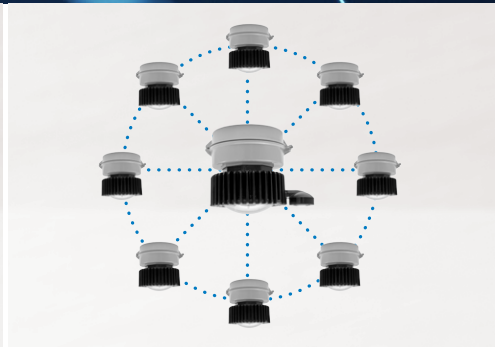


An Eaton Intelligent Power™ solution

CROUSE-HINDS  
SERIES

# Champ® VMV

## Connected lighting for hazardous areas



**EATON**

*Powering Business Worldwide*



# Get connected with Champ VMV.

An Eaton **Intelligent Power™** solution:

Remote monitoring and control for use in **hazardous and hard-to-access areas.**

## Simple. Intelligent. Efficient.

Eaton's Crouse-Hinds Division now has an innovative and reliable solution that optimizes your industrial lighting applications based on space and specific usage requirements.

Combining our advanced LED lighting fixtures with communications and sensing technology, we put full lighting control at your fingertips allowing you to maximize energy savings and minimize maintenance costs.



## Connected lighting benefits:

### Eliminate over-usage of lights

- Optimize facility illumination by using light where and when you need it
- Up to 80% more efficient than standard LED luminaires\*
- Up to 2 times more fixture life due to reduced run time\*
- Reduced maintenance
- Reduced light pollution

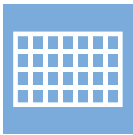
### Flexible & intuitive software controls

- Tune light output to meet safety and task needs – light where you need it
- Permission-based user control for added security
- Software alarms that notify on fixture, sensor, and radio issues
- Ability to group fixtures by area for zone based control

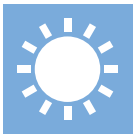
\*Assuming 24/7 operation base case for LED.



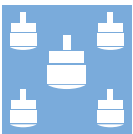
## Connected lighting functionality:



**Advanced scheduling control** allows for improving energy efficiency during non-operational hours. Easy software control lets a user set up schedules for lights to be on and off at pre-defined times, removing the challenges of manual management.



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



**Fixture grouping** is an added benefit that maximizes control in a defined area. By grouping light fixtures, same control settings can be applied to them to increase efficiency and response time.



**Occupancy sensing** is best used in areas that see infrequent traffic, such as storage areas of warehouses. Innovative occupancy sensor controls can automatically illuminate the area once presence is sensed in an area and also turn it back off when sensors stop sensing the presence.



**Advanced dimming controls** help reduce the energy consumptions by setting dimming levels. Dimming controls could be used in conjunction with other control features, such as scheduling and occupancy sensing, to improve energy savings.



## Powered by SmartMesh® WirelessHART

Field-proven and robust even in the harshest environments, the SmartMesh WirelessHART technology is a full mesh networking solution for industrial applications.

# How it works



## Modular design & custom control

One fixture with a control and sensing unit (*HZS-X12* or *HZS-X40*) can send commands to multiple fixtures with just the controller (*CNTRL-X*) installed.



## Management software

Manage and monitor remotely via easy-to-use web-based software.



## Energy management module

Management hub (*server*) that discovers, commissions and manages smart devices.

