

Intelligent lighting control for hazardous areas

Safe. Reliable. Efficient. 3,000 to 7,000 lumens





Intelligent lighting control and insights

For hazardous, harsh and hard-to-access areas

Reliable lighting is a critical aspect of **industrial workplace safety and performance**. Poor or inadequate lighting is a leading factor in workplace accidents and injuries, and the risk goes up exponentially in classified environments. Lighting systems must provide high visibility while minimizing shadows and glare to help create a safe and productive work environment for your employees.

In addition to safety challenges, lighting systems in harsh and hazardous applications face **rising energy and maintenance costs** due to the over-usage of lights. Running lights more than necessary, often due to a lack of effective control, shortens the life of the fixtures and drives up material and labor costs. Slowing or stopping production to replace failed lighting impacts your productivity.



Champ Intelligent Lighting overcomes these challenges



Crouse-Hinds[™] series Champ[™] Intelligent Lighting fixtures are renowned for their reliability and safety in harsh and hazardous lighting applications. Now available with intelligent control and insight capabilities, they deliver more operational value and better total cost of ownership. An intuitive app-based interface provides full lighting control at your fingertips—improving safety, maximizing energy savings and minimizing maintenance costs.



Control & insights -Right from your phone



Fixture designed for performance and protection in hazardous areas



Group of lights with a shared intelligent profile to optimize lighting system based on space and usage requirements

Bluetooth low energy (BLE)

The benefits of Champ Intelligent Lighting



Note: Fixture shown without sensor.

Maintain up-time and minimize maintenance costs

Operate your lighting WHEN and WHERE you need it

Running lights more than necessary shortens the life of the fixtures and drives up material and labor costs. With Champ Intelligent Lighting control and insights, you can optimize your system to help eliminate over-usage and double the life of your lighting fixtures.



Maximize energy savings and sustainability

Provide the right amount of light at the right time

Full lighting control is at your fingertips with a range of intelligent features, including grouping, scheduling, dimming, occupancy sensing, high end trim and daylight harvesting. With an intuitive app, you can easily tune your light output based on space and specific usage requirements. Optimizing your lighting system through intelligent control can help reduce your energy consumption by up to 50%.



Improve safety and alarming

Help minimize personnel time spent in hazardous areas

Champ Intelligent Lighting fixtures monitor ambient light, temperature, motion, energy consumption and overall fixture health. Any irregularities in these factors generate feedback alarms to your team, so you can take planned, proactive action and help maintain a safe work environment.



Bluetooth Low Energy (BLE) technology

Intuitive commissioning and control provide effortless management of your lighting system

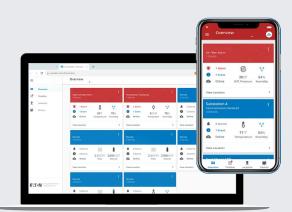
Unlike other "connected" lighting solutions that use complex hardware and software, Champ Intelligent Lighting fixtures feature a robust, easy-to-use interface.

- Designed to simplify light fixture control
- App-based configuration for effortless customization
- Creates a connected infrastructure for future scalability

Powered by Brightlayer

Champ Intelligent Lighting utilizes Eaton's Brightlayer Industrial suite, an industry-focused software solution that provides data and insights to drive real operational value for your facility, process or asset. With Brightlayer, you can use data from your operation, including installed equipment, to bring new opportunities into focus.

Software, data and services coupled with our industry expertise help give you the ability to leverage reliable, secure and actionable data to power your operation smarter.





Learn more about Brightlayer Scan QR code or go to: Eaton.com/Brightlayer

System control functionality



Live fixture ID

Our intuitive app-based dashboard enables quick and easy identification of individual lights installed in the field. Simply select "live id" for a specific fixture and it will cycle on and off three times.



Device grouping A

An added benefit that maximizes control in a defined area. By grouping light fixtures, the same control settings can be applied to them all, increasing efficiency and response time.



