

# HLDMP

FAR-UVC Filtered 222nm Disinfection Technology  
Pendant with Cord



## Typical Applications

- Nonresidential Hospitality
- Healthcare Facilities
- Offices
- Conference Rooms
- Educational facilities
- Public Spaces

## Dimensions: Inches (millimeters) unless otherwise noted.

Diameter: 5.5 (139.7)  
Height: 6 3/8 (161.9)  
Weight: Approx. 8 lbs. (3.63kg) (CJB) 9.2 lbs.(4.17kg) (CJBSC)

Catalog Number	
Notes	Type

## Description

- Featuring Care222® far-UVC disinfection\* technology with patented filter for narrow band 222nm emission.
- Care222 technology operates continually and meets exposure guidelines for occupied space established by the American Conference of Governmental Industrial Hygienists (ACGIH)<sup>1</sup>
- Targets the air and surfaces for pathogen control.<sup>2</sup>
- LED status indicator visible from room.
- Discreet form factor for merging into existing interior spaces.
- Recessed or surface junction box mounting configurations available.
- Ideal applications include nonresidential hospitality, healthcare facilities, offices, conference rooms, educational facilities, and other public spaces.
- UV module designed for easy replacement.
- Multiple paint color finishes standard.

## UV Disinfection\* Technology

- Reference pages 5-6 of this document under Projected Virus Inactivation and Projected Bacteria Inactivation.
- Application design layout and associated projected reduction of pathogenic bioburden available by requesting a consultation with an [Acuity Brands UV Lighting Specialist](#)

## Electrical

- Single circuit; Not intended for use with wall switches. Connect to an unswitched circuit intended for 24/7/365 continuous operation.
- 120-277 V, 50/60HZ, consuming 14 watts.
- Requires no external controls or startup commissioning.

## Dosing Duration

- UV lamp module will operate on 12-minute cycles for a duration of between 10 and 50 seconds per cycle. The duration will depend on the specific dose chosen to meet the application design requirements.

## Source

- Care222® mercury-free far-UVC excimer lamp. Emits a soft violet glow from 1.75" x 2.38" [44.5mm x 60.3mm] opening when powered.

## Wavelength

- Emitted Wavelength Range is 200 nm ~ 230 nm with Peak Wavelength at 222 nm far-UVC.

## Power Factor

- At 120volt = 99% with a maximum input current of .14 amps and at 277volt = 91% with a maximum input current of .06 amps.

## Mechanical

- Painted in durable polyester powder coat paint with anti microbial\*\* additive. Available in six standard solid colors.
- Extruded aluminum cylinder housing construction.
- For new or existing ceiling construction types. Designed for installation to 4" [101.6mm] recessed or surface octagon or square junction box.
- Patented short pass filter for narrow band 222nm emission that removes longer wavelengths that can penetrate the living tissue in skin or beyond the top layer of cornea in the eye. Enables operation that can meet ACGIH® guidelines for occupied space.

## Listings

- UL certified to meet U.S. standards as germicidal equipment for use in occupied spaces.
- Suitable for damp locations.
- For use in ambient temperatures ranging from +32°F to +104°F [+0°C to +40°C].

## Registration Information

- EPA Est. No.: 97727-IN-1

## Precautionary Statements

- Emitters used in this fixture are in the EXEMPT RISK GROUP for photobiological risk, as described in IEC 62471, when correctly commissioned and properly installed in accordance with written instructions.
- See Installation Instructions [\[link\]](#) for proper usage guidelines and warnings regarding risks resulting from misuse.
- See below for information about potential limited photodegradation of materials.
- This fixture may generate ozone. Each emitter in the fixture has an ozone emission maximum concentration of 0.001 ppm over an 8-hour period, as tested in accordance with UL 867. Precautions that can be taken, if needed, to ensure that ozone concentration stays within applicable permissible exposure limits are described in the Installation Instructions [\[link\]](#).

## Buy American Act

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to [www.acuitybrands.com/buy-american](#) for additional information.

## Warranty

2-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms are located under Acuity Brands UV Lighting: [www.acuitybrands.com/support/warranty/terms-and-conditions](#)

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

## Disclaimer

\*All references to "disinfection" are referring generally to bioburden reduction and are not intended to refer to any specific definition of the term as may be used for other purposes by the U.S. Food and Drug Administration or the U.S. Environmental Protection Agency. Bioburden reduction is a function of fixture run time and the distance to the UV light source, airflow, room size, shadow areas and/or other factors, and the level of reduction will vary within a specific space. These fixtures are not intended for use in the cure, mitigation or prevention of disease and are not certified or approved for use as or for the disinfection of medical devices by the FDA. It is the obligation of the end-user to consult with appropriately qualified Professional Engineer(s), a Certified Infection Control professional and a Certified Industrial Hygienist, as applicable, to determine whether these fixtures meet the applicable requirements for system performance, code compliance, safety (including safety and hazard alerting signs), suitability and effectiveness for use in a particular application design.

\*\*Antimicrobial properties are built in to inhibit the growth of bacteria that may affect this product. The antimicrobial properties do not protect users or others against bacteria, viruses, germs or other pathogens.

1. ACGIH® 2021 TLVs® and BEIs® - Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices; when installed and used in accordance with written instructions.

2. Reference pages 5-6 of this document under Projected Virus Inactivation and Projected Bacteria Inactivation

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FAR-UVC Filtered 222nm Disinfection Technology Pendant with Cord