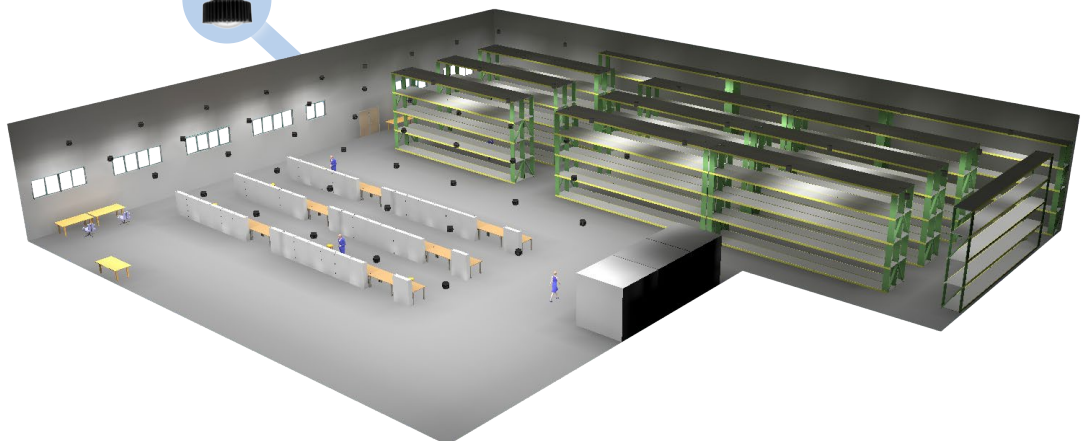


## Wireless gateway

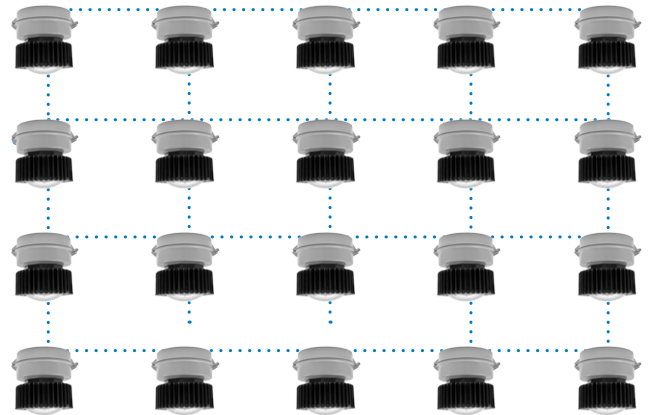
Connects the fixture and energy management module and relays information.

## Remote sensing

Integral control and sensing built into the fixture.



# Design features



## Safety and security:

- Fully certified for Class I, Division 2 hazardous rated areas
- Powered by SmartMesh WirelessHART technology
- Permission-based user control to ensure software security

## SmartMesh WirelessHART technology:

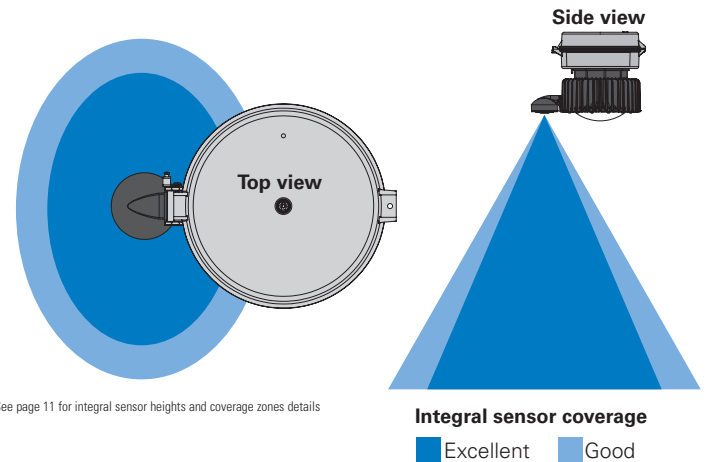
- Better reliability, security and power management versus other wireless protocols
- Developed as a multi-vendor, interoperable wireless technology
- Field-proven and robust even in the harshest environments

## Controller:

- Controls lighting levels per predefined settings (scheduling, dimming, etc.)
- Sends system notifications/alerts on fixture, sensor and radio
- Provides energy metering capability
- Field replaceable

## Integral sensor:

- Detects and measures area occupancy, lighting levels and ambient temperatures
- Field install in minutes
- Upgradable to accommodate future customer needs and functionality
- Up to 40 ft. sensor range



## Why choose Champ Connected lighting?

- Flexible and intuitive software control
- Energy efficiency
- Dark sky friendly, reduced light pollution through advanced controls
- Up to two times product life over standard LED
- Improved productivity through reduced run time and maintenance needs



**89%**  
ENERGY EFFICIENCY

**84%**  
TOTAL COST OF OWNERSHIP

**100%**  
MAINTENANCE REDUCTION

Assumptions:  
Savings calculations based on overall life of connected LED system with scheduling, occupancy sensing and daylight savings.  
Energy cost of \$.09 per kilowatt; 24 hour per day operation; labor rate of \$80 each for 2 workers; average time for HID fixture maintenance of 1 hour.

