

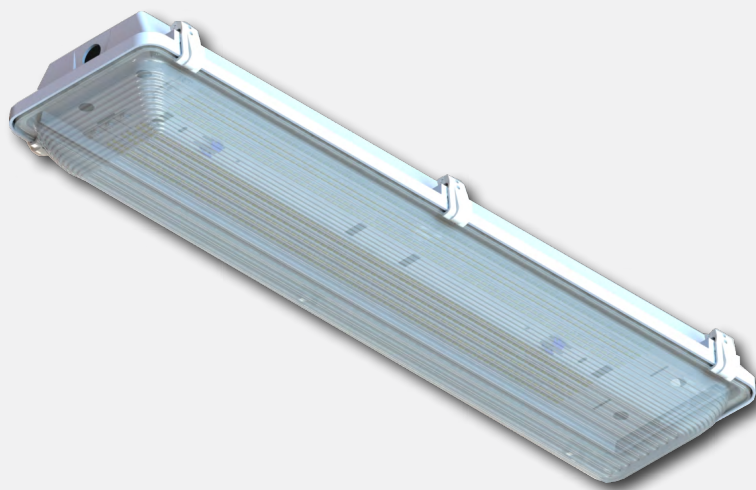
PROJECT NAME		DATE	
CAT. NUMBER			
NOTES			

SPEC SHEET

# Hosedown 2.0 (HD2)

## VAPOR TIGHT LED HIGH BAY

Formerly Flex Lighting Solutions



### KEY FEATURES

- 6,000 to 30,000 lumens
- Up to 168 LPW
- New compact design
- Up to 40°C ambient
- Guaranteed light levels for 5 years
- Dimmable 0-10V (standard)
- 6KV surge protection (10KV optional)



### Guaranteed Light Levels

Guaranteed lumen maintenance (L70) for 5 years (standard warranty).



### IP Rated

IP65, IP66, IP67 and IP69K rated. Meets NSF Splash Zone 2 and NSF/ANSI STD2. Handles high pressure water up to 1500psi.



### Hazardous Location Options

Simultaneous use in: Hazloc Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III.

# TECHNICAL SPECS

HOUSING	LUMEN OUTPUT <sup>2</sup>	EFFICACY	WATTS	PART NUMBER	AVAILABLE LENSES
2N 2' Narrow	5,882	142	42	HD20S-A1-06K-2N-xx-xx-BC	Clear (CL), Clear Ribbed (BC), Frosted (FR), Frosted Ribbed (BF)
	12,065	158	76	HD20S-A1-12K-2N-xx-xx-BC	
4N 4' Narrow	6,021	149	40	HD20S-A1-06K-4N-xx-xx-CL	Clear (CL), Clear Ribbed (BC), Frosted (FR), Frosted Ribbed (BF)
	12,112	147	83	HD20S-A1-12K-4N-xx-xx-CL	
	24,419	168	146	HD20S-A1-24K-4N-xx-xx-CL	
2W 2' Wide	18,275	163	112	HD20S-A1-18K-2W-xx-xx-CL	Clear (CL), Frosted (FR)
	24,355	163	149	HD20S-A1-24K-2W-xx-xx-CL	
	30,782	163	189	HD20S-A1-30K-2W-xx-xx-CL	

2 Typical (±10%) at 277V (LV), 25°C, 4000K/5000K, Clear Lens, CRI 80+. Lumen Multipliers: 3500K = 0.93; Frosted Lens = 0.98; Clear Ribbed Lens (BC) = 0.95; Frosted Ribbed Lens (BF) = 0.94

## Lumen Multipliers

Allows to calculate the actual lumen output for your application. Apply each multiplier to the lumens of the shaded table.

LUMENS VS AMBIENT TEMP			COLOR TEMP <sup>2</sup>		COLOR RENDERING		LIGHT DISTRIBUTION	
C°	F°	Multiplier	CCT	Multiplier	CRI	Multiplier	Lens	Multiplier
35	95	0.99	5000	1.000	80	1.000	CL	1.000
40	104	0.98	4000	1.000			FR	0.980
			3500	0.930			BC	0.950
							BF	0.940

**Example:** How to calculate the actual lumen output of the model 12K at these conditions: 40°C ambient temp, 3500K, CRI80, Frosted Lens.