Wireless ON/OFF and dimming

Turn lights on and off directly from the app. Reduce energy consumption by setting dimming levels or high end trim. Used in conjunction with other control features, such as scheduling and occupancy sensing, to further improve energy savings.



Intelligent scheduling A

Allows for improving energy efficiency during non-operational hours. Easy app-based configuration lets a user set up schedules for lights to be on and off at pre-defined times, removing the challenges of manual management.



Occupancy sensing A

Ideal for areas that see infrequent traffic, such as storage areas of warehouses. Sensor controls can automatically illuminate the area once presence is sensed and turn lights back off when presence is no longer sensed.



Daylight harvesting A

Allows for use of the daylight and adjusts the light level of the luminaire to maintain desired light levels. It is best suited for outdoor environments or indoor areas where daylight is present during operational hours of a facility.

A Requires advanced service plan subscription. Refer to page 5 for more information.

Provide the RIGHT amount of light, WHEN and WHERE you need it

With our intuitive app-based interface, you can utilize combinations of the above control functions across your facility to optimize light levels by site, while minimizing run time to lower your energy and maintenance costs.

Site 1: Low traffic, remote or restricted areas

- Keep lights off or dimmed to a safe minimum
- Utilize occupancy sensing to immediately bring grouped lights to a working level when triggered by movement
- Return lights to OFF or dimmed setting after a set period of inactivity

Site 2: High traffic area with heavy employee activity, typically during shifts

- Schedule lights to be OFF during non-operational hours and turn on when work starts
- Utilize daylight harvesting where applicable for system-driven changes of fixture light output to maintain consistent lumen levels throughout the day

Champ LED + Brightlayer

Unlock intelligent lighting control and insights that maximize safety, productivity and savings with Brightlayer Industrial software

The Brightlayer service plan provide flexible solutions for your specific lighting applications.

The advanced subscription plan provides customized lighting control with a wide range of intelligent features. Create lighting groups and set light levels that can be managed by schedule, available daylight and occupancy. This ensures that the safest light levels are maintained while minimizing energy consumption and eliminating the over-usage of lights.

In addition to customized lighting control, our advanced plan provides you with each fixture's estimated remaining usable life. Use this data to schedule planned maintenance events to avoid possible safety issues from failed lights and to minimize personnel time spent in the hazardous areas.

The hardware only plan provides a standard fixture without controls. The fixture has the ability to be lighting control capable at a later date by adding the subscription plan.

How it works designed for simplicity

- **1.** Identify the light (Live ID)
- 2. Commission the light
- 3. Add light to a group
- 4. Set up group's intelligent control profile

All from your mobile device—no gateways or servers required



Brightlayer Industrial suite app



Bluetooth Low Energy (BLE) technology



Champ Intelligent Lighting fixture



Group of lights with a shared intelligent lighting profile

	SERVICE PLANS			
	Hardware Only	ADVANCED		
SUPPORT				
Pre-sale product training and lighting layout support	•	•		
Post-sales technical support	•	•		
Warranty	7 YEARS	10 YEARS		
LIGHTING CONTROL F	UNCTIONALITY			
Wireless on/off/dimming		•		
Live fixture ID		•		
Fixture grouping		•		
Advanced scheduling		•		
Occupancy sensing		•		
Daylight harvesting		•		
LIVE INSIGHTS AND DA	ATA			
Remaining usable life		•		
OPERATION AND HARDWARE				
iOS-based control/ commissioning		•		
Multiple fixtures/sites/groups/ users support		•		

SERVICE PLANS

EATON'S Crouse-Hinds series Champ[™] VMVL LED Intelligent Lighting Control

Design features The anatomy of a Champ Intelligent Lighting fixture

The Champ Intelligent Lighting fixture is a fieldproven design that helps ensure safety, reliability and performance in harsh and hazardous areas. Now, it's combined with intelligent control and insight capabilities to deliver more operational value and better total cost of ownership.

