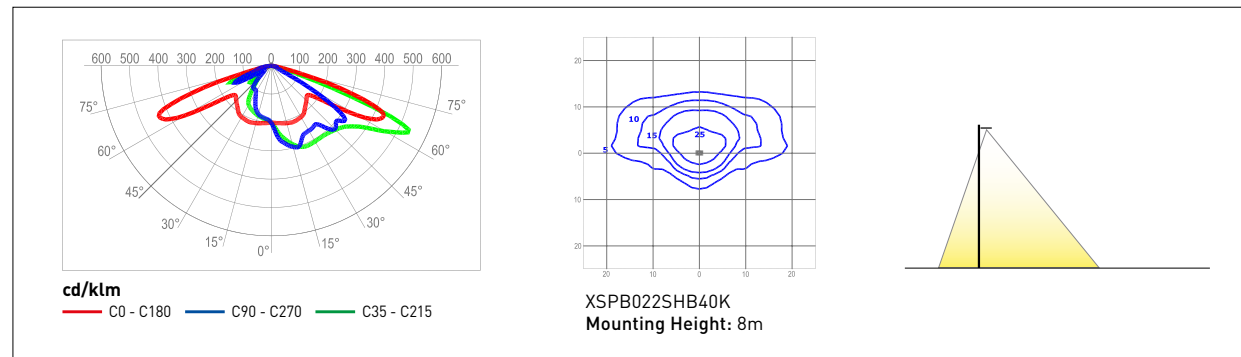
ME5 street	Lm(cd/m²)	Uo	Ul	Tl	SR
	0.54	0.77	0.78	13	1.12

CE5 L1	Em(LUX)	Uo
	11.02	0.42

S4 L3	Em(LUX)	Emin(LUX)
	6.22	1.84

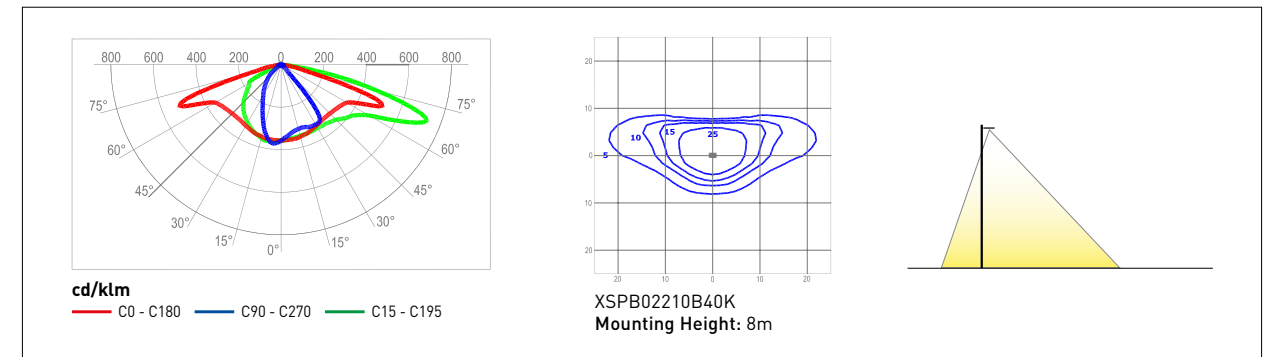
2SH (Type II Short)

Asymmetric optic for street lighting



275 (Type II Short 0.75)

Asymmetric optic for street lighting



Effective flux (lm) with optic 2SH - Cree XSPR Series

A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
5223	4978	4080	4020	3832	3141

Effective flux (lm) with optic 2SH - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5406	5152	4223	10811	10304	8446

Effective flux (lm) with optic 2SH - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8835	8421	6902	14650	13963	11445

H - 67W			I - 116W		
5700K	4000K	3000K	5700K	4000K	3000K
6818	6499	5327	11797	11244	9217

Effective flux (lm) with optic 275 - Cree XSPR Series

A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
5207	4963	4068	4008	3820	3131

Effective flux (lm) with optic 275 - Cree XSP B Series

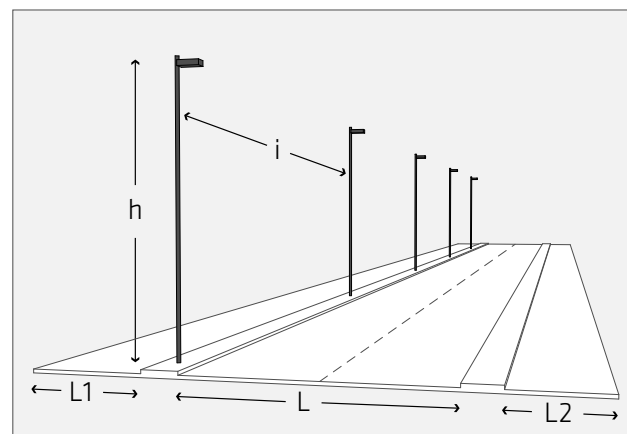
A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5597	5334	4372	11193	10669	8745

Effective flux (lm) with optic 275 - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
9148	8719	7147	15168	14457	11850

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
7059	6728	5515	12214	11642	9542

Urban Street



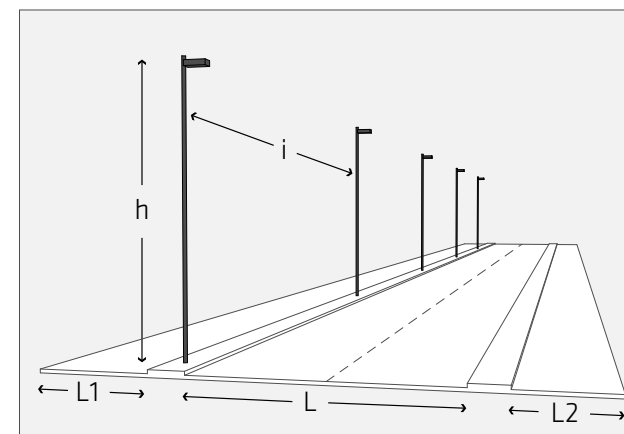
XSPB - Double mod - 4000K - Q4=56W				
h = 8m	i = 30m	L = 8m	L1 = 2m	L2 = 2m

Complying with the following lighting classes:

ME4a street	Lm(cd/m²)	Uo	Ul	Tl	SR
S3 L1	Em(LUX) 8.17	Emin(LUX) 3.99			
S3 L2	Em(LUX) 8.19	Emin(LUX) 6.29			

Maintenance coefficient: 0.9

Urban Street



XSPB - Double mod - 4000K - Q3=53W				
h = 8m	i = 30m	L = 8m	L1 = 2m	L2 = 2m

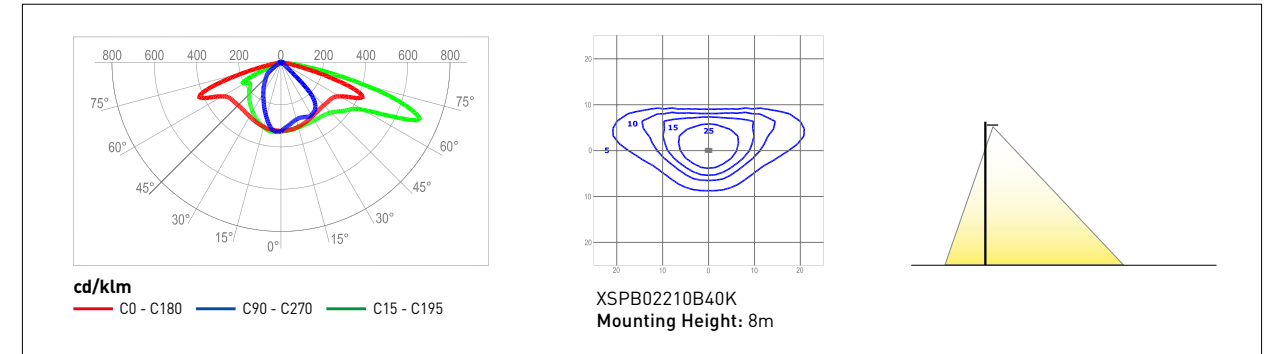
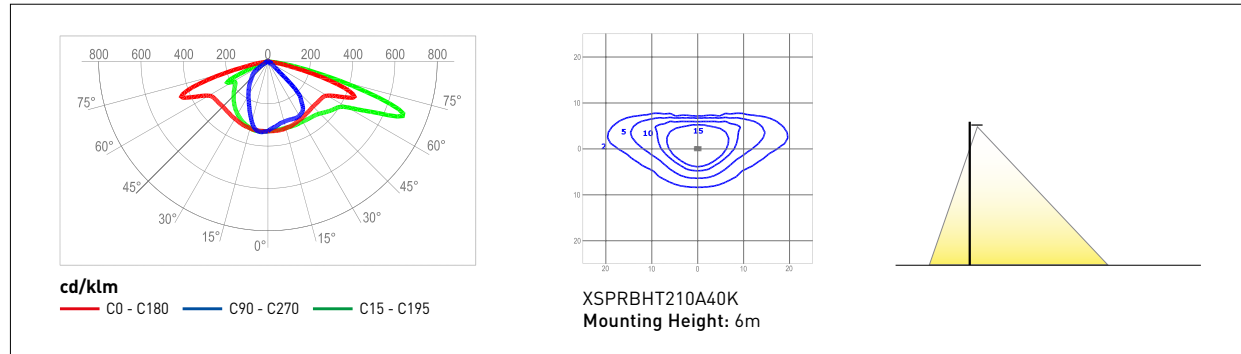
Complying with the following lighting classes:

ME4a street	Lm(cd/m²)	Uo	Ul	Tl	SR
S3 L1	Em(LUX) 9.95	Emin(LUX) 2.37			
S3 L2	Em(LUX) 7.76	Emin(LUX) 4.01			

Maintenance coefficient: 0.9

210 (Type II Short 1.0)

Asymmetric optic for street lighting



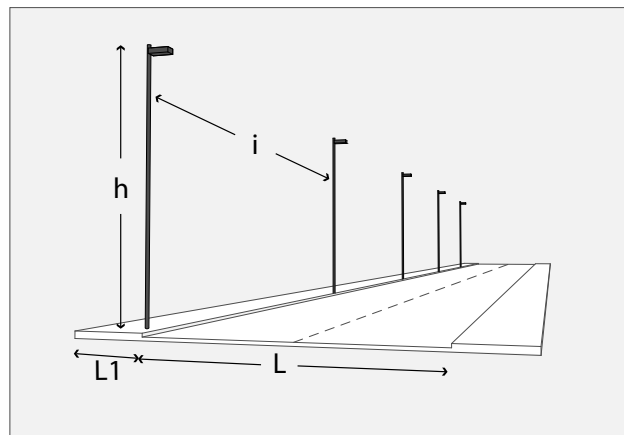
Effective flux (lm) with optic 210 - Cree XSPR Series

A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
5378	5126	4202	4139	3945	3234

Effective flux (lm) with optic 210 - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5402	5149	4220	10804	10298	8441

Urban Road



Maintenance coefficient: 0.9

Input Power A - 4000K - Q2=22W			
h = 8m	i = 37m	L = 8m	L1 = 3.5m

Complying with the following lighting classes:

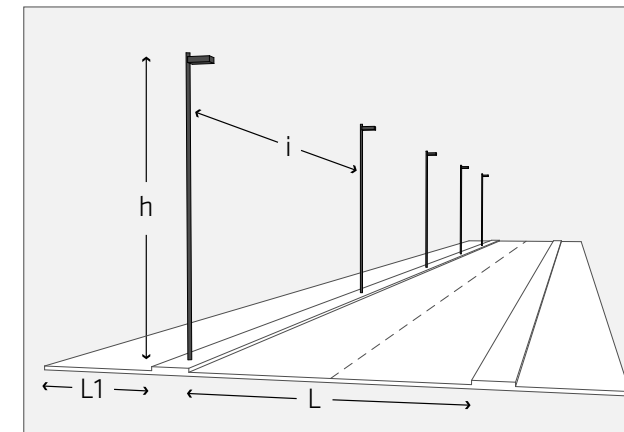
ME6 street	Lm(cd/m²)	Uo	Ut	Tl	SR
S5 L1	0.30	0.40	0.69	14	0.51
	Em(LUX)	Emin(LUX)			
	3.17	0.66			

Effective flux (lm) with optic 210 - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8829	8416	6898	14640	13954	11438

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
6814	6494	5323	11790	11237	9211

Urban Street



Maintenance coefficient: 0.9

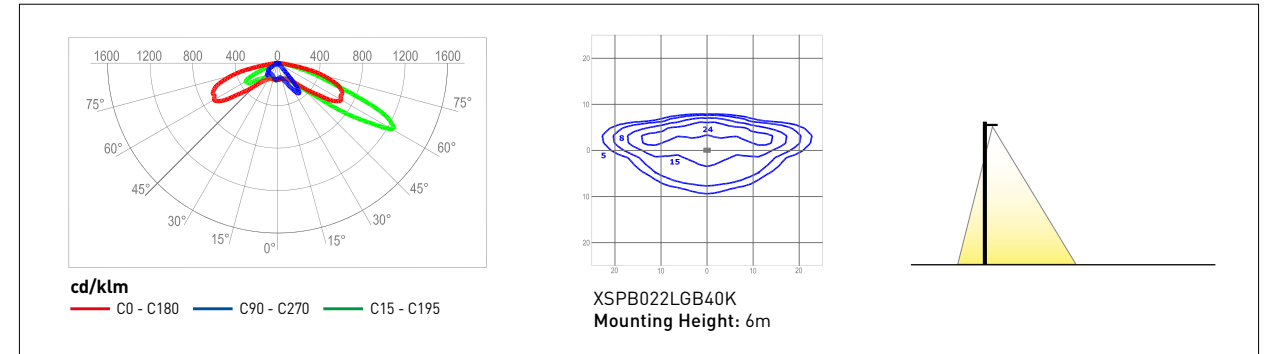
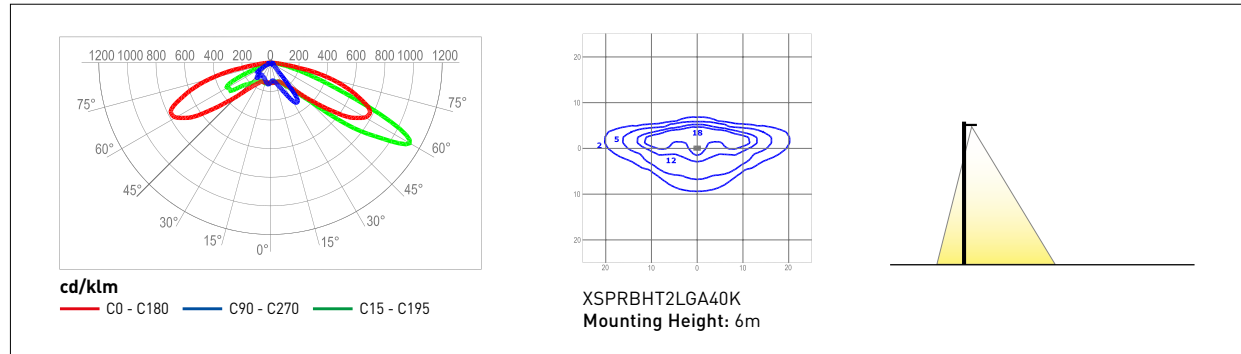
XSPB - Double mod - 4000K - Q5=65W			
h = 8m	i = 30m	L = 8m	L1 = 3.5m

Complying with the following lighting classes:

ME3a street	Lm(cd/m²)	Uo	Ut	Tl	SR
S2 L1	1.08	0.40	0.74	15	0.50
	Em(LUX)	Emin(LUX)			
	11	4.01			

2LG (Type II Long)

Asymmetric optic for street lighting



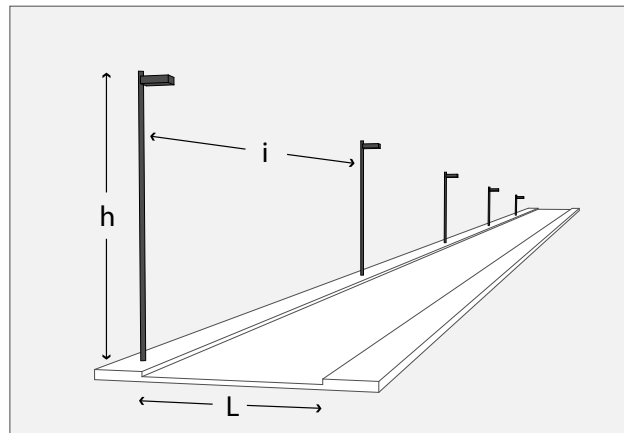
Effective flux (lm) with optic 2LG - Cree XSPR Series

A - 54W			B - 42W		
5700K	4000K	3000K	5700K	4000K	3000K
5056	4819	3950	3891	3709	3040

Effective flux (lm) with optic 2LG - Cree XSP B Series

A - 52W			B - 101W		
5700K	4000K	3000K	5700K	4000K	3000K
5438	5183	4249	10876	10366	8497

Cycle lane



Maintenance coefficient: 0.9

Input Power A - 4000K - Q1=17W		
h = 5m	i = 31m	L = 3m

Complying with the following lighting classes:

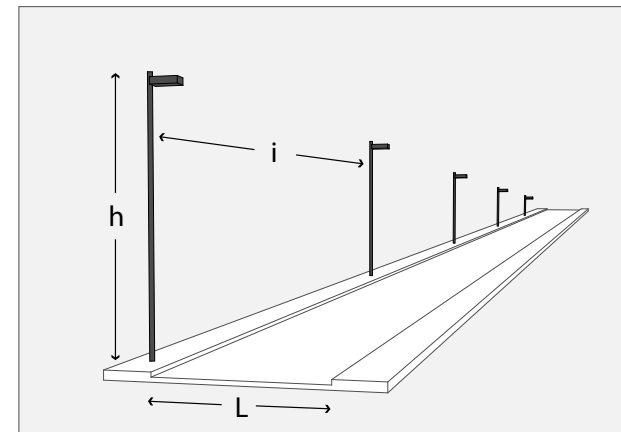
S3 cycle lane	Em(LUX)	Emin(LUX)
	7.68	2.02

Effective flux (lm) with optic 2LG - Cree XSP C Series

E - 98W			F - 136W		
5700K	4000K	3000K	5700K	4000K	3000K
8888	8472	6944	14738	14047	11514

H - 67W			I - 118W		
5700K	4000K	3000K	5700K	4000K	3000K
6859	6538	5359	11868	11312	9272

Cycle lane



Maintenance coefficient: 0.9

XSPB - Single mod - Input Power A - 4000K - Q4=29W		
h = 5m	i = 28m	L = 3m

Complying with the following lighting classes:

S1 cycle lane	Em(LUX)	Emin(LUX)
	15.75	6.32



CONTROL SYSTEMS

Solutions to control light

Lighting control is the ability to manually or automatically turn lighting on/off or change the brightness level to respond to the environment, tasks or desired effects.