- 1) Find the lumens from the shaded column.
- 2) Apply all the corresponding multipliers.

$$12112 \times 0.98 \times 0.93 \times 1.000 \times 0.980 = 10,818$$

Lumens      Temp.      CCT      CRI      Lens      Actual lumens

## LUMEN MAINTENANCE

All fixtures come with our Standard Warranty, covering **L70 light levels for 5 years**. That's 43,800 hours of guaranteed life based on a 24/7 operation.



Ambient Temp.		Lumen Maintenance in Hours			Lumen Maintenance Factor			Reported Life (6X)	
C°	F°	L90	L80	L70	50Khrs	75Khrs	100Khrs	Tested Time	Extrapolated
25	77	73K	149K	235K	93	90	86	9,000 hrs	> 54,000 hrs
30	86	69K	141K	222K	93	89	86	LEDs tested for 13,000 hrs based on LM-80.	
35	95	65K	133K	210K	92	88	85	Extrapolating as per TM-21: 13,000 hrs x 6 = 78,000 hrs of reported life.	
40	104	61K	126K	199K	92	88	84		

All values calculated in accordance to IESNA standards, per TM-21.LM-79, LM 80 tests and reports are performed in accordance to IESNA standards, per TM-21. Lumen maintenance in hours (L70 via TM-21) based on 24/7 operation.

# ORDERING

SERIES MODEL - COMPLIANCE - LUMENS - SIZE	COLOR TEMP	CRI	LENS	VOLTAGE	MOUNTING
HD20S-A1-06K-2N <sup>13</sup> HD20S-A1-06K-4N HD20S-A1-12K-2N <sup>13</sup> HD20S-A1-12K-4N HD20S-A1-24K-4N HD20S-A1-18K-2W HD20S-A1-24K-2W HD20S-A1-30K-2W <sup>15</sup>	<b>35<sup>14</sup></b> 3500K  <b>40</b> 4000K  <b>50</b> 5000K  Other CCT available upon request	<b>80</b> (Standard)  Other CRI available upon request <sup>7</sup>	<b>CL</b> Clear lens  <b>FR</b> Frosted lens  <b>BC<sup>9</sup></b> Clear Ribbed Lens, 2N and 4N housings only  <b>BF<sup>9</sup></b> Frosted Ribbed Lens, 2N and 4N housings only	<b>LV</b> 120-277V  <b>HV<sup>17</sup></b> 347-480V	<b>Narrow Body Housing, 2N and 4N only</b>  <b>MLT<sup>3,5,9</sup></b> Multi Mount Bracket is stainless steel and includes hangers and ability to flush mount, cable mount or accept threaded rod. 2N and 4N ONLY.  <b>Wide Body Housing 2W Only</b>  <b>CRM<sup>5,10</sup></b> Cable-ready (standard) 2W Only  Other mounting options available. Please see Accessories.