INTELLIGENT CONTROL AND INSIGHTS

A Smart driver and controller

- Fully serviceable drivers are isolated from the primary heat source (LED engine) to maximize economic life
- User-selected option for thermal-rollback enables driver and LED protection during extreme temperature events
- 90-minute on-board back-up memory maintains system clock and control profiles in event of power disruption
- Controller manages dimming, scheduling and grouping functionality, as well as notifications and alarming
- Every VMVL intelligent light fixture features connectivity capability

B Integrated antenna

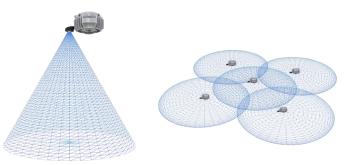
- Attached to the optics board inside the lens, maintaining the fixture's hazardous ratings
- Enables effortless connection to our Brightlayer Industrial lighting control interface. No complex hardware required to commission and control the lights
- Bluetooth Low Energy (BLE) protocol enables decentralized control of the system without complex and expensive IT network gear
- Up to 30 foot range fixture-to-fixture
- Backed by Eaton's Cybersecurity Center of Excellence, which enforces security through training, technology, best practices and industry standards

c Intelligent multi-sensor

- **Replaceable sensor** can be factory installed at purchase, or field installed at a later date
- Sensor is integral to light fixture—no field wiring required
- PIR occupancy sensor with LED indicator
 - Automatically illuminates the area once presence is detected
 - Light turns back off when presence is no longer sensed for a set period of time
- Photo sensor for daylight harvesting and lux reporting
 - Measures available daylight and adjusts the light level of the luminaire to maintain desired light levels







LONG-LIFE RELIABILITY

D Thermal management

• Heat fins help ensure proper air flow and facilitate dust-shedding for effective heat dissipation and thermal management of LED engine

Performance in extreme environments

- Operating ambient –40 °C to +65 °C
- Type 4X, IP66
- Corrosion-resistant aluminum housing with Corro-free[™] epoxy power coating
- Vibration tested in accordance with Section 33 of UL 844
- Impact tested in accordance with Section 68 of UL 844
- 6 kV surge protection

LIGHT PERFORMANCE AND QUALITY

F Custom optics and colors

- Directs light where you need it, helping eliminate gaps and dark spots
- Can potentially reduce the number of light fixtures required in your application
- Green and amber LEDs available for wildlife conservation applications



TYPE I

Long and rectangular for hallways, walkways, loading docks, catwalks



TYPE III

Stanchion and wall-mount light distribution, minimizing spillover on the wall



TYPE V

Regular circular distribution pattern for high/low bay indoor and outdoor ceiling or pendant mount lighting

G Glass or polycarbonate lens with clear or diffused finish

• A variety of lens materials and finishes available to meet customer requirements or preference



CLEAR



DIFFUSED

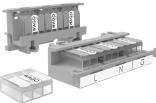
INSTALLATION EASE

H Retrofit-friendly universal top hats

- Crouse-Hinds series Champ LED luminaires utilize the same mounting modules as our legacy products, simplifying installation and significantly reducing costs in retrofit projects
- We also offer mounting adapters and kits for quick connection to other manufacturers' modules (Appleton, Thomas and Betts, GE)

Lever lock connectors and terminal blocks

• Plug and play wiring simplifies and speeds installations



• Accepts 10-20 AWG wire

Image is representative only.





5000 K – COOL Crisp, bright white with a blue hue

Note: Also available in 2200 K and 4000 K upon request.