ORDERING INFORMATION

Example: HLDMP L6 120B UV222 D108 MVOLT HJBA CJB DL C45D DMBAMCY DMBAM

Series	Fixture Length	Suspension Length	Wavelength	Programming	Voltage	Mount Adapter
HLDPMC Healthcare Disinfect Pendant with Cord	L6 6 Inch Nominal	120B 120" black suspension cord 120G 120" gray suspension cord 120W 120" white suspension cord 180B 180" black suspension cord 180G 180" gray suspension cord 180W 180" white suspension cord 240B 240" black suspension cord 240G 240" gray suspension cord 240W 240" white suspension cord	UV222 222nm	D108 Dose Level for 108 inch (min) to 113.9 inch (max) Height from Floor to Module Face D114 Dose Level for 114 inch (min) to 119.9 inch (max) Height from Floor to Module Face D120 Dose Level for 120 inch (min) to 125.9 inch (max) Height from Floor to Module Face D126 Dose Level for 126 inch (min) to 131.9 inch (max) Height from Floor to Module Face D132 Dose Level for 132 inch (min) or Greater Height from Floor to Module Face	MVOLT 120-277 Volt	HJBA Square Junction Box Adapter
Mounting (See Table 1)		Canopy Type	Canopy Color		Primary Finish	
CJB Canopy over Recessed or Surface J-Box		C45D Cord Canopy with 45 degree swivel	DMBAMCY Matte black antimicrobial	DMBAM Antimicrobial matte black paint		
CJBSC Canopy over Surface J-Box with Conduit Connectors		C5D Cord canopy with 5 degree swivel	DMWAMCY Matte white antimicrobial	DMWAM Antimicrobial matte white paint		
			DNAMCY Gloss silver antimicrobial	DNAM Antimicrobial natural aluminum paint		
			DBLAMCY Gloss black antimicrobial	DBLAM Antimicrobial gloss black paint		
			DDBAMCY Bronze antimicrobial	DDBAM Antimicrobial dark bronze paint		
			DWAMCY Gloss white antimicrobial	DWAM Antimicrobial glossy white paint		

Table 1		
Junction Box Compatibility Matrix		
Junction Box (by others)	Canopy Type	
	CJB	CJBSC
4" Octagon 4x4x1.5 deep [101.6mm x 101.6mm x 38.1mm]	Yes	Yes
4" Octagon 4x4x2.125 deep [101.6mm x 101.6mm x 54.0mm]	Yes	No
4" Square 4x4x1.5 deep [101.6mm x 101.6mm x 38.1mm]	Yes*	No

\*Mount adapter HJBA required

For sale only in the United States of America and Mexico.

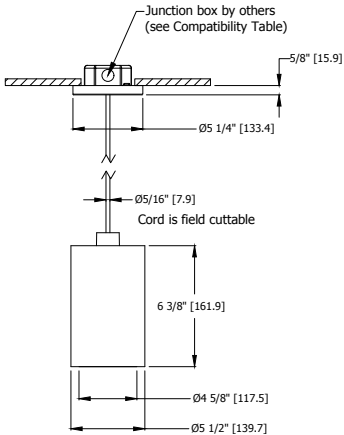
# HLDMP

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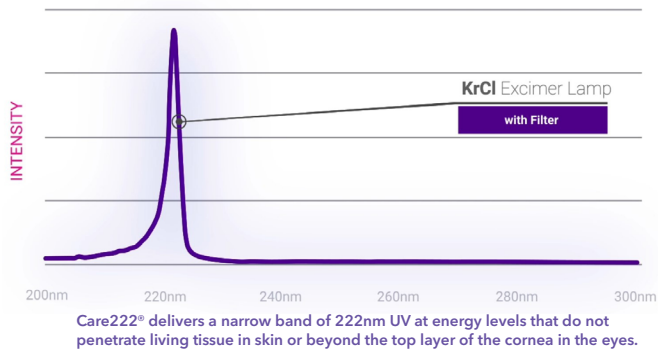


## DIMENSIONS

HLDMP



## WAVELENGTH SPECTRUM



## COMPANION UNIT(S)

### COMPANION LUMINAIRE(S)



**HLDMP L6**  
Module in Pendant Stem



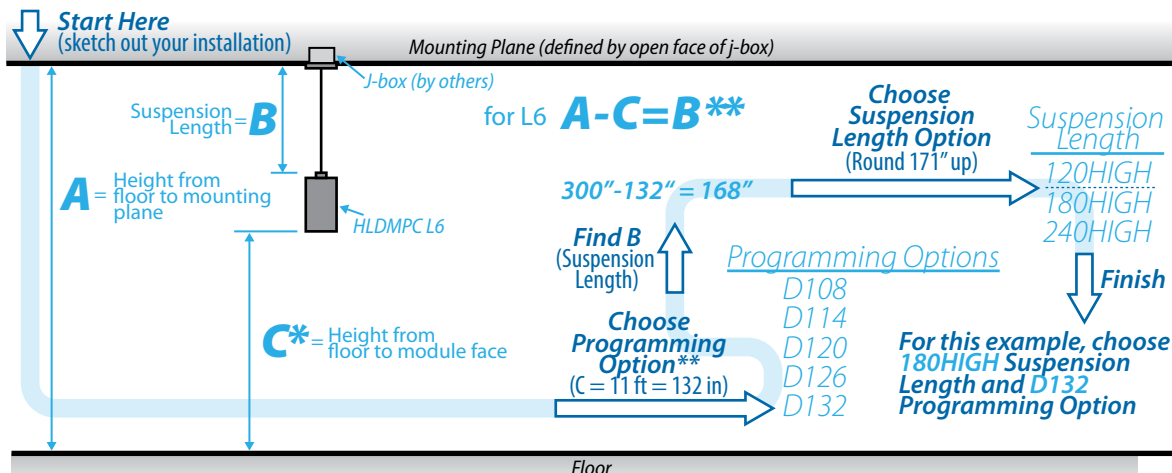
**HLDMP L6**  
Module in Surface Mount

## SUSPENSION LENGTH & PROGRAMMING OPTION

The Programming Option changes the duty cycle of the UV emitter activation to keep UV exposure levels in the occupied space (i.e. the portion that is 7 feet or less above finished floor) below ACGIH<sup>1</sup> published exposure limits. The correct Programming Option to specify depends on the height of the UV emitter module face above the floor.

Example: HLDMP L6 (mounted from recessed j-box in 25ft ceiling)

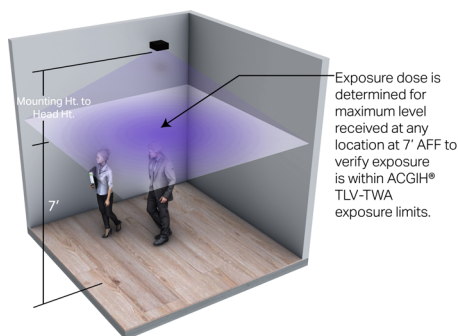
What Suspension Length and Programming Option should I select given my ceiling height and mounting options?



\*Choose the greatest height from floor to module face that your application will allow that matches one of the available Programming Options, up to 11ft (i.e. 132"), to optimize projected inactivation. See projected inactivation tables below for details.