OCCUPANCY SENSORS - NO OCC SENSOR (STANDARD)	CORD & PLUG - NO CORD/PLUG (STANDARD) <sup>4,8</sup>		OPTIONS <sup>4</sup>	DIMMING
<b>MWOCC<sup>4,13,16,17</sup></b> Microwave OCC Sensor, with photocell, 10-20' mounting height  <b>DOCC<sup>4,13,16,17,18</sup></b> High Frequency Doppler Occ Sensor, with ambient light sensing, 10-30' mounting height  HV units with MWOCC and DOCC have a High Voltage Transformer installed. HV sensors only available on 4N and 2W housings. Units are set to 75% sensitivity, 10-minute delay from the factory.	<b>6' 18AWG cord with the following</b>  <b>CW<sup>4,7</sup></b> Cord, 15A, no plug  <b>15' 18AWG CORD WITH THE FOLLOWING</b>  <b>15CW<sup>4,7</sup></b> Cord, 15A, no plug  <b>15DW<sup>4,7</sup></b> Dimming cord, 15A, 5-wire, no plug  <b>15CL515<sup>4,7</sup></b> Cord, 15A, locking plug 120V (L5-15P)  <b>15CL715<sup>4,7</sup></b> Cord, 15A, locking plug 277V (L7-15P)  <b>15CL720<sup>4,7</sup></b> Cord, 20A, locking plug 277V (L7-20P)  <b>15CL2420<sup>4,7</sup></b> Cord, 20A, locking plug 347V (L24-20P)  <b>15CL820<sup>4,7</sup></b> Cord, 20A, locking plug 480V (L8-20P)	<b>6', 10' or 15' 18AWG food-grade cord with the following</b>  <b>CWF<sup>4,7</sup></b> Food Grade, yellow cord, 15A, no plug  <b>10CWF<sup>4,7</sup></b> Food Grade, yellow cord, 15A, no plug  <b>15CWF<sup>4,7</sup></b> Food Grade, yellow cord, 15A, no plug  <b>15EWF<sup>4,7</sup></b> Food Grade, yellow cord, 15A, 4 wire for EMB, no plug  <b>15CL715F<sup>4,7</sup></b> Food Grade, yellow cord, 15A, locking plug 277V (L7-15P)  <b>15CL720F<sup>4,7</sup></b> Food Grade, yellow cord, 20A, locking plug  Other cord options available, contact factory	<b>EMB<sup>1,4,6,8,15</sup></b> Emergency battery back-up. LV Only.  <b>QDC<sup>4</sup></b> Driver Quick Disconnect  <b>SRG<sup>4</sup></b> Fixture installed Surge Protector, 10kA  <b>WPSLV<sup>4</sup></b> Waterproof sleeve  <b>WPPLG<sup>4,12</sup></b> Waterproof plug end for cords. Plug option selected is waterproof.  <b>LNT<sup>5,10</sup></b> Lens Tether  <b>SSLCH<sup>4</sup></b> Stainless steel latches, priced per chassis  <b>HZLOC<sup>15,16</sup></b> C1D2 and C2D2  <b>PC</b> Chosen Lens made from Polycarbonate  <b>CTRLR<sup>4,6,15</sup></b> Control Ready 5-wire harness (factory installed)	<b>10V</b> 0-10V Interface (standard)

## ORDERING EXAMPLES

**Standard:** HD20S-A1-12K-2N-50-80-BF-LV-MLT-10V

**With Options:** HD20S-A1-12K-2N-50-80-BF-LV-MLT-MWOCC-15CL715-WPPLG-SSLCH-10V

**DLC:** HD20S-A1-12K-2N-50-80-BF-[LV, HV]-[ALL MOUNTING OPTIONS]-[ALL OCCUPANCY SENSORS]-[ALL CORDS]-[ALL OPTIONS]-10V

## ACCESSORIES

Must be ordered separately. Packaged separately.

### FIXTURE ACCESSORIES

Part Number	Type	Description
FM2WSS	Flush Mount Bracket (2W only) <sup>10</sup>	Flush mounting bracket for 2W body only, stainless steel
VHOOK2WSS	Hanger (2W only) <sup>10</sup>	2W body only. Kit includes two stainless steel V hangers. Order fixture with CRM mounting option.
PENDSS	Rigid Pendant Mount (2W only) <sup>10</sup>	Rigid mounting bracket for 2W body style only. Allows for pendant mount. Qty 2 each.
45M	45 Degree Angle Mount (2N, 4N only)	45 Degree Mounting Bracket, 1 Pair (2N and 4N housings only)
CABLEKIT	Cable Kit	Kit includes two, 10ft. aircraft "Y" cables and snap hooks (one pair).
CABLEKIT2P	Cable Kit 2P <sup>9</sup>	Kit includes two, 10ft. aircraft straight cables. For use with Narrow Body fixtures only, 2N and 4N. Can be used with wide body, provided V Hangers are also purchased (sold separately).
CABLEKITSS	Stainless Steel Cable Kit	Kit includes two, 10ft. aircraft "Y" cables and snap hooks (one pair). Stainless Steel.
CABLEKIT2PSS	Stainless Steel Cable Kit 2P <sup>9</sup>	Kit includes two, 10ft. aircraft straight cables. For use with Narrow Body fixtures only, 2N and 4N. Can be used with wide body, provided V Hangers are also purchased (sold separately). Stainless Steel.
PLATESS	Stainless Steel Plate Mount	Includes stainless steel plate and 4 stainless steel cables for stem mounting.
	Power Supply Replacement	Power supply replacement available upon request. Contact factory for details.