TRUE AMBER



3000 K – WARM Warm white with a yellow hue



TRUE GREEN

Champ VMVL LED product specifications

Certifications and compliances

NEC[®], CEC and IEC

- Class I, Division 2, Groups A, B, C, D
- Class II, Groups E, F, G
- Class III
- Class I, Zn. 2 AEx ec ia IIC; Class I, Zn. 2 Ex ec ia IIC
- Zn. 21 AEx ia tb IIIC; Zn. 21 Ex ia tb IIIC
 - Ex ec ia IIC T* Gc
 - Ex ia tb IIIC T*°C Db
 - II 3 G Ex ec ia IIC T* Gc
 - II 2 D Ex ia tb IIIC T*°C Db
 - IECEX UL 19.0039X
 - DEMKO 19 ATEX 2118X
 - DEMKO 19 ATEX 2119X

Simultaneous presence

• Wet locations, Type 4X, IP66

UL[®] standards

- UL 844; UL 913; UL 1598; UL 1598A; UL 50E
- UL 60079-0; UL 60079-7; UL 60079-11; UL 60079-31

CSA[®] standards

- CSA C22.2 No. 137; CSA C22.2 No. 94.2
- CSA C22.2 No. 60079-0
- CSA C22.2 No. 60079-7
- CSA C22.2 No. 60079-11
- CSA C22.2 No. 60079-31

IEC and EN standards

- IEC/EN 60079-0
- IEC/EN 60079-7
- IEC/EN 60079-11
- IEC/EN 60079-31

Design features

- **Installation flexibility:** seven mounting module styles help ensure that the fixtures are installed in the correct location to properly light your facility
- Energy-efficient technology: up to 77% energy savings over HID fixtures
- Contains no mercury or other hazardous substances
- Shock- and vibration-resistant solid-state luminaires have no filaments or glass components that could break—greatly reduces the risk of premature failure
- Operating ambient: -40 °C to +65 °C
- Up to 60,000 hours lifetime at +65 °C
- 5-year fixture warranty A
- A Refer to the authorized distributor price book for Crouse-Hinds standard Terms and Conditions. Standard 5-year warranty extends to 7 years with active subscription to Brightlayer Industrial Advanced plan

Colored LED options

- Available in true green and true amber for wildlife friendly applications c
- **Reduction in light pollution** for night space observation and sky glow due to isolating blue wavelength in red and amber colors
- Improves visibility for telescopes in observatories during night sky space exploration

Standard materials

- Lamp housing and adapter: die cast aluminum with Corro-free epoxy powder coat
- Lens: heat- and impact-resistant glass (clear or diffused) or polycarbonate
- Gaskets: silicone
- External hardware: stainless steel
- · Factory sealed: no external seals required

LED system

- High-intensity discrete power emitters
- Standard: cool white (5000 K, 70 CRI); optional: warm white, (3000 K, 80 CRI), neutral white (4000 K, 70 CRI), deep warm (2200 K, 70 CRI, DarkSky ready)
- Custom Type I, III and V optics available

Nominal Nominal Max. E Max. E Surge protection (kV) Nominal Weight kg (lb) Efficacy (Im/W) Amperes (A) Catalog lumens Wattage (W) Power factor Wattage (W) Amperes (A) Voltage THD (%) (Im)B VMVL-3-UNV1 100-277 VAC, 50/60 Hz; 127-250 VDC 5.45 (12) 3225 153 21 23 0.22-0.08 0.26 > 0.90 D <15 6 VMVL-5-UNV1 5.45 (12) 5456 155 35 39 100-277 VAC, 50/60 Hz; 127-250 VDC 0.36-0.13 0.45 > 0.90 <15 6 50 152 54 100-277 VAC, 50/60 Hz; 127-250 VDC 5.45 (12) 7607 0.5-0.19 0.60 > 0.90 <15 6 VMVL-7-UNV1 75 27 100-277 VAC, 50/60 Hz; 127-250 VDC 0.27-0.10 5.45 (12) 2030 33 0.37 > 0.90 <15 6 VMVL-AT-UNV1 145 20 23 100-277 VAC, 50/60 Hz; 127-250 VDC 0.2-0.07 0.27 > 0.90 D <15 VMVL-GT-UNV1 5.45 (12) 2900 6

B Nominal lumens are based on Type V optics, 5000 K CCT with a clear glass lens. The nominal wattage is measured at 120VAC.

C Custom optics not available with colored LEDs.