\*\*Leaves 6" for strip length in j-box

## Projected UV Exposure and Exposure Limits

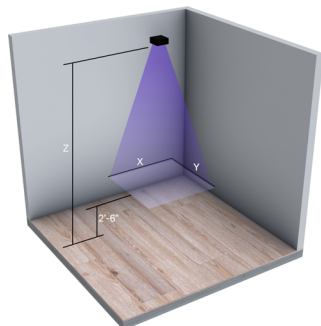


This chart illustrates mounting height configurations for the HLDMP fixture, incorporating Care222<sup>®</sup> technology, that provide a UV exposure dose within the exposure guidelines<sup>1</sup> established and published by the American Conference of Governmental Industrial Hygienists (ACGIH<sup>®</sup>). For the UV exposure dose to remain within the ACGIH guidelines for the level of UV exposure a typical worker can be exposed to without adverse health effects, the maximum exposure dose must not exceed 23 mJ/cm<sup>2</sup> (millijoules per square centimeter) for an 8-hour period of time. Per the UL 8802 standard, the upper limit of occupied space is defined to be a test plane 7' Above Finished Floor (AFF). This calculated maximum exposure dose represents the dose an individual would receive over an 8-hour period at 7' Above Finished Floor (AFF) even if stationary in the location of maximum dose. The levels of exposure in the ACGIH guidelines are quantified as Threshold Limit Values (TLVs<sup>®</sup>) and are expressed as Time-Weighted Averages (TWAs). The TLVs for incoherent ultraviolet (UV) radiation are established for wavelengths between 180 and 400 nm and represent conditions under which it is believed that nearly all healthy workers may be repeatedly exposed without acute adverse health effects such as erythema and photokeratitis. ACGIH guidelines are designed for use by industrial hygienists in making decisions regarding safe levels of exposure to hazards in the workplace.

1. ACGIH<sup>®</sup> 2021 TLVs<sup>®</sup> and BEIs<sup>®</sup> - Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.

Distance		Maximum 8 hr Dose	Meets ACGIH <sup>®</sup> TLV-TWA
Mounting Ht.	Mounting Ht. to Head Ht.	mJ/cm <sup>2</sup>	<23 mJ/cm <sup>2</sup>
9'	2'	18.99	Yes
9'-6"	2'-6"	20.26	Yes
10'	3'	19.7	Yes
10'-6"	3'-6"	20.26	Yes
11'	4'	19.31	Yes
11'-6"	4'-6"	15.26	Yes
12'	5'	12.36	Yes

### Projected Virus Inactivation



Use this chart to estimate the effectiveness of one HLDMP fixture, mounted at various mounting heights (Z) and having different areas of coverage (X x Y), at inactivating the pathogens listed below on surfaces. The calculated average dose for each scenario is determined from Visual® Lighting application software radiometric modeling¹ and is then correlated with laboratory research² to derive projected inactivation effectiveness for specific pathogens. The analysis assumes that a horizontal plane positioned 2'-6" Above Finished Floor (AFF) is receiving the dose. For different areas of coverage or multiple fixture layouts, consult an Acuity Brands UV Lighting Specialist.

1. The results presented here are based upon a 12'x12'x15' high empty room with all surface reflectance assumed to be 5%.
2. Reference Pathogen Inactivation Dose Reference List - 222nm, 254nm & Pulsed Xenon UV Light Sources.
3. As a result of computational limitations and simplifying modeling assumptions in Visual, variations in actual product performance from tested product samples, and/or variations in field conditions from laboratory testing conditions, the accuracy of calculated output values identifying radiometric quantities and any resulting derived radiation dose predictions may be adversely affected. See complete disclaimer at: [VISUAL LIGHTING DISCLAIMER](#)

4' x 4' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	Feline Calicivirus			Influenza			SARS-CoV-2		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	4.6	81.0%	33.3	100.0	99.5%	10.4	31.3	>99.9%	6.3	18.8
D114	9'-6"	6.8	91.2%	22.7	68.1	>99.9%	7.1	21.3	>99.9%	4.3	12.8
D120	10'	8.4	95.1%	18.3	54.9	>99.9%	5.7	17.2	>99.9%	3.4	10.3
D126	10'-6"	10.4	97.7%	14.7	44.1	>99.9%	4.6	13.8	>99.9%	2.8	8.3
D132	11'	11.7	98.5%	13.2	39.5	>99.9%	4.1	12.4	>99.9%	2.5	7.4
D132	12'	9.5	96.7%	16.2	48.5	>99.9%	5.1	15.2	>99.9%	3.0	9.1

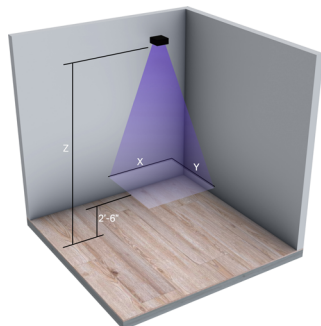
6' x 6' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	Feline Calicivirus			Influenza			SARS-CoV-2		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	3.8	74.4%	40.6	121.7	98.7%	12.7	38.1	>99.9%	7.6	22.9
D114	9'-6"	5.7	87.3%	26.8	80.4	99.9%	8.4	25.2	>99.9%	5.0	15.1
D120	10'	7.3	92.7%	21.1	63.3	>99.9%	6.6	19.8	>99.9%	4.0	11.9
D126	10'-6"	9.2	96.4%	16.6	49.9	>99.9%	5.2	15.6	>99.9%	3.1	9.4
D132	11'	10.4	97.7%	14.7	44.1	>99.9%	4.6	13.8	>99.9%	2.8	8.3
D132	12'	8.7	95.7%	17.6	52.9	>99.9%	5.5	16.6	>99.9%	3.3	9.9

8' x 8' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	Feline Calicivirus			Influenza			SARS-CoV-2		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	2.8	63.8%	54.4	163.1	96.1%	17.0	51.1	99.6%	10.2	30.6
D114	9'-6"	4.5	79.9%	34.4	103.3	99.4%	10.8	32.4	>99.9%	6.5	19.4
D120	10'	5.8	87.8%	26.2	78.8	99.9%	8.2	24.7	>99.9%	4.9	14.8
D126	10'-6"	7.7	93.7%	20.0	60.1	>99.9%	6.3	18.8	>99.9%	3.8	11.3
D132	11'	8.9	95.9%	17.3	51.8	>99.9%	5.4	16.2	>99.9%	3.2	9.7
D132	12'	7.7	93.7%	20.0	60.0	>99.9%	6.3	18.8	>99.9%	3.8	11.3