# Connected lighting application example:



## Application:

Multi-use area with high traffic production area and minimally used warehousing

## Goal:

Optimize light levels and minimize energy usage and run time

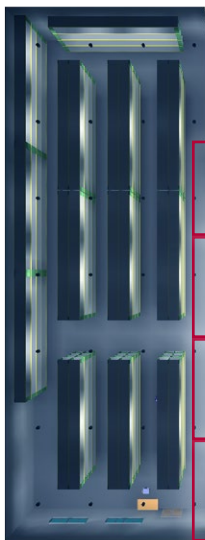
## Solution:

- Split the area into zones based on usage rates and location
- Schedule lights to be OFF during non-operational hours
- Set safe minimum light levels for unoccupied areas and control with occupancy sensors
- Set custom targeted lighting levels in high use areas
- Utilize daylight harvesting feature where applicable

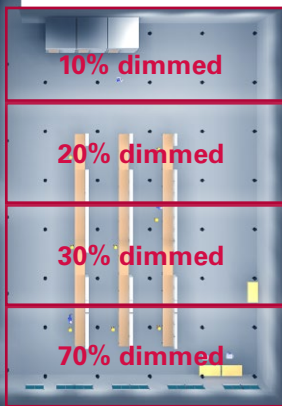


Maximize energy and maintenance savings with custom control settings

## Daylight harvesting

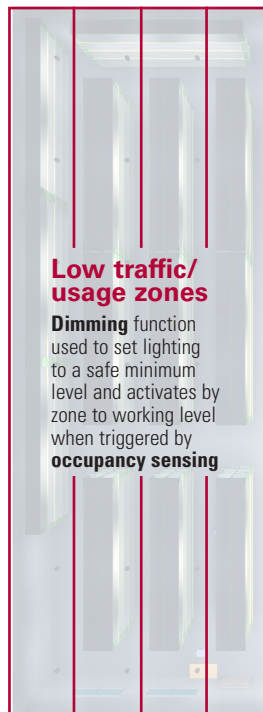


**Advanced photo sensing** technology senses changing light levels and saves energy by maximizing the natural sunlight to provide consistent light levels throughout the day into night.



↑ ↑ ↑ ↑ ↑  
Sunlight

## Advanced scheduling and occupancy sensing



### Low traffic/usage zones

**Dimming** function used to set lighting to a safe minimum level and activates by zone to working level when triggered by **occupancy sensing**

### Custom zones

**Easily set up the zones** based on your needs to create safer, more energy-efficient working conditions.



### High traffic/usage zone

Lighting set to maximum level taking into account **daylight harvesting** and **occupancy sensing**

# Technical specifications:

Model	Typical lumens (Type V)*	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
VMV3L	3,300	26.4	125	70W-100W	Up to 91%
VMV5L	5,300	42.4	125	100W-150W	Up to 91%
VMV7L	7,300	58.4	125	150W-175W	Up to 89%
VMV9L	9,300	74.4	125	250W-320W	Up to 92%
VMV11L	11,300	90.4	125	320W-400W	Up to 92%

\* Tolerance +/- 10%.

## Applications:

- Suited for customer specifically seeking to optimize benefits from control features such as scheduling, occupancy sensing, dimming, etc.
- Convenient centralized controls through software (scheduling, dimming, etc.) instead of circuit level control
- Where opportunities exist for optimizing light levels and minimizing energy usage and run time
- Where extremely corrosive, wet, dusty, hot and/or cold conditions exist
- Manufacturing plants; heavy industrial, chemical, food and beverage facilities; mining; platforms; loading docks; tunnels; outdoor wall and pole mounted areas



## Connected lighting benefits:

- Up to 80% more efficient than standard LED luminaires\*
- Convenient centralized controls through software
- Up to two times more fixture life with reduced run time
- Reduced light pollution
- Reduced maintenance needs
- Tune light output to meet safety and task needs
- System alarms capability

\* Assuming 24/7 operation base case for LED. Savings calculation for Champ connected lighting assumes: 8 hour shift scheduling savings, occupancy sensing savings of 80% and daylight harvesting of 60% during two shifts of operation.