# FEATURES & SPECIFICATIONS

## CONSTRUCTION

- **Housing:** UL 94 5VA fiberglass housing (will not melt or burn). Weatherability (f1) rated. Suitable for outdoor use with respect to exposure to ultraviolet light, water exposure and immersion in accordance with UL 746. Capable of handling high pressure water up to 1500psi.
- **Latches:** Fixtures come standard with plastic latches. Stainless Steel latches available as an option (SSLCH).

## ELECTRICAL

- **Power Input:** 120-277V or 347-480 (50/60Hz), typical, depending on model.
- **Power Factor:** Greater than 0.9 (0.96–0.99 typical).
- **Total Harmonic Distortion:** Less than 20%, 10% typical.
- **Surge Protection:** Standard is 6kV for drivers. Additional surge protection is available. All HV orders will have 10kV SRG automatically added (contact sales for questions).
- **Emergency Battery Backup (EMB):** Initial lumen output is 2200-2400 lumens, thereafter EMB produces 1900-2000 lumens for a minimum of 90 minutes. 16 watts initial output. EMB fixtures 0°C to 45°C (32°F to 122°F). Not to exceed ambient of fixture.<sup>15</sup>

## OPERATION

- **Environment:** Wet, high pressure hosedown, interior or exterior applications. HazLoc Class I, Division 2 available. Suitable for simultaneous use in: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III.
- **Ambient Range Operation:** -40°C to 40°C (-40°F to 104°F) for xxK-2N, 18K-2W, 24K-2W and xxK-4N-40°C to 35°C (-40°F to 95°F) for 30K-2W.<sup>1</sup>

## OPTICS

- **CCT:** 3500K<sup>14</sup>, 4000K and 5000K standard, other CCT available (extended lead time).
- **CRI:** 80 standard, other CRI available (extended lead time).
- **Lenses:** UV stabilized acrylic, Clear, Frosted, Clear Ribbed and Frosted Ribbed (depending on model). Polycarbonate lens options available as an option (PC).

## MOUNTING

- **Mounting:** Cable Ready, Surface and Threaded Rod mounting options. Surface mounting reduces ambient range by 5°C for HD20S-A1-18K-2W when mounted flush to a surface and reduces 10°C for HD20S-A1-12K-2N, HD20S-A1-12K-4N, HD20S-A1-24K-2W, HD20S-A1-30K-2W. Cable kit sold separately. MBR for 2W body sold separately.

## CONTROLS

- **Dimming:** 0-10V standard. Dimming range 100% to 10%.
- **Occupancy Sensors:** Optional - factory installed microwave sensors for motion and daylight harvesting.

## WARRANTY

- **Standard:** 5-year product warranty including 5 years of guaranteed light levels (L70).

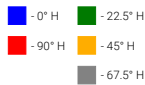
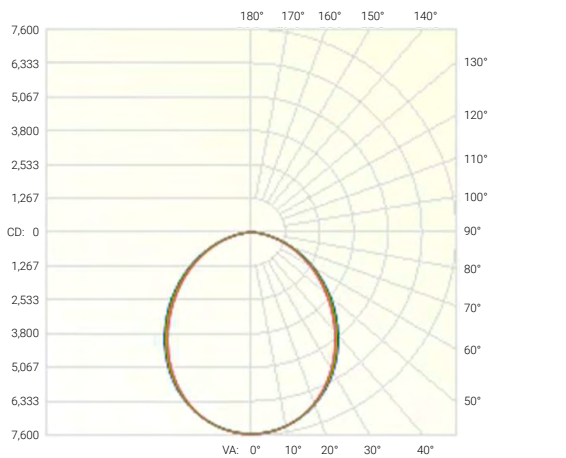
## LISTINGS & CERTIFICATIONS

- ETL listed (UL 1598), CSA 22.2
- DesignLights™ Consortium (DLC) Premium Listed
- Suitable for wet location. Covered ceiling not required to maintain wet location listing or IP ratings
- NSF/ANSI STD2
- IP65, IP66, IP67 and IP69K rated and certified to meet
- NSF Splash Zone 2
- NEMA 4X rated
- IK07 rated
- EMI: Title 47 CFR 15 Class A, ICES-005
- RoHS compliant
- LM-79, LM 80 and TM-21 tests and reports are performed in accordance to IESNA standards, per TM-21