10' x 10' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	Feline Calicivirus			Influenza			SARS-CoV-2		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	2.0	51.4%	76.6	230.0	90.0%	24.0	72.0	97.8%	14.4	43.2
D114	9'-6"	3.3	69.0%	47.2	141.5	97.6%	14.8	44.3	99.8%	8.9	26.6
D120	10'	4.4	79.7%	34.7	104.0	99.4%	10.9	32.6	>99.9%	6.5	19.5
D126	10'-6"	6.0	88.3%	25.7	77.2	99.9%	8.1	24.2	>99.9%	4.8	14.5
D132	11'	7.1	92.3%	21.6	64.7	>99.9%	6.8	20.3	>99.9%	4.1	12.2
D132	12'	6.4	90.2%	23.8	71.4	>99.9%	7.5	22.4	>99.9%	4.5	13.4

12' x 12' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	Feline Calicivirus			Influenza			SARS-CoV-2		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	1.4	40.5%	106.5	319.4	80.9%	33.3	100.0	93.7%	20.0	60.0
D114	9'-6"	2.4	57.4%	64.7	194.1	93.5%	20.3	60.8	98.9%	12.2	36.5
D120	10'	3.3	69.3%	46.7	140.2	97.7%	14.6	43.9	99.8%	8.8	26.3
D126	10'-6"	4.5	80.3%	34.0	102.0	99.4%	10.6	31.9	>99.9%	6.4	19.2
D132	11'	5.5	86.2%	27.9	83.6	99.8%	8.7	26.2	>99.9%	5.2	15.7
D132	12'	5.2	84.7%	29.5	88.4	99.7%	9.2	27.7	>99.9%	5.5	16.6

### Projected Bacteria Inactivation



Use this chart to estimate the effectiveness of one HLDMP fixture, mounted at various mounting heights (Z) and having different areas of coverage (X x Y), at inactivating the pathogens listed below on surfaces. The calculated average dose for each scenario is determined from Visual® Lighting application software radiometric modeling¹ and is then correlated with laboratory research² to derive projected inactivation effectiveness for specific pathogens. The analysis assumes that a horizontal plane positioned 2'-6" Above Finished Floor (AFF) is receiving the dose. For different areas of coverage or multiple fixture layouts, consult an Acuity Brands UV Lighting Specialist.

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4' x 4' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	MRSA			E-Coli			Salmonella		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	4.6	91.0%	23.0	100.0	99.5%	10.4	31.3	>97.5%	14.9	44.8
D114	9'-6"	6.8	97.1%	15.7	68.1	>99.9%	7.1	21.4	>99.6%	10.2	30.5
D120	10'	8.4	98.7%	12.6	54.9	>99.9%	5.7	17.2	>99.9%	8.2	24.6
D126	10'-6"	10.4	99.6%	10.1	44.1	>99.9%	4.6	13.8	>99.9%	6.6	19.7
D132	11'	11.7	99.8%	9.1	39.5	>99.9%	4.1	12.4	>99.9%	5.9	17.7
D132	12'	9.5	99.3%	11.1	48.5	>99.9%	5.1	15.2	>99.9%	7.2	21.7

6' x 6' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	MRSA			E-Coli			Salmonella		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	3.8	86.1%	28.0	83.9	98.7%	12.7	38.1	95.2%	18.2	54.5
D114	9'-6"	5.7	95.0%	18.5	55.4	>99.9%	8.4	25.2	99.0%	12.0	36.0
D120	10'	7.3	97.8%	14.6	43.7	>99.9%	6.6	19.8	99.7%	4.0	28.4
D126	10'-6"	9.2	99.2%	11.5	34.4	>99.9%	5.2	15.6	>99.9%	3.1	22.4
D132	11'	10.4	99.6%	10.1	30.4	>99.9%	4.6	13.8	>99.9%	2.8	19.7
D132	12'	8.7	98.9%	12.2	36.5	>99.9%	5.5	16.6	>99.9%	3.3	23.7

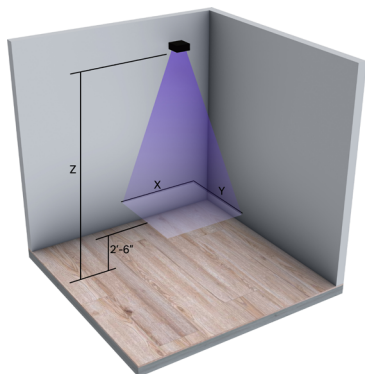
8' x 8' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	MRSA			E-Coli			Salmonella		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	2.8	77.1%	37.5	112.5	96.1%	17.0	51.1	89.6%	24.4	73.1
D114	9'-6"	4.5	90.2%	23.8	71.3	>99.4%	10.8	32.4	97.2%	15.4	46.3
D120	10'	5.8	95.3%	18.1	54.3	>99.9%	8.2	24.7	>99.1%	11.8	35.3
D126	10'-6"	7.7	98.2%	13.8	41.5	>99.9%	6.3	18.8	>99.8%	9.0	27.0
D132	11'	8.9	99.0%	11.9	35.8	>99.9%	5.4	16.2	>99.9%	7.7	23.2
D132	12'	7.7	98.2%	13.8	41.3	>99.9%	6.3	18.8	>99.8%	9.0	26.9

10' x 10' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	MRSA			E-Coli			Salmonella		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	2.0	64.8%	52.9	158.6	90.0%	24.0	72.1	80.0%	34.4	103.1
D114	9'-6"	3.3	81.7%	32.5	97.6	97.6%	14.8	44.4	92.7%	21.1	63.4
D120	10'	4.4	90.1%	23.9	71.8	99.4%	10.9	32.6	97.1%	15.5	46.6
D126	10'-6"	6.0	95.6%	17.7	53.2	99.9%	8.1	24.2	99.2%	11.5	34.6
D132	11'	7.1	97.6%	14.9	44.6	>99.9%	6.8	20.3	99.7%	9.7	29.0
D132	12'	6.4	96.5%	16.4	49.2	>99.9%	7.5	22.4	99.4%	10.7	32.0

12' x 12' Area (X x Y)		Calculated Average Dose³	Surface Pathogen Inactivation¹								
Programming	Mounting Height(Z)	mJ/cm²	MRSA			E-Coli			Salmonella		
			% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%	% in 24 Hours	Hrs to 90%	Hrs to 99.9%
D108	9'	1.4	52.9%	73.4	220.2	80.9%	33.4	100.1	68.6%	47.7	143.2
D114	9'-6"	2.4	71.0%	44.6	133.8	93.5%	20.3	60.8	85.1%	29.0	87.0
D120	10'	3.3	82.0%	32.2	96.7	97.7%	14.6	43.9	92.8%	21.0	62.9
D126	10'-6"	4.5	90.5%	23.4	70.3	99.4%	10.7	32.0	97.3%	15.2	45.7
D132	11'	5.5	94.4%	19.2	57.7	99.8%	8.7	26.2	98.8%	12.5	37.5
D132	12'	5.2	93.4%	20.3	61.0	99.7%	9.2	27.7	98.5%	13.2	39.6