Solid state light technology offers the ability to regulate luminous flux to provide both energy savings and the rational management of lighting systems. Outdoor lighting systems though form part of more complex systems that provide additional services for the urban environment.

From this point of view, we can consider lighting networks as genuine data transmission networks. Thanks to the use of remote management systems, in addition to simply housing the lighting fixtures, the supports will form an integral part of a data transmission and reception network providing additional services (CCTV, wi-fi, etc.). LED technology is able to properly meet the requirements of a lighting system with integrated communication services.

With this in mind, Cree offers a unique and complete range of technologically-advanced products for intelligent light control. These products are able to provide flexible reductions in the power consumption of lighting systems in order to improve efficiency based on each client's requirements.

The efficiency of a good public lighting system can be achieved via the correct management of switching on, switching off and controlling lighting levels. Combining energy savings with the requirements set out in regional legislation against light pollution and standard UNI 11248 leads to a single solution: regulating the flux emitted by fixtures. According to UNI 11248, luminous flux can be reduced by 25% or 50% when traffic levels have decreased by 50% or 75% respectively with respect to a determined peak value, for a further energy saving of 30% to 60%.

Cree provides its clients with a complete range of products offering the highest levels of efficiency and reliability for light control.

1-10V - Dimmable Driver

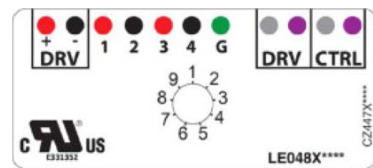
Cree offers a simple system for controlling the light emitted by LEDs via a 1-10 V interface using an external control (not provided), very common in ordinary systems. The different operating conditions available can be regulated to achieve the best balance between LED expected lifetime, light emission and energy savings, based on the system to be created. The system allows for the control of luminous flux in relation to the real lighting requirements based on timetables or installation requirements.

Option code	Model
D	Ledway / 304 Series
DIM	XSP / OSQ Series
Y	CPY / Edge H0 Series

Field Adjustable Output

The Field Adjustable Output option enables the street and area luminaire within the XSP, OSQ and Ledway Series to be tuned to the exact light emission needs of a particular application through multiple levels of adjustment, directly on field.

Through the selection of nine (XSP1 or XSP2) or seven (XSPR) levels of adjustment, the Field Adjustable Output option offers maximum flexibility to best meet a variety of applications using a single luminaire.



Label infographic

XSP1 - Version B

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator A	
Q9 (Factory Set)	52	1.00
Q8	48	0.91
Q7	43	0.86
Q6	38	0.77
Q5	34	0.70
Q4	29	0.61
Q3	27	0.52
Q2	19	0.40
Q1	15	0.29

XSP2 - Version B

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator B	
Q9 (Factory Set)	101	1.00
Q8	91	0.91
Q7	83	0.86
Q6	73	0.77
Q5	65	0.70
Q4	56	0.61
Q3	53	0.52
Q2	37	0.40
Q1	29	0.29

XSPR - Version B

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator A	
Q9 (Factory Set)	54	1.00
Q8	54	1.00
Q7	48	0.94
Q6	42	0.85
Q5	38	0.77
Q4	32	0.68
Q3	27	0.59
Q2	22	0.49
Q1	17	0.36

XSP1 - Version C

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator E	
Q9 (Factory Set)	98	1.00
Q8	92	0.97
Q7	89	0.94
Q6	84	0.91
Q5	80	0.86
Q4	73	0.81
Q3	67	0.75
Q2	59	0.57
Q1	53	0.61

XSP2 - Version C

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator F	
Q9 (Factory Set)	136	1.00
Q8	130	0.97
Q7	126	0.94
Q6	118	0.91
Q5	113	0.86
Q4	103	0.81
Q3	94	0.75
Q2	84	0.67
Q1	74	0.61

OSQ Series- Input Power Designators A & J

Option code	System Watts 220-240V		Lumen Multipliers
	Input Power Designator A	Input Power Designator J	
Q9 (Factory Set)	112	168	1.00
Q8	107	160	0.98
Q7	101	152	0.94
Q6	96	143	0.91
Q5	87	131	0.85
Q4	79	120	0.80
Q3	71	108	0.73
Q2	64	96	0.68
Q1	56	84	0.51

OSQ Series - Input Power Designators S

Option code	System Watts 220-240V	Lumen Multipliers
	Input Power Designator S	
Q9 (Factory Set)	223	1.00
Q8	213	0.98
Q7	202	0.94
Q6	191	0.91
Q5	175	0.85
Q4	160	0.80
Q3	144	0.73
Q2	128	0.68
Q1	112	0.51

Ledway Series

Option code	(mA)	Lumen Multipliers
Q9 (Factory Set)	700	1.00
Q8	650	0.96
Q7	625	0.91
Q6	575	0.84
Q5	550	0.80
Q4	525	0.79
Q3	475	0.70
Q2	425	0.63
Q1	350	0.56

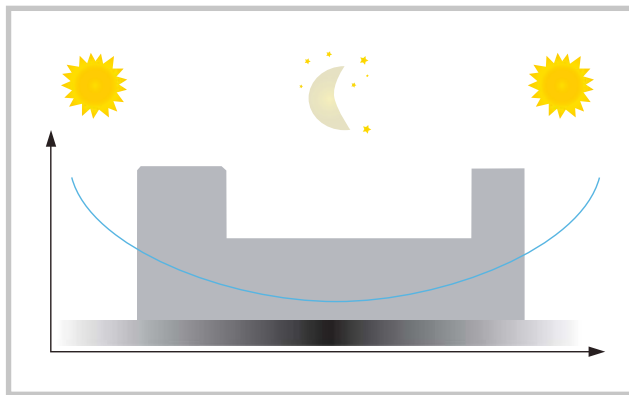
Virtual Midnight

This stand-alone system has the advantage of not requiring additional wiring. It is very easy to install and highly reliable: the regulation follows preset steps and the results in terms of energy savings are optimum because the device updates itself automatically based on the system's switching on and switching off times.

The reduction in luminous flux is achieved via a self-learning process performed by the fixture. Based on the previous switching on and switching off times, the device determines a hypothetical virtual midnight value. This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The virtual midnight then becomes the point of reference for light emission reduction according to the specified profile.

In detail every lighting fixture can be equipped with a device that regulates the fixture between two preset power levels based on the "virtual midnight" calculation. This device is built into the fixture and does not require any control cable or any extra operation on the system by the installation technician.

A micro-processor calculates the desired switching time based on the virtual midnight value. The factory settings are 3 hours before and 4 hours after the virtual midnight, but the settings can be modified to suit the client's particular needs. We can set up a regulation profile with up to 5 different levels, so that the luminous flux can be varied more accurately, thus giving very flexible control.



Ledway Series

Option code	HL (mA)	LL (mA)
S1	525	175
S2	525	350
S3	350	175
S4	700	350
S5	700	525
S6	700	175

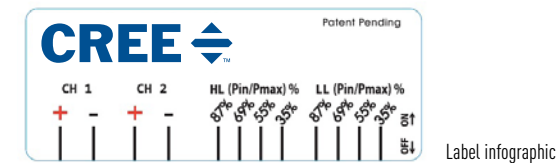
Reprogrammable Virtual Midnight

This stand-alone system has the advantage of not requiring additional wiring. It is very easy to install and highly reliable: the regulation follows preset steps and the results in terms of energy savings are optimum because the device updates itself automatically based on the system's switching on and switching off times.

The reduction in luminous flux is achieved via a self-learning process performed by the fixture. Based on the previous switching on and switching off times, the device determines a hypothetical virtual midnight value. This is the average value between the time the fixture is switched on (sunset) and switched off (sunrise). The virtual midnight then becomes the point of reference for light emission reduction according to the specified profile.

In detail every lighting fixture can be equipped with a device that regulates the fixture between two preset power levels (high-low mode) based on the "virtual midnight" calculation. This device is built into the fixture and does not require any control cable or any extra operation on the system by the installation technician.