D For VMVL-3-UNV1 & VMVL-GT-UNV1: PF>0.9 from 100-255 VAC.

E In the event of an abnormal condition (single-string functioning), the maximum wattage and current will be reached.

Electrical ratings and weights

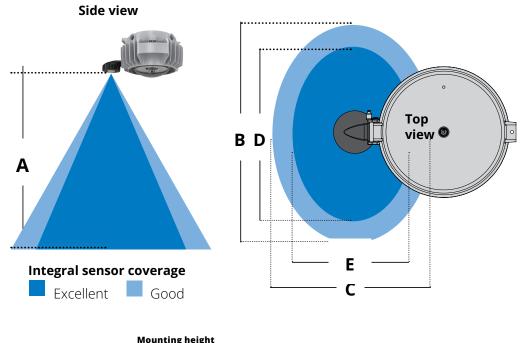
Temperature codes, UNV1 driver

UNV1: VMVL-3 to VMVL-7	40 °C	55 °C	65 °C
Class I, Division 2	T5	T4A	T4A
Class II, Division 1	T4	T4	T4
Simultaneous presence Class I, Division 2 Class II, Division 1	T3B	T3A	T3
Zone 2, AEx ec ia IIC Zone 2, Ex ec ia IIC	T4	T4	T4
Zone 21, AEx ia tb IIIC Zone 21, Ex ia tb IIIC	T135	T135	T135

Photometrics

For IES photometric files, please refer to the resource tab of the <u>VMVL LED product page</u> on Eaton.com.

Integral sensor coverage



of fixture	Good coverage		Excel	Excellent coverage		
Α	В	с	D	E		
12	15	12	12	9		
30	40	36	36	30		

Numbers above are listed in feet.

Ordering information

Part number example: VMVL-3-N-A2-R1-G-UNV1-SS12-M3

Champ VMVL LED, 3000 lumens, 4000 K neutral white, 34-inch pendant mount, Type I optics, clear glass lens, wire guard, 100-277 Vac driver, integrated sensor, intelligent light fixture.

<u>G</u> - <u>UNV1</u> - <u>SS12</u> - M3 N - A2 - R1

Light source/intensity					
3 3250 nominal lumens					
5	5537 nominal lumens				
7	7442 nominal lumens				
AT A	True Amber LEDs (dominant wavelength 585–595 nm)				
GT A	True Green LEDs (dominant wavelength 520–535 nm)				

Color temperature

BLANK	5000 K, 70 CRI (cool white)
NA	4000 K, 70 CRI (neutral white)
W	3000 K, 80 CRI (warm white)
DA	2200 K CCT, 70 CRI (deep warm white)

	Lens guard			
	BLANK	No guard		
	G	Wire guard		
(
Lens ma	terial			
BLANK	Clear glass			
DG	Diffused glass C	Diffused glass CDE Polycarbonate C		
PC	Polycarbonate C			
UP	Uplight glass globe refractor CE Teflon coated glass CDE			

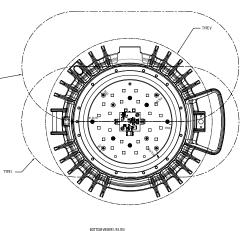
BLANK	No external sensor included	
SS12	Sensor with barrier board (12–30 ft mounting height)	
SC	Safety cable	
TB6	6-pole terminal block	
TM F	Trunnion mount kit with pin	

Voltage

100–277 Vac, 50/60 Hz; 127–250 Vdc UNV1

Optics

BLANK	Type V optic standard
R1 B	Type I optic (all mounts minus ceiling)
R3 B	Type III optic (all mounts minus ceiling)
R1A B	Type I optic (ceiling with conduit 45° counterclockwise from top hat hinge)
R3A1 B	Type III optic (ceiling with conduit 45° counterclockwise from top hat hinge)



Mount

BLANK	No mounting module	T2	³ ⁄4-inch wall	A20	20 mm pendant
J5	1-½-inch stanchion, 25° angled	T3	1-inch wall	A25	25 mm pendant
P5	1-½-inch stanchion, straight	C2	³ ⁄4-inch ceiling	C20	20 mm ceiling
A2	³ ⁄4-inch pendant	C 3	1-inch ceiling	C25	25 mm ceiling
A3	1-inch pendant	B2	³ ⁄ ₄ -inch dust shedding	T20	20 mm wall
H2	3⁄4-inch offset pendant	B3	1-inch dust shedding	T25	25 mm wall

A Consult customer service for lead time.