## Projected Photodegradation Effect



Use the "Years to 54,000 mJ/cm<sup>2</sup>" data reported on the chart (below left) to estimate the photodegradation effect on surfaces resulting from UV irradiation from one from one HDMC fixture, with the coverage areas (X x Y)<sup>1</sup> and at the mounting heights specified in the tables above. The calculated average dose<sup>2</sup> for each scenario identified in the chart (below left) is determined from Visual<sup>1</sup> Lighting application software radiometric modeling and is used to calculate the amount of time required to reach the dose used in independent laboratory photodegradation testing<sup>3</sup>. The analysis assumes that a horizontal plane positioned 2'-6" Above Finished Floor (AFF) is receiving the dose. Note that the calculated doses as presented in the chart (below left) are average values on the designated calculation plane. Calculated doses at specific points may be higher or lower than the average value. To estimate the photodegradation effect for different areas of coverage, at specific points, or multiple fixture layouts, consult an Acuity Brands UV Lighting Specialist.

1. The results presented here are based upon a 12'x12'x15' high empty room with all surface reflectance assumed to be 5%.
2. As a result of computational limitations and simplifying modeling assumptions in Visual, variations in actual product performance from tested product samples, and/or variations in field conditions from laboratory testing conditions, the accuracy of calculated output values identifying radiometric quantities and any resulting derived radiation dose predictions may be adversely affected. See complete disclaimer at [VISUAL LIGHTING DISCLAIMER](#)
3. Independent laboratory photodegradation testing performed by Assured Testing Services, Ridgeway, PA, Test Report 28545, August 12, 2020.

4'x4' Area (X x Y)		Calculated Avg. 24hr Dose <sup>5</sup>	Years to Dose of 54,000 mJ/cm <sup>2</sup> *
Programming Option	Mounting Ht (Z)	mJ/cm <sup>2</sup>	
D108	9'	4.6	32.16
D114	9.5'	6.8	21.76
D120	10'	8.4	17.61
D126	10.5'	10.4	14.23
D132	11'	11.7	12.64
D132	12'	9.5	15.57























6' x 6' Area (X x Y)		Calculated Avg. 24hr Dose <sup>5</sup>	Years to Dose of 54,000 mJ/cm <sup>2</sup> *
Programming Option	Mounting Ht (Z)	mJ/cm <sup>2</sup>	
D108	9'	3.8	38.93
D114	9.5'	5.7	25.96
D120	10'	7.3	20.27
D126	10.5'	9.2	16.08
D132	11'	10.4	14.23
D132	12'	8.7	17.01

8' x 8' Area (X x Y)		Calculated Avg. 24hr Dose <sup>5</sup>	Years to Dose of 54,000 mJ/cm <sup>2</sup> *
Programming Option	Mounting Ht (Z)	mJ/cm <sup>2</sup>	
D108	9'	2.8	52.84
D114	9.5'	4.5	32.88
D120	10'	5.8	25.51
D126	10.5'	7.7	19.21
D132	11'	8.9	16.62
D132	12'	7.7	19.21

10' x 10' Area		Calculated Avg. 24hr Dose <sup>5</sup>	Years to Dose of 54,000 mJ/cm <sup>2</sup> *
Programming Option	Mounting Ht (Z)	mJ/cm <sup>2</sup>	
D108	9'	2.0	73.97
D114	9.5'	3.3	44.83
D120	10'	4.4	33.62
D126	10.5'	6.0	24.66
D132	11'	7.1	20.84
D132	12'	6.4	23.12

12' x 12' Area		Calculated Avg. 24hr Dose <sup>5</sup>	Years to Dose of 54,000 mJ/cm <sup>2</sup> *
Programming Option	Mounting Ht (Z)	mJ/cm <sup>2</sup>	
D108	9'	1.4	105.68
D114	9.5'	2.4	61.64
D120	10'	3.3	44.83
D126	10.5'	4.5	32.88
D132	11'	5.5	26.90
D132	12'	5.2	28.45

Photodegradation Testing Results<sup>3</sup>

		Photodegradation Effect at Dose of 54,000 mJ/cm <sup>2</sup> *		
Material	Before UV Exposure	After UV Exposure	Average Δ E**	Average Δ - Durometer Hardness***
Polyvinyl chloride (PVC)			27.27	3
Polypropylene			3.86	-1
Polyethylene			5.50	0
Polytetrafluoroethylene (PTFE)			1.02	0
Clear polymethyl methacrylate			2.50	3
White polymethyl methacrylate			9.08	-3
Polyoxymethylene			4.47	5
Polycarbonate			6.89	-3
Acrylonitrile butadiene styrene (ABS)			0.90	0
Polyester			1.13	-1
Nylon			6.77	-4

## Projected Photodegradation Effect (Continued)

Photodegradation Testing Results<sup>3</sup>

Material	Photodegradation Effect at Dose of 54,000 mj/cm <sup>2</sup>			
	Before UV Exposure	After UV Exposure	Average $\Delta E^{**}$	Average $\Delta$ - Durometer Hardness***
Cotton			2.12	N/A
Wool			2.73	N/A
Pine/Fir			7.79	1
Oak			8.73	-14
Poplar			11.65	-7
Low grade paper (copy paper)			4.15	N/A
Rag paper (stationary writing paper)			7.44	N/A
Oil paint on paper			1.47	N/A
Watercolors on rag paper			3.12	N/A
Window glass			0.11	N/A
Vinyl flooring			2.13	-2
Wall paper			3.83	N/A
Newsprint color			8.13	N/A
Barcode paper label			1.34	N/A

Independent Lab Test Results<sup>3</sup> for Determining Photodegradation Effect for Far-UVC Filtered 222nm technology (Care222<sup>®</sup>)

\* The independent test lab results compared materials at an initial state of no UV exposure and a final state of UV exposure at 54,000 mj/cm<sup>2</sup>.