A micro-processor calculates the desired switching time based on the virtual midnight value. The factory settings are 3 hours before and 4 hours after the virtual midnight, but the device for the luminous flux regulation can be re-programmed even after the fixture being installed. Through a simple sequence of switching on and switching off, it is possible to programme the fixture based on specific needs of desired switching time and dimming.



Ledway Series

Option code	HL (mA)	LL (mA)
T1	525	175
T2	525	350
T3	350	175
T4	700	350
T5	700	525
T6	700	175

Input Power mA	Power System multiplier	Lumen multiplier
700	1,00	1,00
525	0,74	0,82
350	0,48	0,59
175	0,24	0,32

XSP1 and XSP2 Series - Version B

Option code	HL (%)	LL (%)
A1	100	75
A2	100	50
A3	100	25
A4	75	50
A5	75	25
A6	50	25
B1	87	69
B2	87	55
B3	87	35
B4	69	55
B5	69	35
B6	55	35

Levels	Power System multiplier	Lumen multiplier
100%	1,00	1,00
75%	0,75	0,80
50%	0,50	0,55
25%	0,25	0,25
87%	0,87	0,90
69%	0,69	0,75
55%	0,55	0,61
35%	0,35	0,38

XSP1 and XSP2 Series - Version C

Option code	HL (%)	LL (%)
Y1	100	75
Y2	100	50
Y3	100	25
Y4	75	50
Y5	75	25
Y6	50	25
Z1	87	69
Z2	87	55
Z3	87	35
Z4	69	55
Z5	69	35
Z6	55	35

Levels	Power System multiplier	Lumen multiplier
100%	1,00	1,00
75%	0,75	0,80
50%	0,50	0,55
25%	0,25	0,25
87%	0,87	0,90
69%	0,69	0,75
55%	0,55	0,61
35%	0,35	0,38

XSPR Series - Version B

Option code	HL (%)	LL (%)
C1	100	75
C2	100	50
C3	100	33
C4	75	50
C5	75	33
C6	50	33
D1	87	69
D2	87	55
D3	87	33
D4	69	55
D5	69	33
D6	55	33

Levels	Power System multiplier	Lumen multiplier
100%	1,00	1,00
75%	0,75	0,80
50%	0,50	0,55
25%	0,25	0,25
87%	0,87	0,90
69%	0,69	0,75
55%	0,55	0,61
35%	0,35	0,38

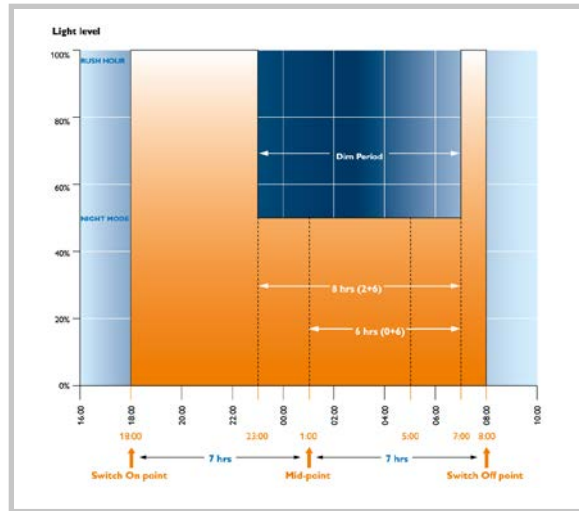
Lumistep

The Lumistep is a stand-alone system, a basic version of Virtual Midnight. Through the first few cycles of switching on and switching off, the device determines a hypothetical virtual midnight value.

Based on this value the system regulates the fixture to the low level of dimming (default set to 50% power).

It allows the choice of two different dimming profiles:

- Period dimming of 6hr (0 + 6)
Start dimming time at 'midnight'
- Period of dimming 8hr (2 + 6)
Start dimming time 2hrs before midnight

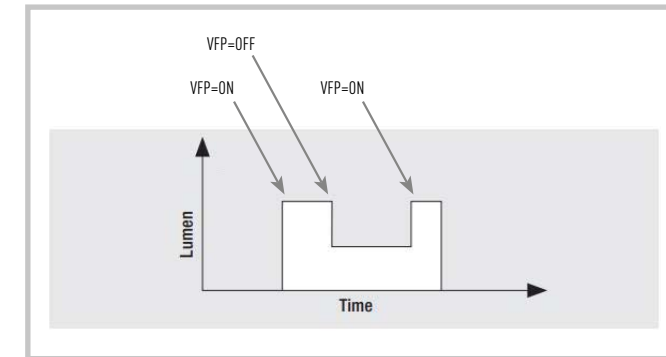


Bi-Level Option - LineSwitch

The bi-level option allows the fixture to operate at two distinct power levels (Low/High mode) via the use of an additional power cable.

In the same way, the LineSwitch is a one-step-dimming solution integrated in the driver, which enables users to dim (to a predefined level) groups of light points, with only one push of a button. The LineSwitch feature too works by using the pilot line extra wire.

The benefit provided by these two options is the flexibility to dim up and down at any point – with no timing constraint.



XSP1 - Version C

Option code	HL (%)	LL (%)
L68	100	51
L58	88	45
L48	79	40
L38	67	33
L28	55	33
L18	43	33
L66	100	51
L56	88	45
L46	79	40
L36	67	33
L26	55	33
L16	43	33

XSP2 - Version C

Option code	HL (%)	LL (%)
L68	100	51
L58	97	49
L48	89	45
L38	81	41
L28	72	35
L18	64	32
L66	100	51
L56	97	49
L46	89	45
L36	81	41
L26	72	35
L16	64	32

Ledway Series

Option code	HL (mA)	LL (mA)
G	700	175
GH	525	175
GM	525	350
GL	350	175
GN	700	350
GP	700	525

XSP1 / XSP2 - Version C

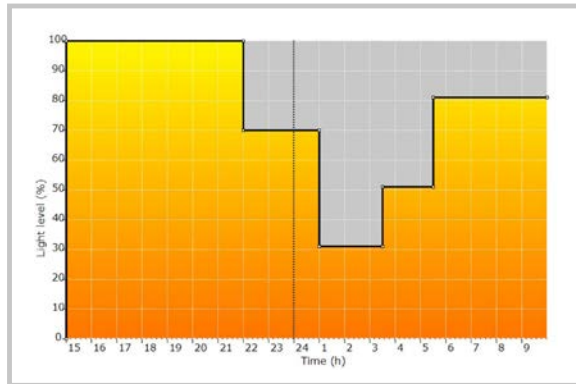
Option code	HL (%)	LL (%)
G6	100	51
G5	88	45
G4	79	40
G3	67	33
G2	55	33
G1	43	33

Last number of option code indicates hours time setting (6/8 hrs.).

DynaDimmer

The DynaDimmer is a control system for the lighting fixtures regulation. We can set up a regulation profile with up to 5 different levels, based on the virtual midnight, calculated automatically by the device in the first 3 days of operation.

XSPR Series



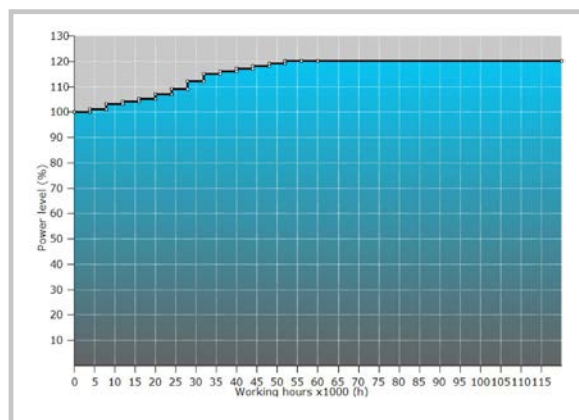
Option	HL (%)	LL (%)
DY1	100	54
DY2	93	46
DY3	78	39
DY4	66	39
DY5	54	39
DY6	100	78
DY7	100	39
DY8	78	54

CLO - Constant Lumen Output

The CLO is not a true control system but it could be defined more as a self-regulating system. The task of the CLO is to fight the natural decay of the LEDs' light output.

Through a gradual rise in current, previously scheduled, it tries to maintain the luminous flux constant and over a certain threshold level.

The precise programming of the CLO may be influenced by details of the lighting system under study like operating conditions, minimum luminous flux possible and any other key factor for the specific application.