B Additional clocked optics available upon request. Please contact customer service.

- C Only one lens option may be selected.
- D UL/cUL only, not available for IECEx/ATEX.

E Available with Type V optic only.

F Must be used with ceiling mounting modules. For suffix TM, the luminaire is restricted to Class I, Division 2 applications only when it is used for pole mounting.

Brightlayer Industrial Intelligent Lighting service plan

1 year Advanced service plan—1 device **BLI-CH-DL-ADV**

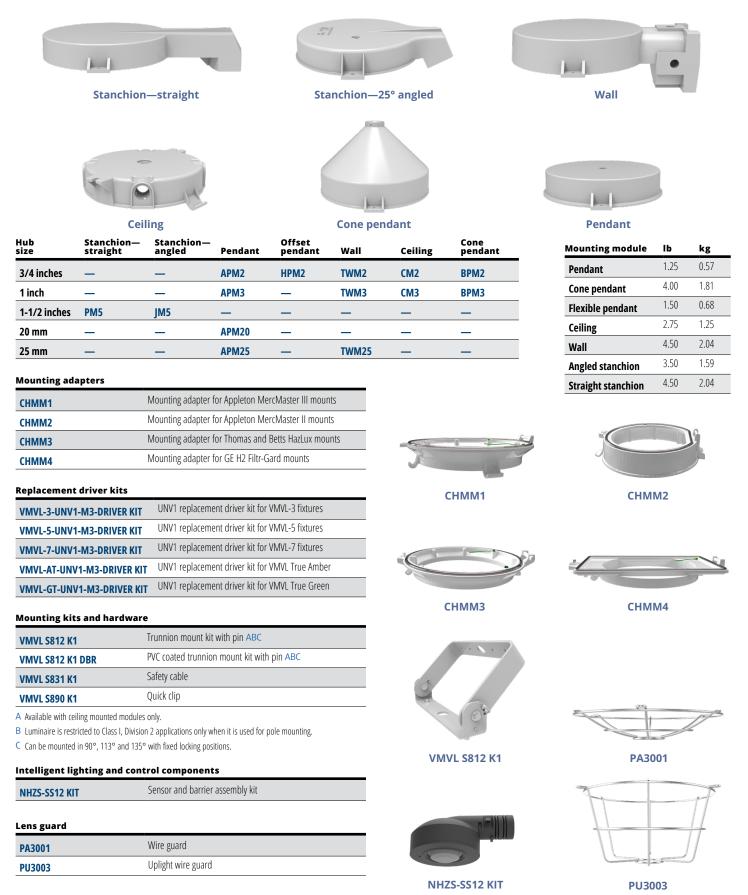
Conduit (for reference) TYPE I TYPE III

Type R1 and R3 optic

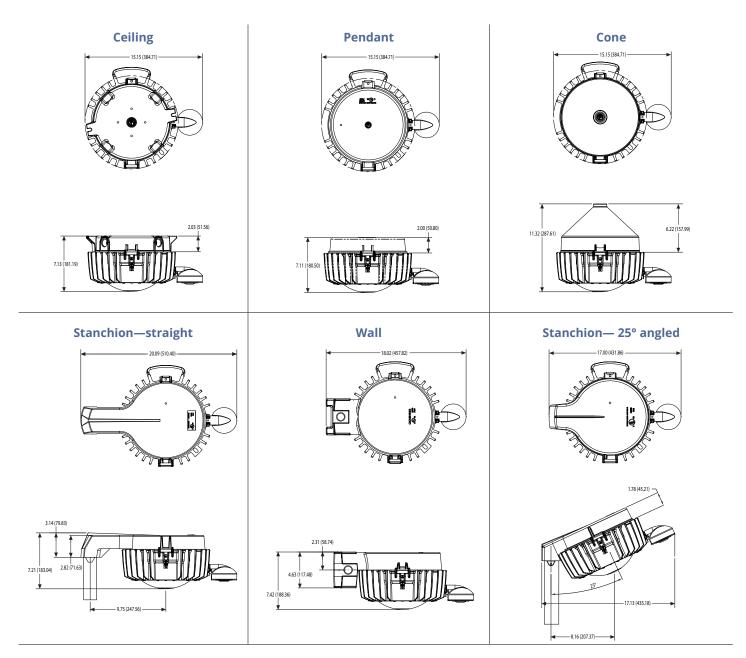
Type R1A and R3A1 optic

Accessories

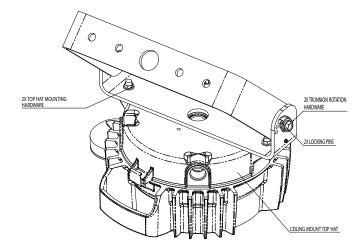
Mounting modules



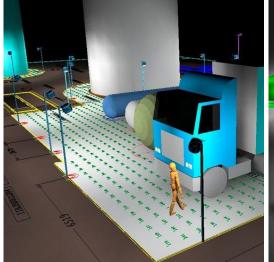
Dimensions

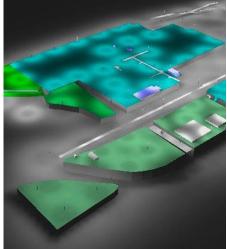


Trunnion



Complimentary lighting layout, analysis and design support for Crouse-Hinds series light fixtures







From simple layouts to complex drawings, our industrial and hazardous area lighting design engineers will work with you to deliver precise, efficient, application and environmentappropriate lighting designs.

Our experts can save you time and money by creating a virtual model of a proposed design, revealing luminaire characteristics and effects that would be hard to detect in anything short of the completed installation.

We provide the following to you:

- 3D fixture placement with comparison of alternate fixtures and mounting heights
- Point-by-point footcandle diagram calculations
- AutoCAD drawings overlaying customer floorplans
- Complete bill of material

Take advantage of our lighting layout services today.