\*\*  $\Delta E$  is a benchmark used to measure color difference compared to a known set of CIELAB color coordinates defined by the International Commission on Illumination (CIE). The Photodegradation Testing Results table presents data calculated by the CIE76 formula,  $\Delta E^{*ab}$ . CIE76 is a formula that relates a measured color difference to a known set of CIELAB coordinates.  $\Delta E^{*ab} \sim 2.3$  equates to a Just Noticeable Difference

\*\*\* Durometer Hardness is a benchmark of material hardness, as measured by a Shore Durometer device. The Photodegradation Testing Results table presents the difference in measured material hardness over the exposure dose. For the majority of the materials tested there was no or only a very small change in Durometer Hardness. Unvarnished Oak and Poplar showed some change in Durometer Hardness.

Comparing Far-UVC Filtered 222nm Disinfection Technology (Care222<sup>®</sup>) Photodegradation Effect to General Illumination Photodegradation Effect

To compare photodegradation caused by UV to photodegradation caused by general illumination, which also causes a photodegradation effect, a Just Noticeable Difference ( $\Delta E^{*ab} \sim 2.3$ ) in a space illuminated by a white light source to an illuminance of 50 fc would occur as soon as 6 months for highly sensitive materials and as long as 30 years for minimally sensitive materials.\* There is recognizable photodegradation of materials caused by almost all light sources including incandescent, fluorescent, halogen, metal halide, LED, and UV. While some UV sources, depending on spectral content and intensity, can cause substantial photodegradation, the information presented in the Photodegradation Testing Results table illustrates specifically the generally minimal photodegradation effect of far-UVC filtered 222nm technology (Care222<sup>®</sup>) when utilizing these products in typical application.

\* ANSI/IES RP-30-20 Recommended Practice: Lighting Museums, Table C-2

3. Independent laboratory photodegradation testing performed by Assured Testing Services, Ridgeway, PA, Test Report 28545, August 12, 2020.



# HLDMP

FAR-UVC Filtered 222nm Disinfection Technology Pendant with Cord

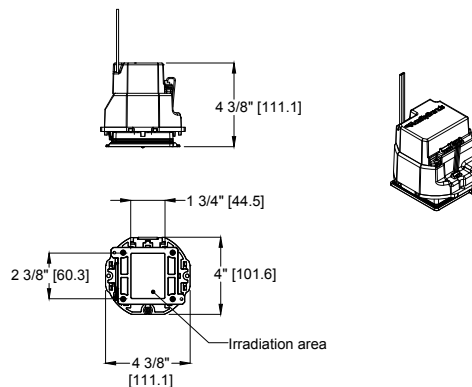
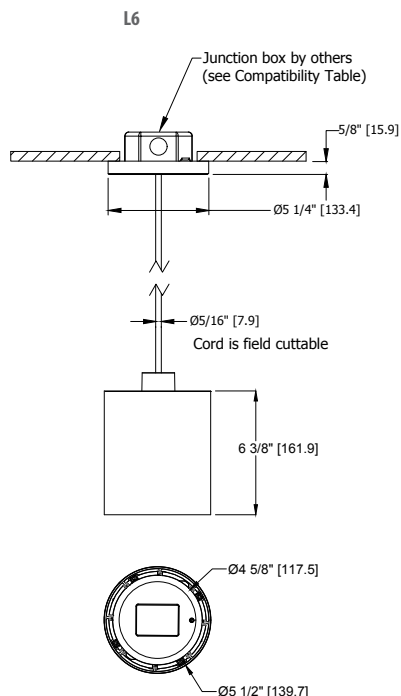
## DIMENSIONAL DATA

### HLDMP

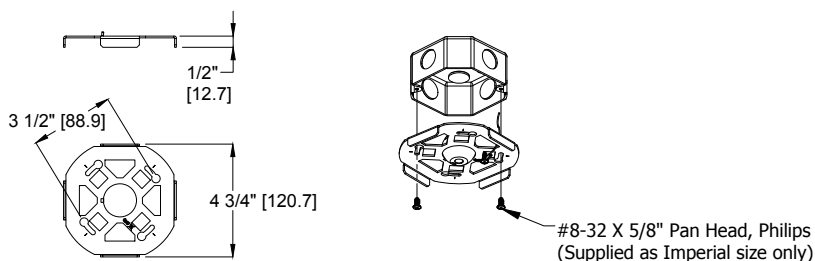
\*Reference installation document for field cutting cord

### Module

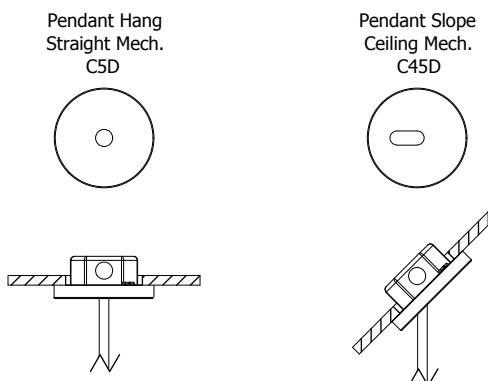
Ushio Care222® Mercury-Free Far-UVC Excimer Lamp



### HLDMP Mount Plate Detail



### Canopy Covers for Flat or Sloped Ceilings

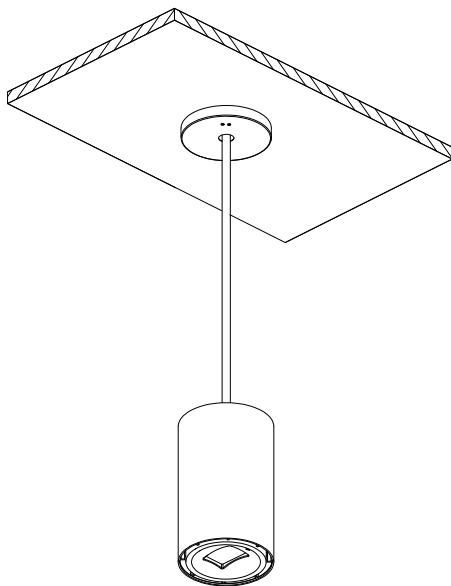


# HLDMP

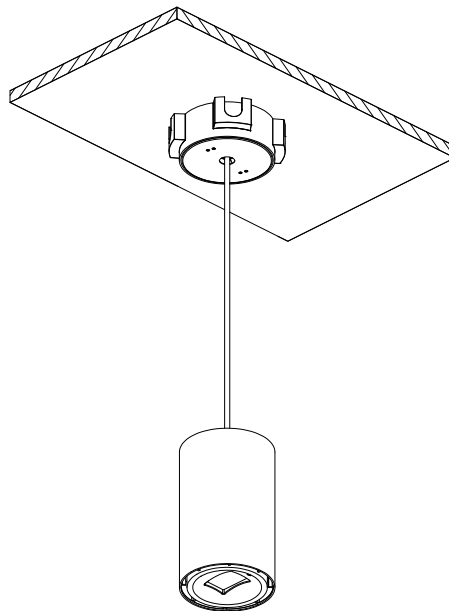
FAR-UVC Filtered 222nm Disinfection Technology Pendant with Cord