## LED system:

- High intensity discrete power emitters
- Standard: cool white (5000K, 70 CRI)  
Optional: warm white (3000K, 80 CRI)
- Custom Type I, III and V optics available



## Fixture life:\*

- Rated life of 60,000 hours at 55°C and 50,000 hours at 65°C operating ambient and 24/7 continuous operation for 365 days
- Up to twice the economic life than conventional LED at 25°C ambient
- L70 >100,000 hours at 55°C

\* Assuming 24/7 operation base case for conventional LED.

## Drivers:

Option	Voltage: VMV3L-VMV11L
/UNV1	120-277 VAC, 50/60 Hz; 108-250 VDC, 50/60 Hz

## Standard materials:

- Lamp housing and adapter - die cast aluminum with Corro-free™ epoxy powder coat
- Lens - heat- and impact-resistant glass
- Gaskets - silicone (non silicon gasket available- consult factory)
- External hardware - stainless steel
- Factory sealed, no external seals required

## Qualifications and compliances:

- DesignLights Consortium® (pending)

## Certifications and compliances:

### NEC, CEC and ROW:

- cULus Class I, Division 2, Groups A, B, C, D
- cULus Class I, Zone 2, nA nR
- cULus Class II, Groups E, F, G
- cULus Class III
- cULus Zone 21 tb
- Simultaneous Presence
- Wet Locations, Type 4X, IP66
- Marine Listed
- R/C for sensor and controller
- ATEX/IECEX nA, nR, ia (*pending*)
- CE (*pending*)

### National Fire Protection Association (NFPA)

- NEC NFPA 70

### Underwriters Laboratories, Inc. (UL):

- UL1598; UL1598A; UL8750; UL844; UL60079-0; UL60079-11; UL60079-15; UL60730; UL913; UL50; UL50E

### ISA12.12.01:

- Non-incendive equipments

### CSA:

- cUL Listed to CSA Standard C22.2 No. 250 (for Luminaires)
- cUL Listed to CSA Standard C22.2 No. 137 (Electric Luminaires for Hazardous Locations)
- CSA 60079-11
- CSA 60079-0

### IEC/EN Standards: (*pending*)

- IEC/EN 60079-0, IEC/EN 60079-15, IEC/EN 60079-11, IEC/EN 60079-31
- IEC 60529
- IEC 60598

### National Electrical Manufacturers Association (NEMA):

- NEMA 250

## Electrical ratings:

### Electrical:

	VMV3L	VMV5L	VMV7L	VMV9L	VMV11L
<b>Voltage range, VAC</b>	120-277	120-277	120-277	120-277	120-277
<b>Frequency</b>	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
<b>Input power (watts)</b>	26.4	42.4	58.4	74.4	90.4
<b>Input amps at 120 VAC</b>	.220	.353	.487	.620	.753
<b>Input amps at 277 VAC</b>	.118	.164	.205	.277	.338
<b>Voltage range, VDC</b>	108-250	108-250	108-250	108-250	108-250
<b>Power factor</b>	>0.90	>0.90	>0.90	>0.90	>0.90
<b>Total harmonic distortion (THD)</b>	<20%	<20%	<20%	<20%	<20%
<b>Nominal lumens* (Type V)</b>	3,300	5,300	7,300	9,300	11,300

\* Tolerance +/- 10%.

### Weights:

Luminaire†	lbs.	kg.
VMV3L-11L CTRL-X/UNV1	21.5	9.75
VMV3L-11L HZS-X12/UNV1	22.0	9.98
VMV3L-11L HZS-X40/UNV1	22.0	9.98

† Tolerance +/- 1 lb.

Mounting module	lbs.	kg.
Pendant	1.25	0.57
Cone pendant	4.00	1.81
Flexible pendant	1.50	0.68
Ceiling	2.75	1.25
Wall	4.50	2.04
Angled stanchion*	3.50	1.59
Straight stanchion	4.50	2.04

\* Angled stanchion for VMV3L-VMV11L models only.