XSP and XSPR Series

Option code	Description
CLO	CONSTANT LUMEN OUTPUT

Available only with input power B = 41W

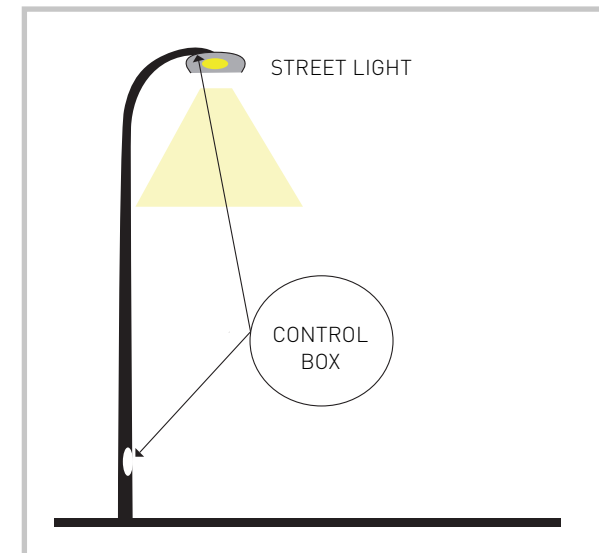
Power-Line Communication System (PLC)

The Power-Line Communication system (PLC) is a system for the transmission of data via an electrical network. It offers totally flexible control of lighting systems: the on/off times can be set as desired, even per individual light. These systems also allow feedback from fixture components to be assessed remotely (operating hours, electrical parameters, etc.). In addition, there is always power available at the light so it is possible to install dedicated devices (e.g. video cameras, sensors, etc.) to provide additional services in urban and extra-urban areas.

Cree uses power line technology for management of luminous flux of dimmable LED luminaires. The fixtures employ a dimmable electronic driver and control module which dialogs directly with the driver both to monitor its status and functions, and to regulate the power current and thus the fixture's output.

In this way the energy savings can be pushed to the maximum, whilst still maintaining the possibility to instantly modify the settings, thus providing significant savings in terms of system maintenance.

No additional infrastructure is needed; all communication is done via the standard main power lines.



Ledway Series

Option code	Description
D#	DIMMABLE POWER LINE COMMUNICATION 700 mA

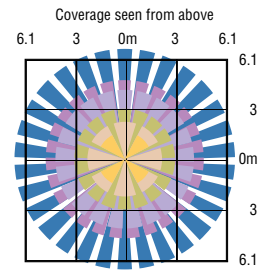
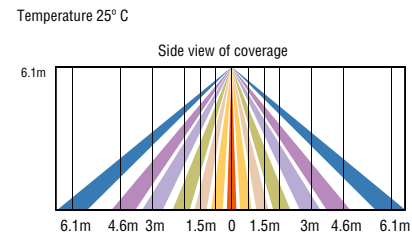
Light Control with Occupancy Sensor

This system is based on an occupancy sensor that can be programmed to operate within set times, which allows the system to be switched off or dimmed when no motion is detected.

The system can also be calibrated in relation to the ambient light, so that it can inhibit switching on or moving to high power mode depending on the pre-set illumination threshold. Based on the installation height and required coverage, three types of lens are available.

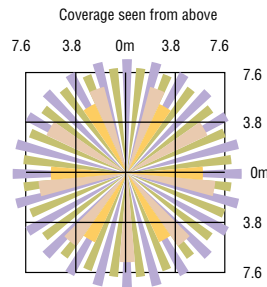
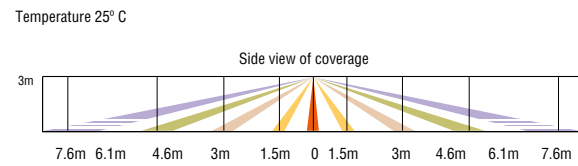
Lens 1

For installation heights from 3m to 9.1m. Coverage radius equal to installation height.



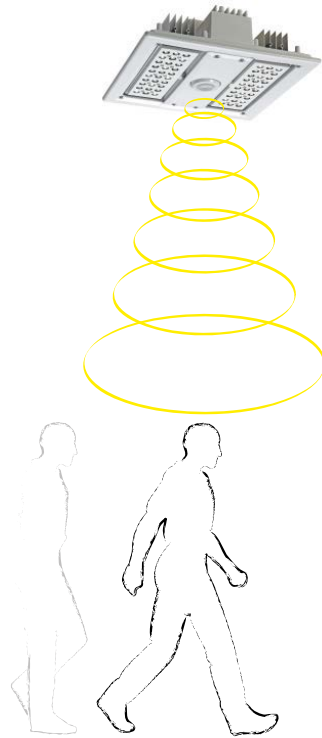
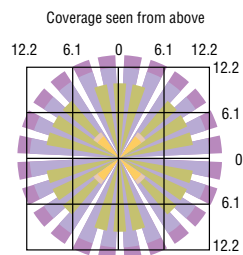
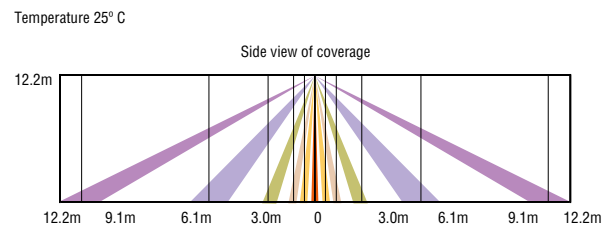
Lens 2

For installation heights from 3m to 4.6m. Coverage radius equal to 2.5 times the installation height.



Lens 3

For installation heights from 6m to 12.2m. Coverage radius equal to installation height.



Ledway, CPY and 304 Series

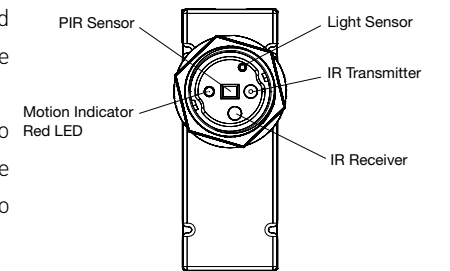
Option code	LL (mA)	HL (mA)
K	175	700
KC	175	525
KN	75	525
KD	75	700
KL	175	350
KP	75	350
KT	275	700

CPY has limited drive current to 625mA for setting HL.

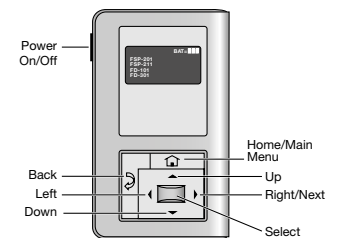
Light Control with Occupancy Sensor with Remote Control

The motion sensor provided with E option dims lighting from high to low based on movement. This slim, low-profile sensor is designed for installation inside the bottom of a light fixture body.

The sensor uses passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Once the sensor stops detecting movement and the time delay elapses, lights will go from high to low mode and eventually to an off position if it is desired.

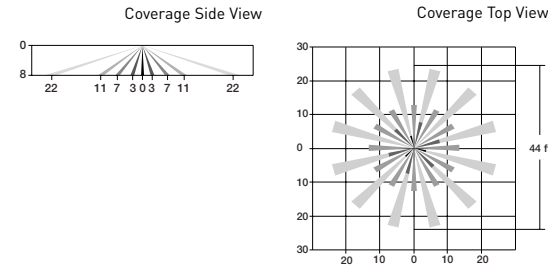


Within a certain mounting height of the sensor, the remote control allows modification of the system without requiring ladders or tools, simply with a touch of a few buttons. The transceiver allows bi-directional communication between the device and the commissioning tool. Simple menu screens let you see the current status of the sensor and make changes. It can change device parameters such as high/low mode, sensitivity, time delay, cut off and more.



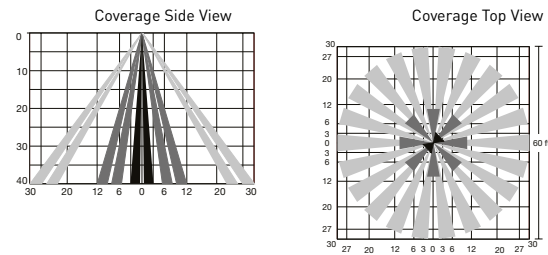
Lens 1

For installation heights of maximum 2.4m. Coverage diameter equal to 2.75 times the installation height.



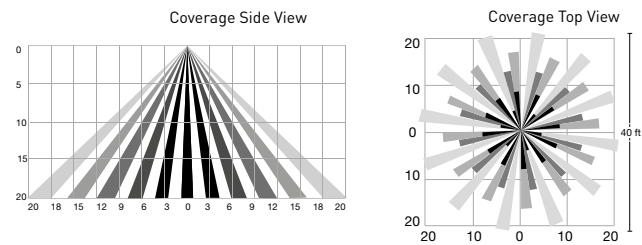
Lens 2

For installation heights from 9m to 12m. Coverage diameter equal to 0.75 times the installation height.



Lens 3

For installation heights from 3m to 9m. Coverage diameter equal to installation height.



CPY and 304 Series

Option code	Description
E	OCCUPANCY SENSOR WITH REMOTE CONTROL

DALI Protocol

Enabled by the DALI Standard, dimmable ballasts, transformers, relay modules, emergency fittings and controllers from different manufacturers can be mixed and matched into a single control system, permitting technicians and end-users to take advantage of a flexible digital lighting system with security of supply from many sources. DALI provides almost unlimited scalability of lighting control systems, is cost-effective through energy-savings and is easy to manage.

DALI lighting systems are easy to operate and provide a high degree of convenience. On a basic function, all connected devices can be controlled simultaneously by broadcast commands, or on a more sophisticated level they can be configured flexibly for task-related lighting scenes, using daylight or occupancy sensors or time controls.