## DIMENSIONAL DATA

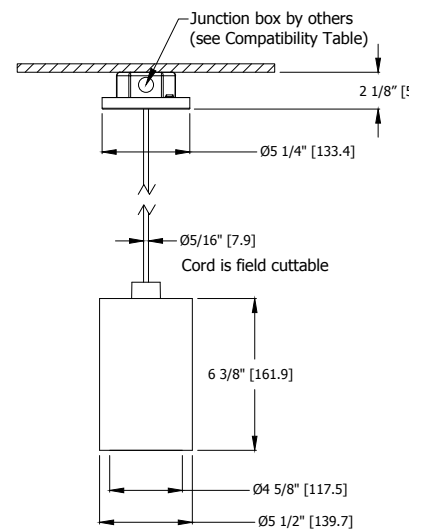
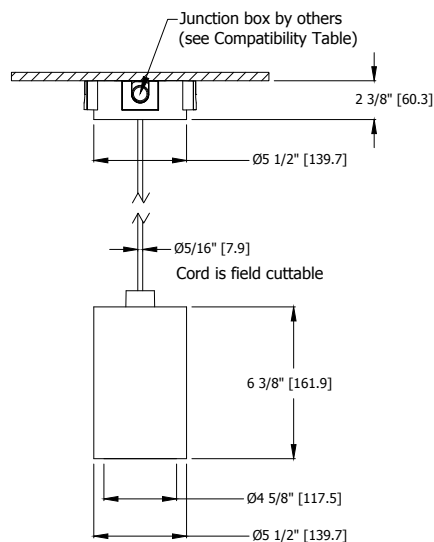
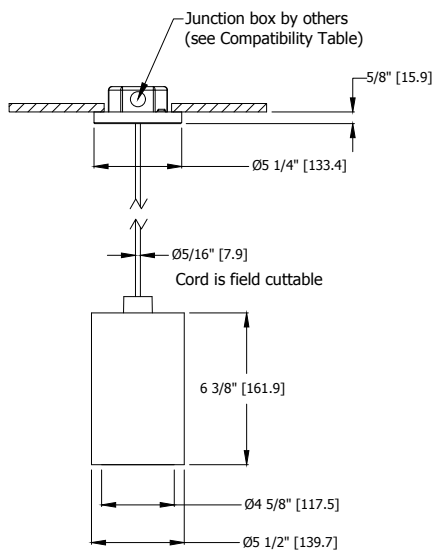
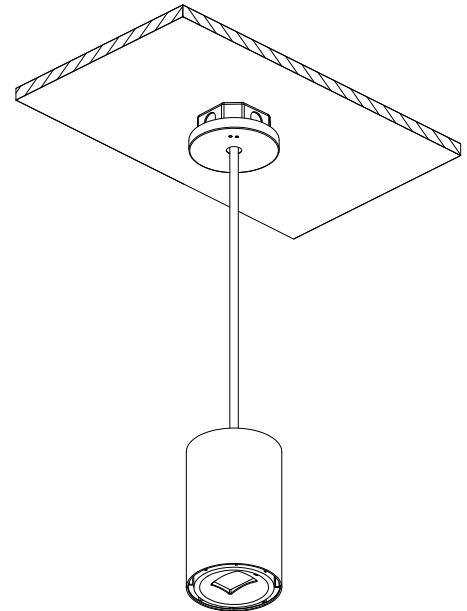
HLDMP with CJB Accessory over Recessed J-Box