## Temperature codes:

Lamp/lumen output	Driver type	Ambient temperature	Class I, Div. 2	Class II, Div. I	Simultaneous rating	Class I, Zone 2	Class III, Div. 1 Class II, Div. 1, Groups E, F, G
					Class I, Div. 2, Div. 1	AEx nA nR; Ex nA nR	Zone 21, AEx tb IIIC
3L, 5L, 7L, 9L, 11L	/UNV1	40°C	T5	T5	T3C	T6	T66°C
3L, 5L, 7L, 9L, 11L	/UNV1	55°C	T5	T4A	T3A	T5	T83°C
3L, 5L, 7L, 9L, 11L	/UNV1	65°C	T4A	T4A	T3A	T4	T92°C
3L, 5L, 7L, 9L, 11L	/UNV34	40°C	T3C	T5	T3C	T4	T70°C
3L, 5L, 7L, 9L, 11L	/UNV34	55°C	T3A	T4A	T3A	T4	T85°C
3L, 5L, 7L, 9L, 11L	/UNV34	65°C	T3A	T4A	T3A	T4	T92°C



# Ordering information

Part number example  
**VMV11LW2AR1G/UNV1 S890 CNTRL-X**

## VMV 11L W 2A R1 G /UNV1 S890 CNTRL-X

Lamp/function	
<b>3L</b>	3,300 lumen LED
<b>5L</b>	5,300 lumen LED
<b>7L</b>	7,300 lumen LED
<b>9L</b>	9,300 lumen LED
<b>11L</b>	11,300 lumen LED

Color temperature	
<b>BLANK</b>	Cool (5000K), colored
<b>W</b>	Warm (3000K)

Mounting style			
<b>BLANK</b>	No cover	<b>2C</b>	¾" ceiling
<b>J</b>	1-½" stanchion, 25° angled	<b>3C</b>	1" ceiling
<b>P</b>	1-½" stanchion, straight	<b>20C</b>	20mm ceiling
<b>2A</b>	¾" pendant	<b>25C</b>	25mm ceiling
<b>3A</b>	1" pendant	<b>2HA</b>	¾" flexible pendant
<b>20A</b>	20mm pendant	<b>2TW</b>	¾" wall
<b>25A</b>	25mm pendant	<b>3TW</b>	1" wall
<b>2B</b>	¾" cone pendant	<b>20TW</b>	20mm wall
<b>3B</b>	1" cone pendant	<b>25TW</b>	25mm wall

Accessories (ordered separately)	
<b>D2S20</b>	Photocell, 120V, 50/60 Hz
<b>D2S208 277</b>	Photocell, 208-277V
<b>VMVL S812 K1</b>	Trunnion mount kit with pin

Guard	
<b>BLANK</b>	No guard
<b>G</b>	P3001 wire guard

Voltage	
<b>/UNV1</b>	120-277 VAC, 50/60 Hz; 108-250 VDC, 50/60 Hz

Optics	
<b>BLANK</b>	Type V optic standard <i>(all mounts)</i>
<b>R1</b>	Type I optic <i>(all mounts minus ceiling)</i>
<b>R1A</b>	Type I optic <i>(ceiling with conduit 45° counterclockwise or 135° clockwise from hinge)</i>
<b>R1B</b>	Type I optic <i>(ceiling with conduit 45° clockwise or 135° counterclockwise from hinge)</i>
<b>R3</b>	Type III optic <i>(all mounts minus ceiling)</i>
<b>R3AP</b>	Type III optic <i>(select when using Appleton® top hat adapter with Champ fixture)</i>
<b>R3A1</b>	Type III optic <i>(ceiling with conduit 45° counterclockwise from top hat hinge)</i>
<b>R3A2</b>	Type III optic <i>(ceiling with conduit 135° clockwise from top hat hinge)</i>
<b>R3B1</b>	Type III optic <i>(ceiling with conduit 45° clockwise from top hat hinge)</i>
<b>R3B2</b>	Type III optic <i>(ceiling with conduit 135° counterclockwise from top hat hinge)</i>

Control options*	
<b>CNTRL-X</b>	Controller unit only
<b>HZS-X12</b>	Sensor unit with controller (up to 30 ft. mounting option)
<b>HZS-X40</b>	Sensor unit with controller (30-40 ft. mounting option)

\* Sensor and controller units not available with UNV34 driver.