XSP - Version C

Option code	Description
DL	DALI Protocol

WS Series

Option code	Description
D	DALI Protocol

Nema Socket

The Cree NEMA® 7-pin receptacle is a two-piece rotational receptacle with seven conductors. It can be used with an ANSI C136.10 compliant photocell or shorting cap (by others), or an ANSI C136.41 compatible control system module (by others).

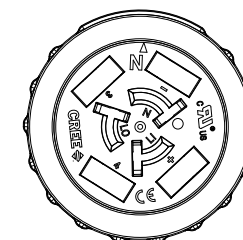
The Cree NEMA® 7-pin receptacle with its "Tool-Less" entry is ideal for your next generation Smart City solution. The receptacle is constructed of durable polycarbonate, and features dual molded-in elastomeric gaskets on the base of the component to prevent water ingress into the housing of the luminaire.

The Cree NEMA® 7-pin receptacle can be associated with the following configuration option.

The receptacle is not sold separately.

XSP Series - Version C – Class I Luminaires

Option code	Description	Notes
NEM	Nema 7 pin + DIM 1-10V	DIM 1-10V goes on the NEMA Socket
NQ#	Nema 7 pin + Q# option	# = 1 - 9 (1-10V goes on the Field Adj)
NY#	Nema 7 pin + Y# option	# = 1 - 6 (1-10V goes on the Virtual)
NZ#	Nema 7 pin + Z# option	# = 1 - 6 (1-10V goes on the Virtual)
NDL	Nema 7 pin + DALI	DALI wires go on the NEMA
NCL	Nema 7 pin + CLO	No control on the NEMA

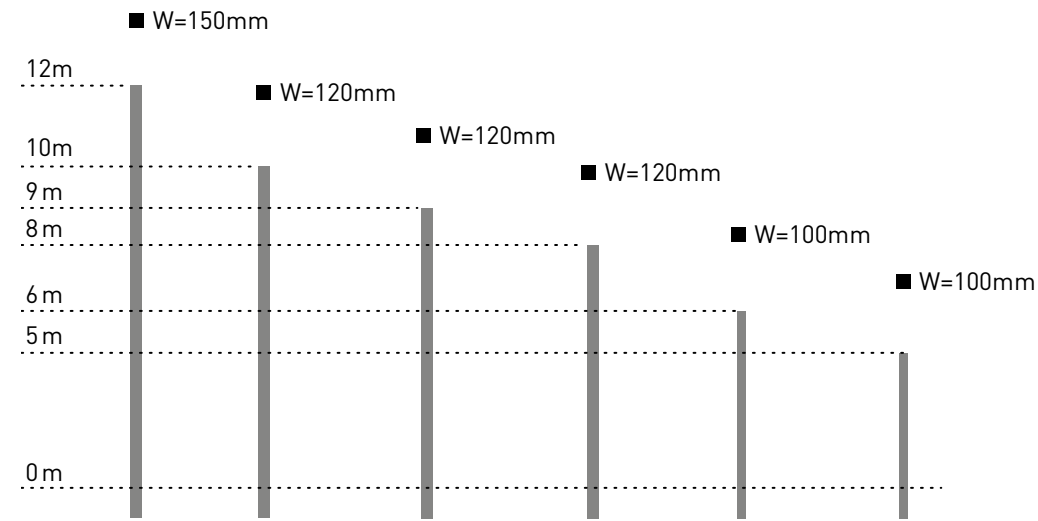


POLES AND ACCESSORIES



Configurations of Pole-top Products

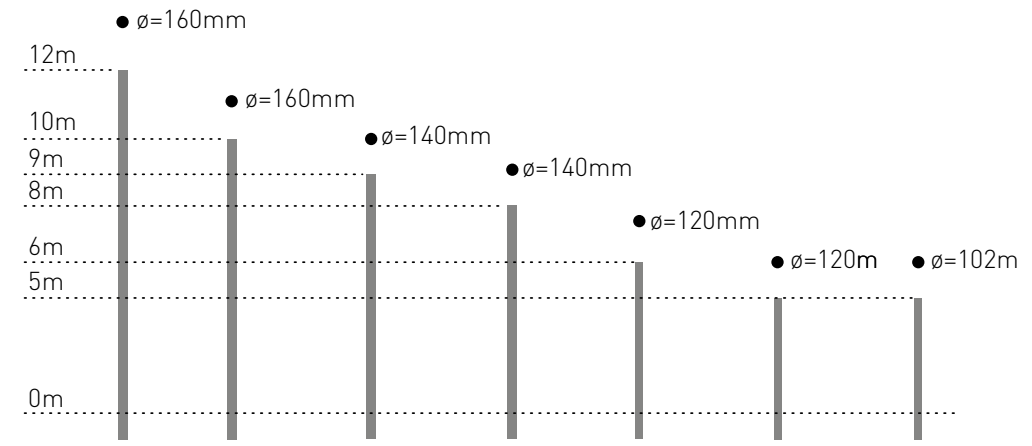
Square poles



■	L=150 hft=12m thickness=4mm	L=120 hft=10m thickness=4mm	L=120 hft=9m thickness=4mm	L=120 hft=8m thickness=4mm	L=100 hft=6m thickness=3mm	L=100 hft=5m thickness=3mm
■	PS412/150/S1/*	PS410/120/S1/*	PS409/120/S1/*	PS408/120/S1/*	PS306/100/S1/*	PS305/100/S1/*
■	PS412/150/S2/*	PS410/120/S2/*	PS409/120/S2/*	PS408/120/S2/*	PS306/100/S2/*	PS305/100/S2/*
■	PS412/150/T/*	PS410/120/T/*	PS409/120/T/*	PS408/120/T/*	PS306/100/T/*	PS305/100/T/*
■	PS412/150/T7/*	PS410/120/T7/*	PS409/120/T7/*	PS408/120/T7/*	PS306/100/T7/*	PS305/100/T7/*

*colour T7 - reduction dia. 70mm for fixtures with central pole top and light beams

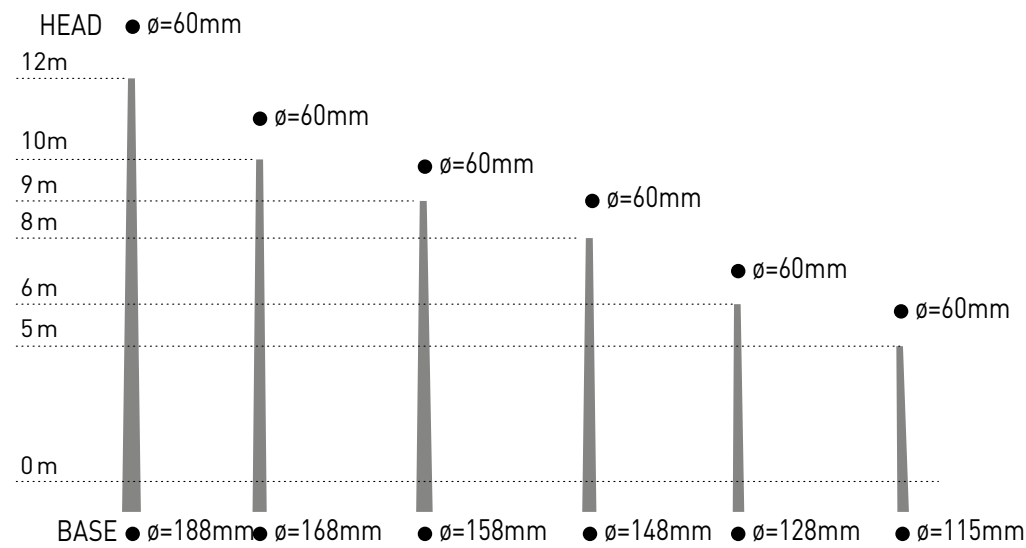
Cylindrical poles



●	ø=160 hft=12m thickness=4mm	ø=160 hft=10m thickness=4mm	ø=140 hft=9m thickness=4mm	ø=140 hft=8m thickness=4mm	ø=120 hft=6m thickness=3mm	ø=120 hft=5m thickness=3mm	ø=102 hft=5m thickness=3mm
●	PC412/160/L1/*	PC410/160/L1/*	PC409/140/L1/*	PC408/140/L1/*	PC306/120/L1/*	PC305/120/L1/*	PC305/102/L1/*
●	PC412/160/L2/*	PC410/160/L2/*	PC409/140/L2/*	PC408/140/L2/*	PC306/120/L2/*	PC305/120/L2/*	PC305/102/L2/*
●	PC412/160/T/*	PC410/160/T/*	PC409/140/T/*	PC408/140/T/*	PC306/120/T/*	PC305/120/T/*	PC305/102/T/*
●	PC412/160/T7/*	PC410/160/T7/*	PC409/140/T7/*	PC408/140/T7/*	PC306/120/T7/*	PC305/120/T7/*	PC305/102/T7/*

*colour T7 - reduction dia. 70mm for fixtures with central pole top and light beams

Conical poles



●	T/B ø = 60/180 hft = 12m thickness = 4mm	T/B ø = 60/168 hft = 10m thickness = 4mm	T/B ø = 60/158 hft = 9m thickness = 4mm	T/B ø = 60/148 hft = 8m thickness = 4mm	T/B ø = 60/128 hft = 6m thickness = 3mm	T/B ø = 60/115 hft = 5m thickness = 3mm
●	CP412/188-60/*	CP410/168-60/*	CP409/158-60/*	CP408/148-60/*	CP306/128-60/*	CP305/115-60/*

*colour Consult the factory for available configurations

Terminal boards and access flaps

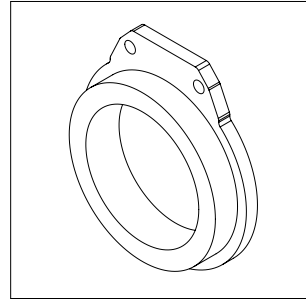
Code	Description
PSMR2/ *	terminal board and access flap for square poles
PCMRR#/ *	Reset model terminal board and flush access flap for cylindrical and conical poles

In-ground poles: in-ground poles are supplied with three standard extra options: cable inlet slot, grounding tab and terminal board slot. The terminal board and access flap must be ordered separately.