## FROSTED

### Polar Graph



### Zonal Lumen Summary

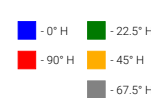
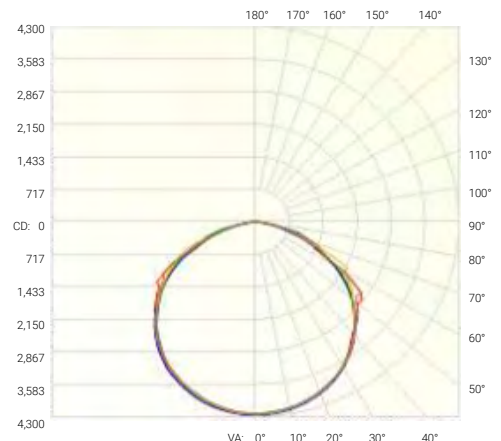
HD20S-Ax-24K-4N-40-80-FR-LV-[xxx]-10V

Zone	Lumens	% Lamp	% Fixt.
0-30	6141.7	25.9	25.9
0-40	10089.0	42.5	42.5
0-60	17862.4	75.3	75.3
60-90	5374.1	22.7	22.7
0-90	23236.5	98.0	98.0
90-180	482.7	2.0	2.0
0-180	23719.2	100.0	100.0

Total luminaire efficiency = 100.00%

## CLEAR RIBBED

### Polar Graph



### Zonal Lumen Summary

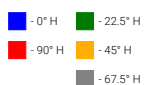
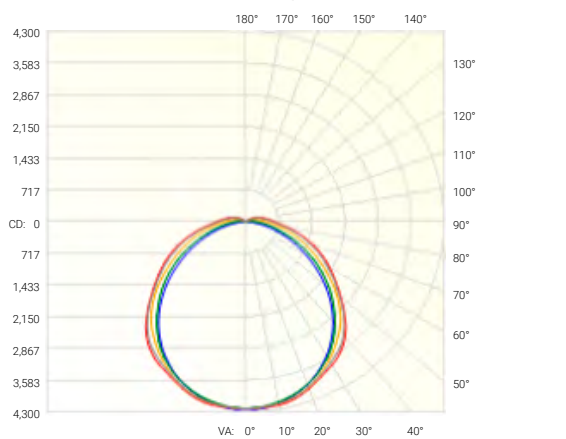
HD20S-Ax-12K-4N-40-80-BC-LV-[xxx]-10V

Zone	Lumens	% Lamp	% Fixt.
0-30	2609.5	23.6	23.6
0-40	4407.7	39.9	39.9
0-60	8123.0	73.4	73.4
60-90	2463.8	22.3	22.3
0-90	10586.8	95.7	95.7
90-180	472.7	4.3	4.3
0-180	11059.5	100.0	100.0

Total luminaire efficiency = 100.00%

## CLEAR

### Polar Graph



### Zonal Lumen Summary

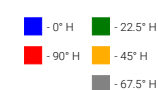
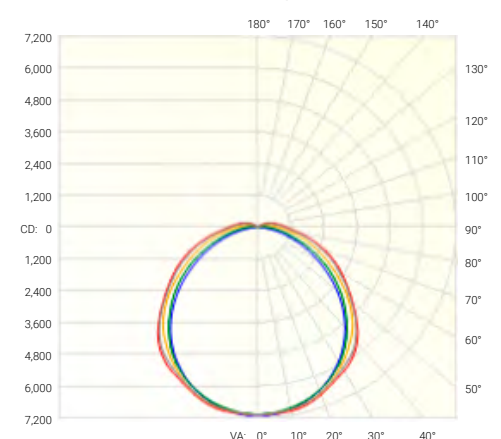
HD20S-Ax-12K-4N-40-80-CL-LV-[xxx]-10V

Zone	Lumens	% Lamp	% Fixt.
0-30	3329.8	26.5	26.5
0-40	5506.1	43.9	43.9
0-60	9973.5	79.4	79.4
60-90	2554.7	20.3	20.3
0-90	12528.2	99.8	99.8
90-180	27.8	0.2	0.2
0-180	12556.0	100.0	100.0