Complete our lighting layout request form and send any supporting project information to lightinglayouts@eaton.com Eaton offers a complimentary solution for lighting designers and engineers looking for a state-of-the-art, effective and professional light planning software package.

Our experts can save you time and money by creating a virtual model of a proposed design, revealing luminaire characteristics and effects that would be hard to detect in anything short of the completed installation.

Application benefits:

- Generates results showing expected light readings in either footcandles or LUX
- · Provides professional quality summary reports
- · Allows for energy evaluation reporting
- Planning for whole buildings, including outdoor spaces
- · Document your results with photo-realistic visualizations
- Import AutoCAD drawings to use as a background guide with light fixture planning

Two steps to get started:

1 Click here

2 Click here

To download the latest version of DIALux. DIALux is free of charge and can be downloaded in many languages. Click here to download the Eaton's Crouse-Hinds series plugin.

The DIALux software comes without any luminaire (photometric) data. This data (called a "plugin") must be installed separately. The Eaton's Crouse-Hinds series plugin includes the complete photometric database of Eaton's Crouse-Hinds series lighting products.

Note: Users who have already downloaded and installed any DIALux program only need to install the Eaton's Crouse-Hinds series plugin. Our plugin will work with either DIALux or DIALux EVO lighting software programs.

Notes

Notes

U.S. (global headquarters): Eaton's Crouse-Hinds business

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Learn more about Champ Intelligent Lighting and Brightlayer at **Eaton.com/Intelligent-Lighting**

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