HLDMP with CJBSC Accessory over Surface J-Box

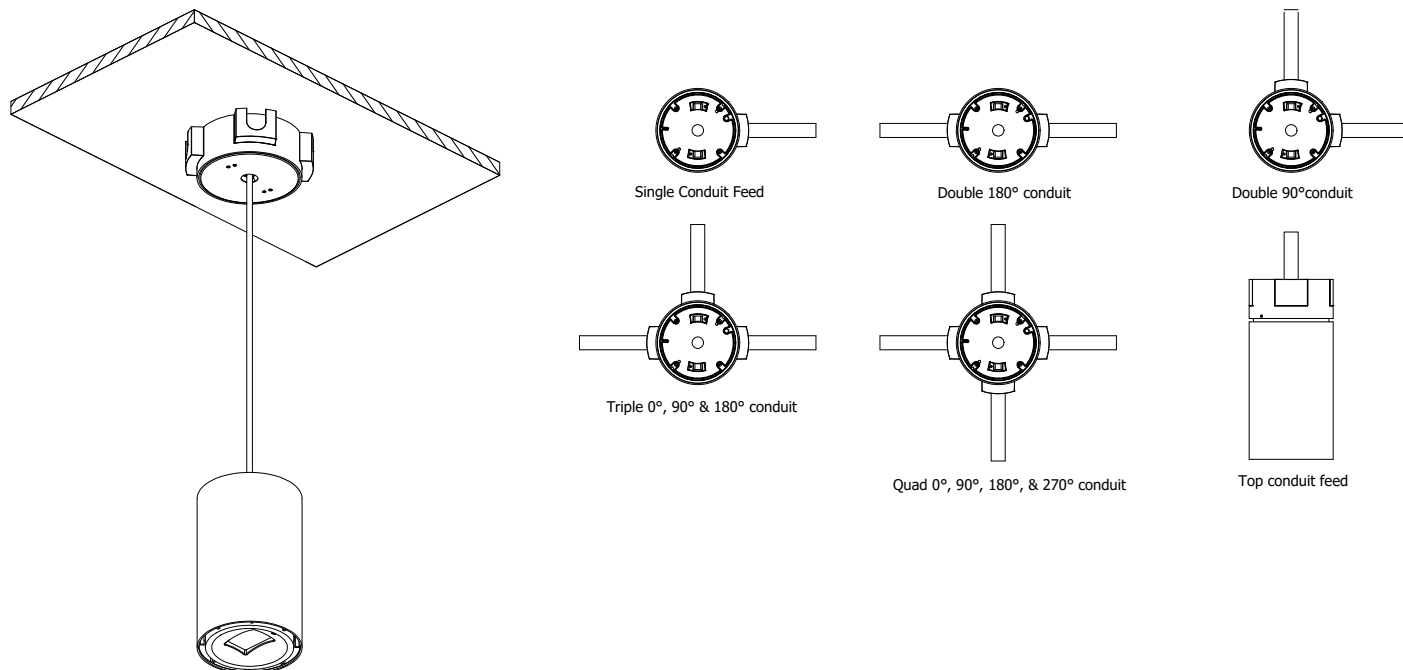


HLDMP with CJB Accessory over Surface J-Box

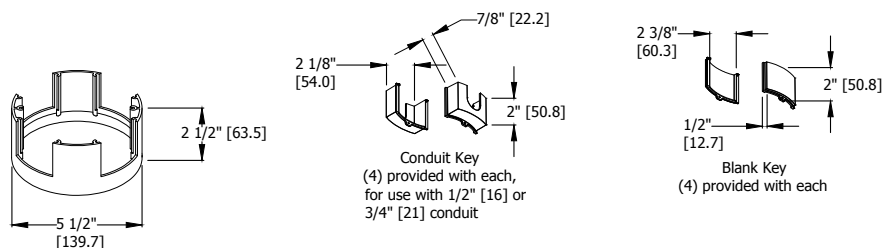


## ACCESSORIES

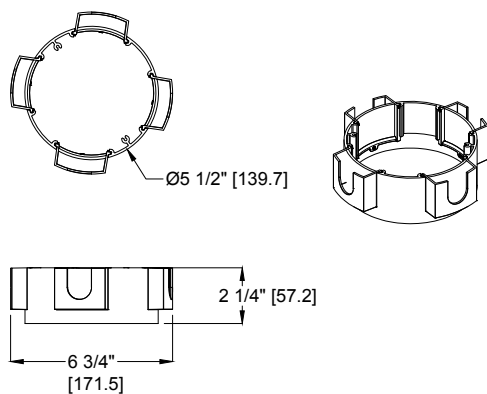
### CJBSC Conduit Feed Examples



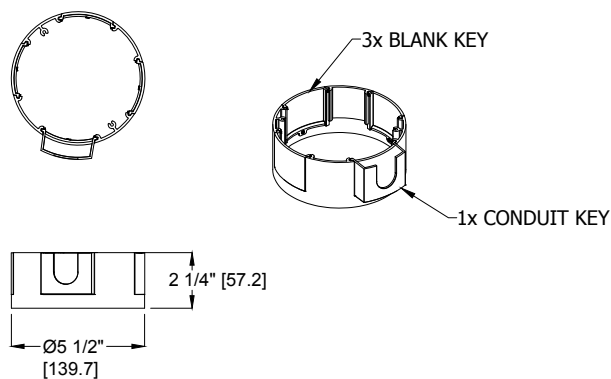
### CJBSC Accessory Details



#### Example w/ (4) Conduit Keys Installed

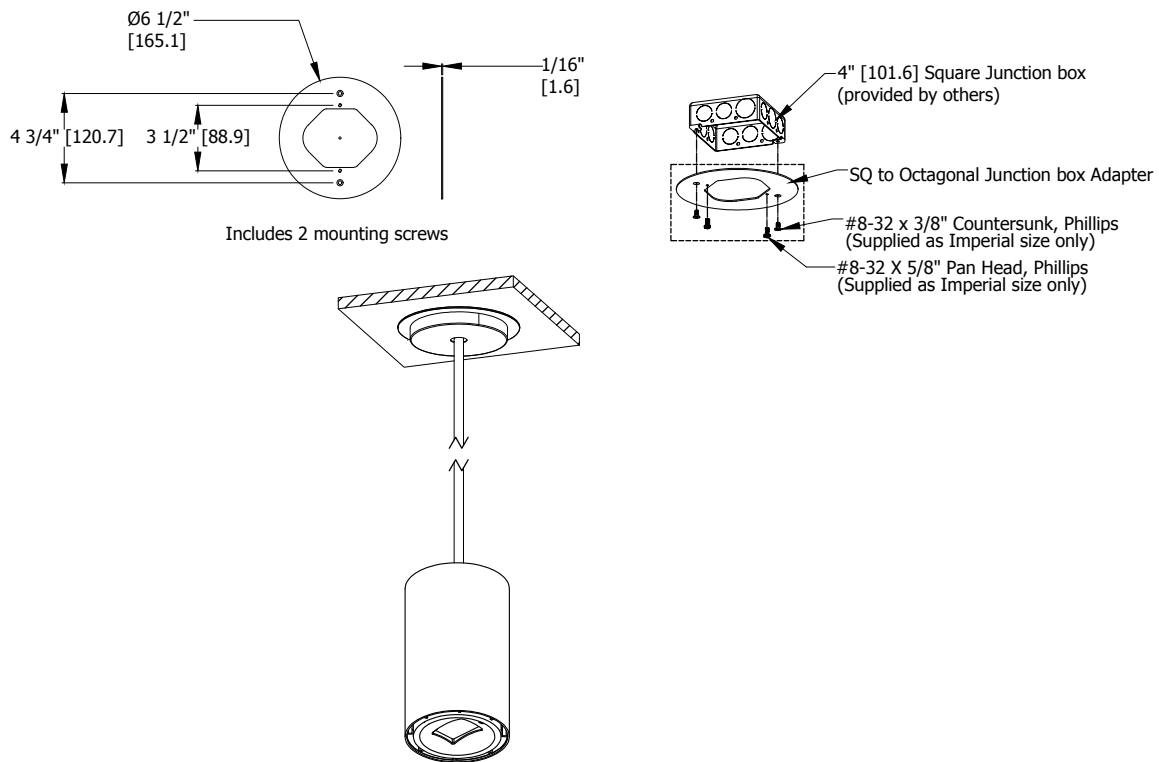


#### Example w/ (1) Conduit Key & (3) Blank Key Installed



## ACCESSORIES

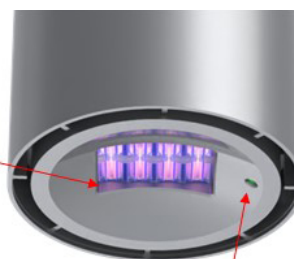
### HJBA Junction Box Adapter Plate Detail



## INDICATOR DATA

### Embedded LED Indicator Light

UV Module  
(Shown here in the active state)



### Status Indicator LED States

- Normal operation
- Approximately 6 months left in lamp life
- ● Cycle power to clear error
- Replace lamp module immediately, module will no longer activate

Status Indicator LED