Total luminaire efficiency = 100.00%

## FROSTED RIBBED

### Polar Graph



### Zonal Lumen Summary

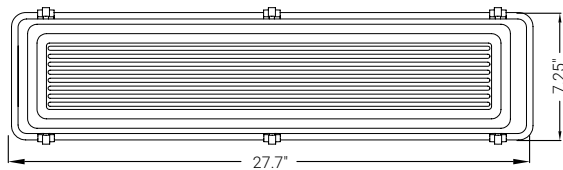
HD20S-Ax-24K-4N-40-80-BF-LV-[xxx]-10V

Zone	Lumens	% Lamp	% Fixt.
0-30	5532.1	24.5	24.5
0-40	9098.1	40.2	40.2
0-60	16066.4	71.0	71.0
60-90	5376.3	23.8	23.8
0-90	21442.8	94.8	94.8
90-180	1180.1	5.2	5.2
0-180	22622.8	100.0	100.0

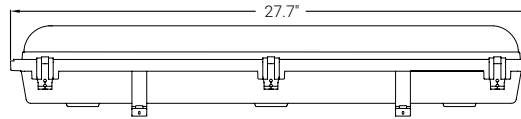
Total luminaire efficiency = 100.00%

# DIMENSIONS & DRAWINGS

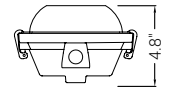
## 2N



TOP VIEW

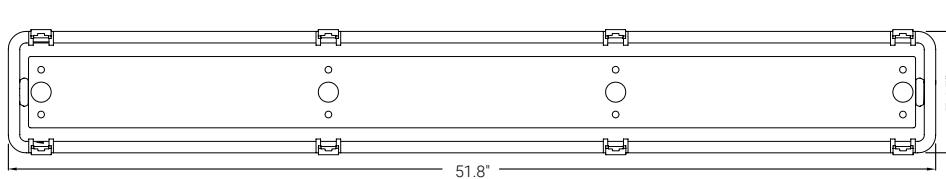


SIDE VIEW - FROSTED

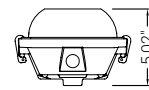


END VIEW - FROSTED

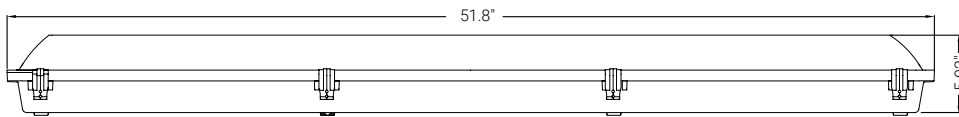
## 4N



TOP VIEW

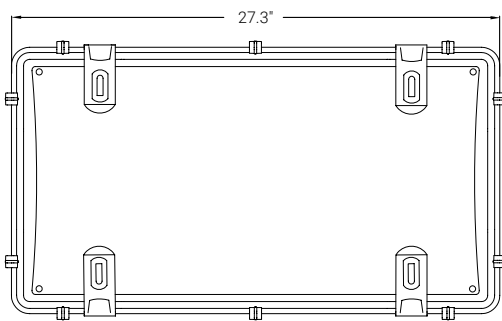


END VIEW - FROSTED

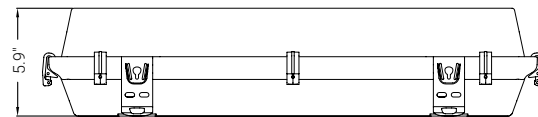


SIDE VIEW - FROSTED

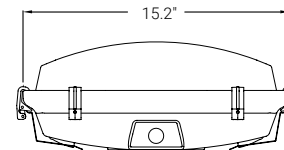
## 2W



TOP VIEW



SIDE VIEW



END VIEW

### DIMENSIONS

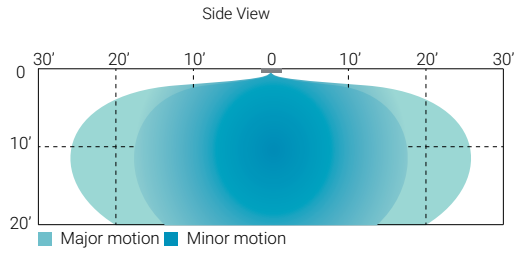
Size	Length (in)	Width (in)	Height (in)	Weight (lb)
2N	27.7	7.25	4.8	~9
4N	51.8	7.25	5.02	~14
2W	27.3	15.2	5.9	~17

Weights are approximate and vary by model, if weight is a concern, please contact factory.