Poles with anchoring plate and bolts: available on request.

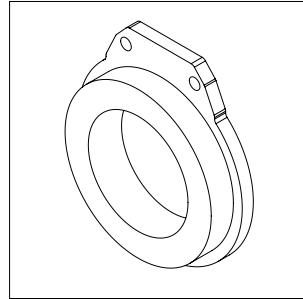
Accessories

Adapter kits for Cree XSP Series



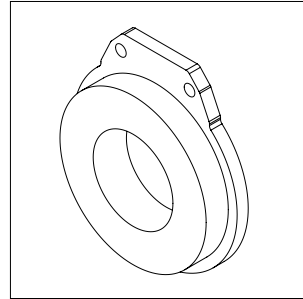
KIT-XSP-AP60-48-G0

Adapter kit for $\varnothing=48\text{mm}$ pole



KIT-XSP-AP60-42-G0

Adapter kit for $\varnothing=42\text{mm}$ pole



KIT-XSP-AP60-34-G0

Adapter kit for $\varnothing=34\text{mm}$ pole

Adapter kits for Cree Ledway Road and XSPR



KIT ADATT.PALO 34MM

Adapter kit for $\varnothing=34\text{mm}$ pole



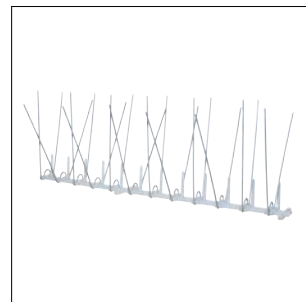
KIT ADATT.PALO 42MM

Adapter kit for $\varnothing=42\text{mm}$ pole



KIT ADATT.PALO 48MM

Adapter kit for $\varnothing=48\text{mm}$ pole



BRDSPK

Bird Spikes

XA-BRDSPKXAK12

Bird Spikes (EHO models only for 120 LED luminaires)

XA-BRDSPKXAK24

Bird Spikes (EHO models only for 240 LED luminaires)

Cree Ledway Multi mounting M



PM-MLW

Mounting for ceiling application and configuration for busway mounting (M6 screws) 20 - 60 LEDs

PM-MLLW

Mounting for ceiling application and configuration for busway application (M6 screws) 80 - 120 LEDs



PM-WLW

Mounting 4M for wall-mounted applications 180°



PM-WLW

Mounting for wall-mounted application 90° (standard)

Cree Ledway E-Tunnel mounting T



PM-TOLW

Fixed orientation 0°

Accessories for Cree CXB Series



DL16
406mm Acrylic Clear
Prismatic Drop Lens



CL16
406mm Acrylic Clear
Bottom Lens

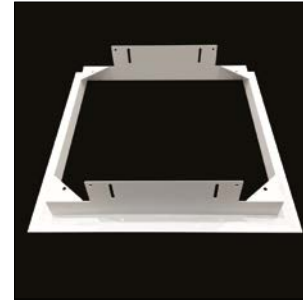


WG-A
Wire Guard for Aluminium
Reflector

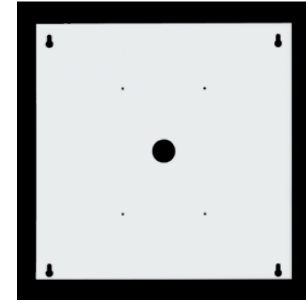


WG-AP
Wire Guard for Acrylic
Reflector

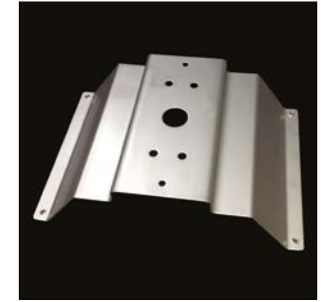
Accessories for Cree CPY250



RTF-RCS-A0-CPY
Retrofit kit for recessed
mounting

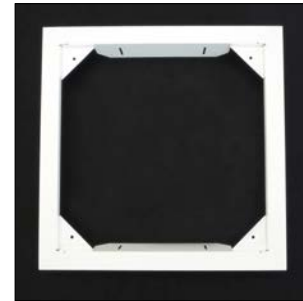


XA-BXCCBPW
Beauty plate
(available also with 305mm
or 406mm backer)



PM-BCPY-I-R0
Stainless steel kit for
surface/busway mounting

Accessory for Cree 304 mounting R



RTF-RCS-A1-304##
Installation frame



STREET LIGHTING
AND GLOSSARY

Street lighting

Reference Standards

Urban decor and street lighting systems are governed by the following standard:
- EN 13201 – 1-2-3-4

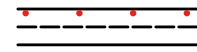
Guidelines for street lighting design

Indications for the correct positioning of lighting fixtures in relation to road types or special road sections.

Straight Roads

There are four basic types of installation for straight roads:

layout 1: unilateral



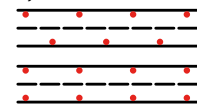
- Unilateral - layout 1: the light centers are positioned along the same side of the carriageway. This is the most economical layout (above all because it requires only a single power line) and is used above all for lighting narrow roads.

layout 2: road centre



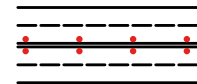
- Central - layout 2: the light centers are positioned along the center of the carriageway. This layout is used in towns or in places where the installation of poles is made difficult due to the presence of buildings on the roadside.

layout 3: bi-lateral



- Bilateral - layout 3: the light centers are arranged along the sides of the carriageway, either alternating or opposite one another. This solution is used for lighting very wide roads.

layout 4: central with two arms



- Central with double arms - layout 4: the light centers are arranged along the center of the traffic divider separating the two carriageways. This layout is the most economical solution for lighting very wide roads, thanks to the installation of a single pole for both fixtures and the use of a single power line.

layout 5: pedestrian paths

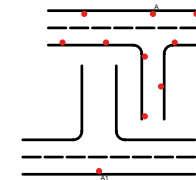


Pedestrian paths layout 5

The safety of pedestrians can be increased by the installation of dedicated lighting for pedestrian paths, reducing the number of accidents.

A light center should preferably be provided near zebra crossings.

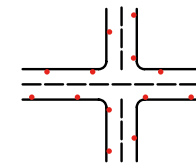
layout 6: T junction



Example of junctions

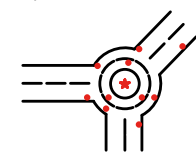
- T junctions - layout 6: we recommend positioning a light center opposite the oncoming traffic arriving at the junction.

layout 7: crossroads



- X junctions - layout 7: the ideal solution involves positioning a light center immediately after the junction for each lane. The feasibility of this solution should be verified based on the financial resources available for the entire system.

layout 8: roundabout



- Roundabout - layout 8: the arrangement of light centers around a roundabout is directly correlated to the internal radius of the same:

- dia. <3m: it is preferable to install light centers around the exterior of the roundabout.
- dia. >3m: it is preferable to install light centers in the center of the roundabout.

Glossary

BIN

Classification and grouping of LEDs based on determined parameters, e.g. luminous flux or color temperature. LEDs are sold in groups belonging to the same color area. These groups/selections are known as BINs.

Colour temperature

In lighting technology this is a value expressed in degrees Kelvin to indicate the color of emitted light. The values run from 1600K to 16000K. A low color temperature indicates a warm tone (tending to yellow-red). High values denote a cold tone (tending towards blue). Public lighting typically employs color temperatures of 4000K to 6000K.

Constant Current

A special current flow condition. The power supply provides the LEDs with a constant and continuous current, thus controlling the flux emitted.

CRI (Color Rendering Index)

This index provides information on how faithfully LEDs render the colors of lit objects. The value is obtained by comparing the LED with a suitable standard sample light source and recording the chromatic differences on a reference diagram when a certain number of sample tiles are lit (CIE 1964). The smaller the differences recorded, the better the general color rendering index (CRI) of the light source. Higher index values are better.

Cut-off angle

The angle at which the light source can no longer be seen directly.