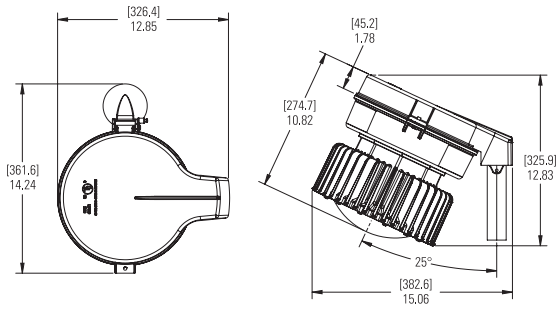
Suffixes	
<b>S812*</b>	Trunnion mount kit with pin
<b>S831</b>	Safety cable
<b>S890</b>	Quick clip
<b>S891</b>	Diffused lens
<b>S892**</b>	Redundant driver
<b>S896</b>	Teflon coated lens
<b>S903</b>	Polycarbonate lens
<b>TB6</b>	Six-pole terminal block

\* Order with ceiling mount only.  
 \*\* Available for 5L, 7L, and 9L. Redundant driver standard on 11L model.  
 7L = 6,616 lumens with S892 suffix.

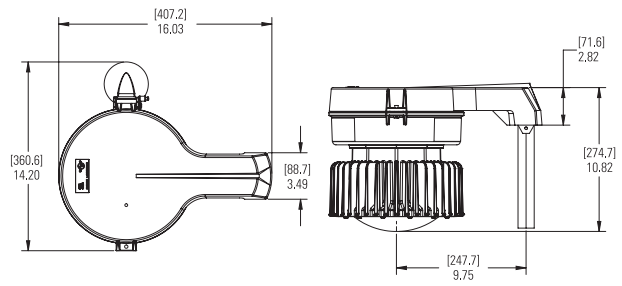
**Lighting layout & design services:**  
 Let us help you design your next big project!  
**Contact Crouse-Hinds Customer Service**  
 crousecustomerctr@eaton.com  
 (866) 764-5454