# OCCUPANCY SENSORS

## IR-TEC

### DOCC

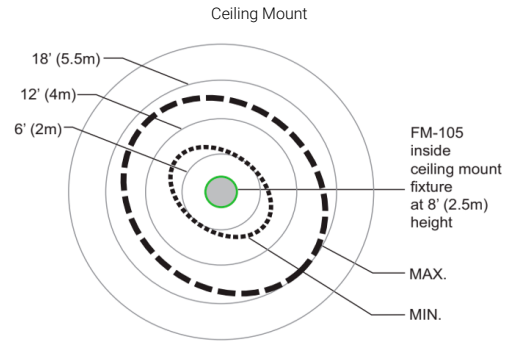


<b>Mounting Height</b>	10'	20'
<b>Coverage (sq. ft.)*</b>	2,000	1,200

\*Sensitivity 100%

## Wattstopper

### MWOCC





## FOOTNOTES

---

1. EMB fixture operating temperature is 32°F to 122°F (0°C to 45°C). Not to exceed Max Ambient of fixture. Limited switch cycles under -20°C. We recommend not turning units off if used in continual -20°C to -40°C environment, dim to 10% if needed.
2. Typical ( $\pm 10\%$ ) at 277V (LV), 25°C, 4000K/5000K, Clear Lens, CRI 80+. Lumen Multipliers: 3500K = 0.93 ; Frosted Lens = 0.98 ; Clear Ribbed Lens (BC) = 0.95 ; Frosted Ribbed Lens (BF) = 0.94
3. Threaded rod and/or cables not included. Optional CABLEKIT2P available.
4. Optional add-on. See price list for pricing.
5. Optional CABLEKIT ordered separately. See ACCESSORIES.
6. 120-277V only.
7. All cords are 18/3 AWG and 600V. Food Grade Cords 18/3 AWG (18/4 for 15EWF), SEOW/SOOW, 600V and yellow. Food grade cords have waterproof plugs.
8. Consult factory for orders requiring EMB. 12K and 6K lumen version only available in 4N chassis.
9. 2N and 4N Housing only.
10. 2W Housing only.
11. Dimensions listed are for the fixture only. See dimensional drawings for measurements with mounting hardware. Weights are approximate and vary by model, if weight is a concern, please contact factory. Weight changes when battery backup is added.
12. WPPLG not available for L-820 configuration.
13. High Voltage (347-480V) applications using sensors will utilize a High Voltage Step Down Transformer (HVT). The transformer and LV drivers allow optional sensor use in HV (347-480V) applications. Increases wattage ~8%. Units using the HVT are not DLC listed. When used with 24K-2W and 30K-2W, max ambient is 35°C (95°F). The sensor will be set from the factory at 75% sensitivity and a 10-minute delay. Not available on 2N frame.
14. 3500K is not DLC listed.
15. EMB not available on HD20S-A1-30K-2W and 2N models. EMB, CTRLR not available with C1D2 or C2D2.
16. C1D2 and C2D2 ratings as follows --  
Class I, Division 2, Groups A, B, C, D  
Class II, Division 2, Groups F, G; Class III  
T5, -25°C to 40°C (-13°F to 104°F) for 18K-2W, xxK-2N and xxK-4N  
T5, -25°C to 35°C (-13°F to 95°F) for 24K-2W and 30K-2W.  
MWOCC and DOCC not available with C1D2.
17. SRG (10kA protection) is standard option on all HV fixtures.
18. Extended lead time.

### Linmore LED Labs, Inc.

2360 S. Orange Ave, Bldg. 1, Fresno, CA 93725

559.485.6010 | [info@linmoreled.com](mailto:info@linmoreled.com) | [LinmoreLED.com](http://LinmoreLED.com)



All specifications are subject to change without notice. Please visit [linmoreled.com](http://linmoreled.com) for latest information. All values are typical or design values and series averages. Actual performance may differ as a result of end-user environments and applications. Consult Linmore LED with specific inquiries. Copyright © 2021, Linmore LED Labs, Inc. All rights reserved. No part of this document may be reproduced in any form without the prior written permission of Linmore LED.