Dimming

From the English verb "to dim": indicates the option of attenuating the luminous flux with an electronic controller which regulates the electrical power absorbed by a load.

Directive ROHS (Restriction of Hazardous Substances Directive)

Standard 2002/95/CE adopted by the European Community in February 2003. RoHS sets limits to the use of the following substances: lead, mercury, cadmium, hexavalent chrome, polybromide biphenyl (PBB) and polybromide diphenyl ether (PBDE).

Efficiency

This is one of the most important indicators of product quality. It expresses the quantity of light emitted by the fixture with respect to the quantity of light emitted by the source. It is indicated by a pure number less than 1. The closer the efficiency value is to 1, the better the quality of the fixture.

Electromagnetic spectrum

Frequency distribution of the chromatic components of light radiation.

Fixture efficiency (efficacy)

The ratio between the luminous flux emitted by the fixture and its overall power consumption, including the power supply system (lm/W).

Forward Voltage (V) (voltage drop at LED terminals)

This value expresses the voltage drop measured at the LED terminals. It is a fundamental parameter for defining the system's power uptake (W). This uptake (Forward Voltage X Current) is lower – and thereby better in terms of lower electricity costs - the lower the Forward Voltage. It is also useful to consider the maximum voltage drop (and not just the average value), in order to define the worst power consumption possible.

Illumination

The quantity of luminous flux that strikes a surface. It is measured in LUX (lx), equivalent to 1 lm/m².

Isolux curve

Defines the 'light at ground level' trend for a given installation height and displays the surface area lit by a determined fixture.

Junction temperature (T_j)

The temperature inside the LED at the junction. This is a critical parameter in evaluating the emitted flux and estimating the useful life of the LED. In order to correctly calculate the T_j, it is necessary to take into account the heat dissipation of the LED as in the following formula:

Power (W) = Vf (voltage drop at the LED terminals) x If (current)

T_j = T_{sp} + [(TR j-sp) X Power (W)]

Light intensity curve

These are normally expressed by polar or Cartesian diagrams. The graph shows the light intensity trend in the directions of the reference planes. In order to make comparisons between fixtures possible, the curve should not express absolute values but rather values in relation to a flux of 1000 lm.

This curve can be used to identify:

- The type of emission (extensive, semi-intensive, intensive, asymmetrical, direct, indirect, etc.)
- Maximum intensity and direction
- Light beam opening
- Point illumination (illumination values in a determined direction and at a determined distance according to the formula $E = I/d^2$)

Light beam opening angle

Indicates the angle at which the light intensity is half the maximum intensity and allows the fixture's light distribution to be assessed.

Lumen Maintenance (L70)

LEDs act as energy transducers, transforming electrical energy (W) into light (lumens). In doing this, heat is generated inside the LEDs. As with most electrical systems, this heat must be disposed of in order to ensure correct operation. To date, the parameter most commonly used to express the life of LEDs is the Lumen Maintenance Factor (L70). This figure defines the estimated time in hours within which the performance, in terms of flux emitted, remains above 70% of the initial value.

L70 is estimated based on different parameters, the most important of which is the

temperature at which the LED junction is required to operate.

At an international level, parameters L80 and L90 referring respectively to 80% and 90% of the initial flux value are also adopted.

Luminance

Quantity of light emitted or reflected from a primary or secondary light source in the direction of observation; also considers the apparent surface area and the nature of the source. It is measured in candelas per square meter (cd/m²).

Luminous efficacy of LEDs

The ratio between the luminous flux emitted by the LED and its power consumption (lm/W).

Luminous flux

This value expresses the quantity of energy emitted by a light source in the form of visible radiation. It is measured in lumens (lm).

This is a fundamental parameter in that it indicates the quantity of light emitted by the LED (lm). In order to be able to size the final product correctly, it is essential to provide evidence of the minimum flux at 350mA and refer to specific color temperatures (e.g.: cold, neutral and warm white). Driving currents greater than 350 mA provide lower levels of luminous efficacy.

By increasing the current there is an increase in the flux emitted. At 350mA, the current level at which minimum lumen levels are usually expressed, the emitted flux is equal to 100%. Bringing the current up to 1000mA generates a flux of approximately 250% of the original value.

Luminous intensity

The quantity of light directed towards a determined point. It is measured in candelas (cd).

Maintenance Factor

This parameter assesses the maintenance requirements of a system on a scale of 0 to 1, where 0 indicates a greater need for maintenance and 1 a lesser need. The maintenance factor of a lighting fixture depends on its IP protection level, the type of light source used and the level of pollution and dirt in the area where the fixture is installed.

MTBE

In most LED applications, the power supply is required to be very reliable. This reliability can be estimated with the MTBF -Mean Time Between Failure. The MTBF represents a typical measurement of failure tolerance and consists of calculating the average time between two system crashes. This value is influenced by the quality of the components used and the attention paid during the design/manufacturing stages. The MTBF is calculated based on a statistic gained from the operating hours of the largest possible number of fixtures. It can also be calculated using various calculation methods such as that used in Standard EN/IEC 61709 or that used in American Standard MIL-HDBK-217F. The higher the MTBF value, expressed in hours, the more reliable the entire LED system.

Optical system efficiency

This is the parameter for assessing the efficiency of the secondary optical system and is given by the candela/lumen ratio (cd/lm). This value determines the number of candelas that can be achieved by combining the LED with a secondary lens. The higher this value, the better the performance of the system.

Photobiological safety

Indications concerning electronically-powered wide-spectrum incoherent light sources aimed at preventing damaging effects on the skin and eyes. The parameters to be checked are the exposure limits for the different wavelength ranges. The reference Standard is EN 62471.

Photometric curves

Photometric curves graphically express the main lighting properties of a light source. They therefore provide a tool for making calculations, assessing the qualities of a fixture and making comparisons between similar products. The planes passing through the center of the fixtures are used as references (longitudinal and transversal planes for ceiling and arm-mounted fixtures, horizontal and vertical for spotlights). The data is then processed in the form of different curves based on the type of display required.

Photopic, Scotopic and Mesopic Vision

The human eye transforms light stimulus into electrical messages sent to the brain using two types of photoreceptors on the retina: cones and rods. The first are mainly active under conditions of high luminance and are responsible for that which is defined as photopic (daytime) vision. The second are active under very low luminance conditions and are responsible for scotopic (night time) vision. Between these two extremes there is also an intermediate section known as mesopic vision.

Power factor (PF)

Phase displacement index between the input voltage and alternating current of a power supply system. Expressed by a value between 0 and 1. A high value means a high phase displacement and therefore a lesser quantity of "reactive" current absorbed by the power supply network. A minimum value of 0.9 is usually required for electrical systems.

Power LEDs and CRI

As with almost all light sources, the general color rendering index (CRI) is also defined for Power LEDs. Since the spectrum of a white LED is different from that of a filament bulb, its CRI is less than 100. As regards the latest generation Power LEDs which emit a cold light, thus over 5000K and hence with chromatic coordinates closer to the blues, products are commercially available with CRI = 75. As for warm and neutral lights - 3000K and 4000K - they are commercially available with CRI greater than 90.

Power supply system efficiency

This is the ratio between the output power and input power of the power supply system. High levels of power supply efficiency can make a significant contribution to reducing lighting costs.

Reference Standards

Recently ENERGY STAR, an international body for energy efficiency standards introduced by the American Environmental Protection Agency (EPA) in 1992, set out reference standards and criteria for LEDs (ENERGY STAR® Program Requirements for Integral LED Lamps ENERGY STAR Eligibility Criteria).

With regards to the flux emitted and above all the maintenance of the same over time (Lumen Maintenance), ENERGY STAR carried out the procedures and tests set out in IES LM-79 and IES LM-80. These procedures set out the conditions (time, temperature, etc.) under which performance tests are to be carried out.

Solder-point temperature (T_{sp})

Temperature measured at the LED pin soldered to the PCB and connected to the dissipater inside the LED.

T_j - T_{air} ratio

In order to provide data on a lighting fixture, it is necessary that the T_j of the Power LEDs used assumes determined values based on the ambient temperature (T_{air}) - measured in the immediate vicinity of the matrix - and the driving current. Once these figures have been acquired, it is possible to determine the life of the Power LED, which is closely correlated to that of the system.

Thermal Resistance: (C°/W):

This parameter indicates the difficulty experienced by the LED in expelling the heat generated inside it. This heat is the cause of the degradation in terms of performance and life of the LED (LM70). The lower the TR, the better the performance.

In order to suitably size structures that "extract" heat, it is indispensable to have values for the various thermal resistances (TR) that make up the system. These TR values represent the tool used to calculate, indicatively, the junction temperature (T_j) of the Power LED, which is closely connected to its lifetime (L70).

Useful life

The life expectancy of a system. The estimated time during which a system can be defined as operative, before obsolescence or wear begin to compromise operation. The life of an LED is defined in terms of the residual flux emitted with respect to initial flux. Typically lifetime L70 (70% of initial flux) is used, but also L80 (80% of initial flux) and L90 (90% of initial flux), based on the details of the application and the ambient temperature T_a.

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