# Mounting options and dimensions

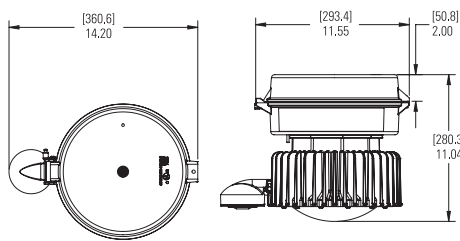
## Stanchion - 25° angled



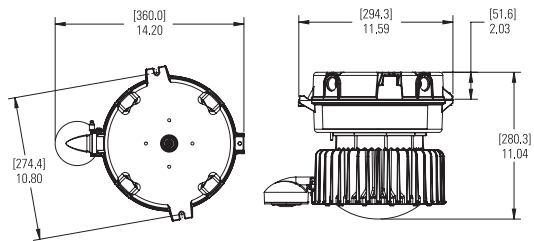
## Stanchion - straight



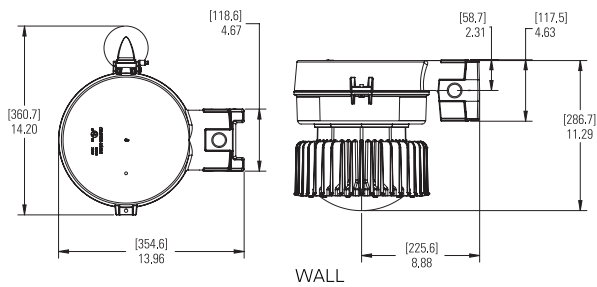
## Pendant



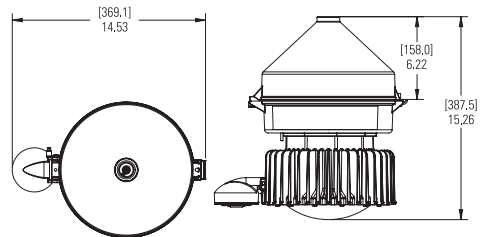
## Ceiling



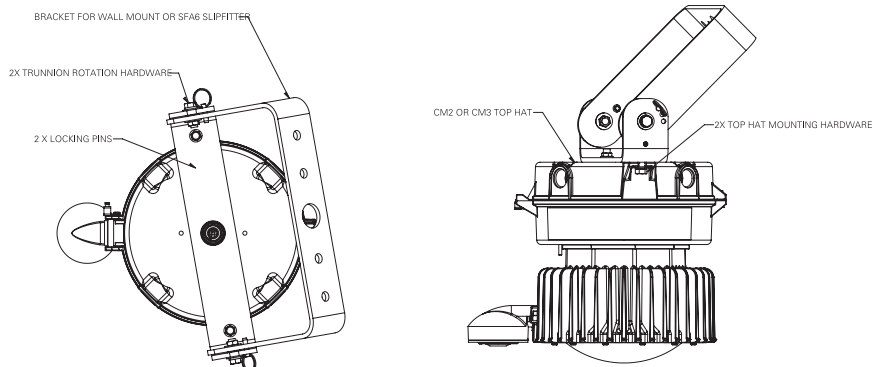
## Wall



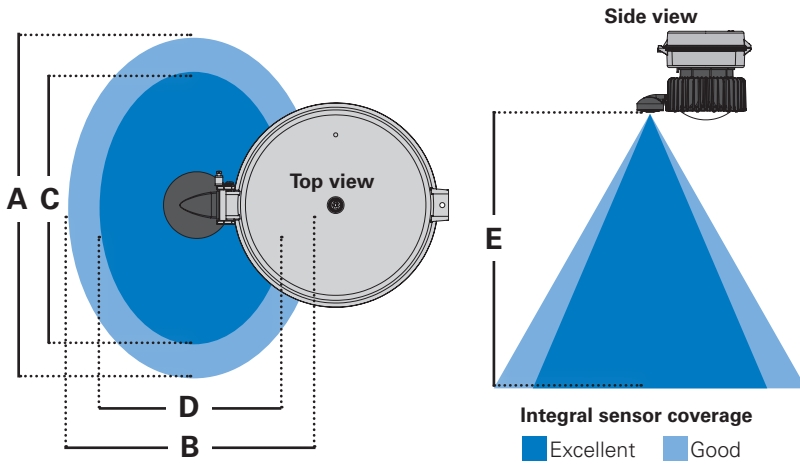
## Cone pendant



## Trunnion



# Integral sensor coverage



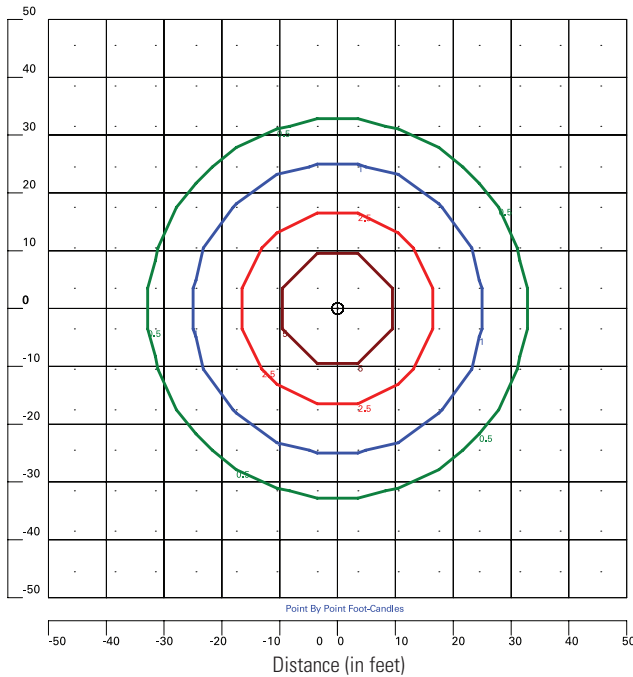
Sensor	Good coverage		Excellent coverage		Height
	A	B	C	D	
X12	15	12	12	9	12
	40	36	36	30	30

Sensor	Good coverage		Excellent coverage		Height
	A	B	C	D	
X40	48	42	36	36	40

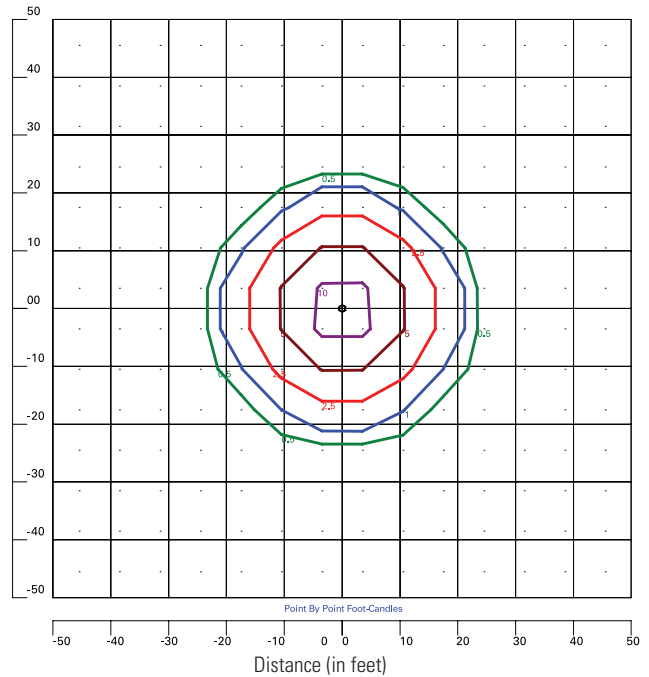
All dimensions in feet

# Photometric comparison at 15 ft. mounting height

175W PSMH - Type V



Connected VMV7L - Type V



Type V optical pattern



Calculation summary

Label	Calc. type (in Fc)	Avg.	Max.	Min.
VMV 175W MH Grid	Illuminance	0.83	7.2	0.0
VMV LED Grid	Illuminance	0.64	11.2	0.0



**Higher uniformity and distribution coverage with less lumens and energy consumption compared to 175W metal halide.**

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

1201 Wolf Street  
Syracuse, NY 13208

(866) 764-5454  
FAX: (315) 477-5179  
FAX Orders Only:  
(866) 653-0640

[crousecustomerctr@eaton.com](mailto:crousecustomerctr@eaton.com)

**For more information:**

If further assistance is required, please contact an authorized Eaton Distributor, Sales Office, or Customer Service Department.

**Canada**

Toll Free: 800-265-0502  
FAX: (800) 263-9504  
FAX Orders only: (866) 653-0645

**Mexico/Latin America/Caribbean**

52-555-804-4000  
FAX: 52-555-804-4020  
[ventascentromex@eaton.com](mailto:ventascentromex@eaton.com)

**Europe (Germany)**

49 (0) 6271 806-500  
49 (0) 6271 806-476  
[sales.CCH.de@cooperindustries.com](mailto:sales.CCH.de@cooperindustries.com)

**Middle East (Dubai)**

971 4 8066100  
FAX: 971 4 8894813  
[chmesales@eaton.com](mailto:chmesales@eaton.com)

**Singapore**

65-6645-9888  
FAX: 65-6297-4819  
[chsi-sales@cooperindustries.com](mailto:chsi-sales@cooperindustries.com)

**China**

86-21-2899-3600  
FAX: 86-21-2899-4055  
[cchsales@cooperindustries.com](mailto:cchsales@cooperindustries.com)

**Korea**

82-2-3484-6783  
82-2-3484-6778  
[CCHK-sales@cooperindustries.com](mailto:CCHK-sales@cooperindustries.com)

**Australia**

61-2-8787-2777  
FAX: 61-2-9609-2342  
[CEASales@cooperindustries.com](mailto:CEASales@cooperindustries.com)

**India**

91-124-4683888  
FAX: 91-124-4683899  
[cchindia@cooperindustries.com](mailto:cchindia@cooperindustries.com)

**Eaton**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
[Eaton.com](http://Eaton.com)

© 2018 Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 5387-1118  
November 2018

Eaton is a registered trademark.  
All other trademarks are property of their respective owners.