

PROJECT	
PRODUCT	
PREPARER	
TYPE	
NOTES	



### DESCRIPTION

The NEPTUNE LED Linear High Bay (G2) is a cost effective product designed for warehouse applications & other indoor lighting applications. This LED linear high bay is specifically designed for taller ceilings & larger areas designed for suspension mounting, V-hooks & chain are included, surface mount & pendant mount brackets are available. The NEPTUNE LED linear high bay comes in wattage's of 86W, 105W, 150W, 175W & 210W. The LHB-ECO offers On/Off, Daylight, motion, dimming and EM options are available, which offer a practical affordable high-functioning lighting solution Backed by Nebulite's 7 Year Warranty.

### SPECIFICATIONS Product Features

**Applications:** Specifically designed for taller ceilings and larger areas; including offices, schools, hospitals, healthcare and other applications.

#### Construction

- Galvanized steel body
- Powder coat white finish
- Diffused Poly-carbonate lens

#### Installation & Mounting

- V-Hook and chain(Included)
- Surface Mount Kit
- Pendant Mount Kit
- Wire Guard

#### Electrical

- Voltage: 100-277 Volt, 347-480 Volt

#### Controls & Dimming

- 0-10 Volt Dimming
- Bluetooth Mesh Control
- Bi-level Occupancy Sensor

#### Wattage

- 86W\*, 105W, 150W\*, 175W, 210W

\* Stocking Item

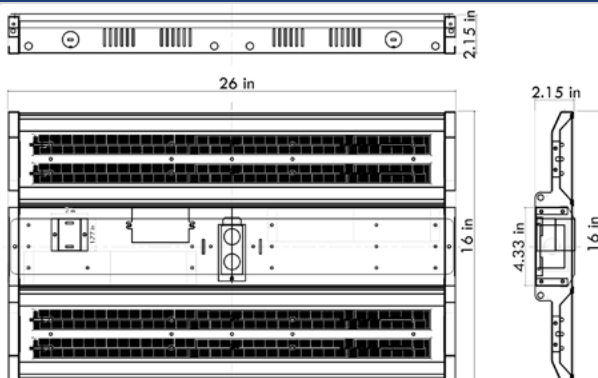
#### Warranty

- 7 Year Limited Warranty

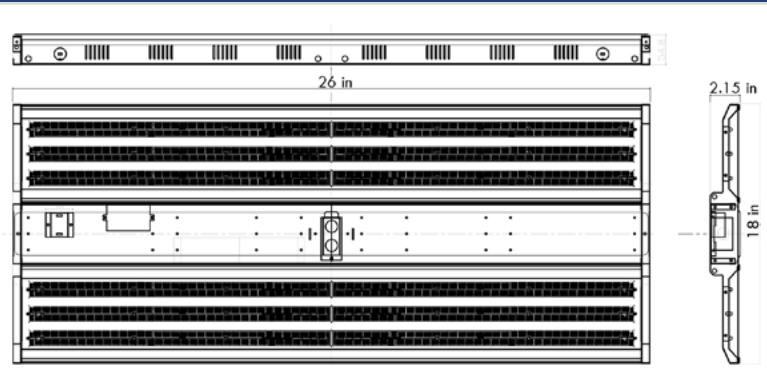


### Dimensions

86W Housing Size (in)



150W Housing Size (in)



**Performance Summary**

<b>Input Voltage</b>	100-277V, 347-480V
<b>Input Frequency</b>	50/60 Hz
<b>Rated Wattage</b>	86W*, 105W, 150W*, 175W, 210W
<b>Efficacy</b>	160 lm/W
<b>CRI</b>	80+
<b>Available CCT</b>	4000K, 5000K
<b>Rated Life (L70)</b>	100,000 hrs
<b>IP Rating</b>	IP20
<b>PF</b>	>0.95
<b>Certifications</b>	ETL, DLC, CE, RoHS
<b>Working Temp. (°C)</b>	-20°C - 50°C
<b>Dimming</b>	0-10V



\* Stocking Item

**Performance Data**

MODEL	WATTAGE	CCT	LUMEN	EFFICACY (lm/W)	VOLTAGE
LHB-ECO-86W-G2	86watt*	4000K	13,760lm	160 lm/W	100-277vac
LHB-ECO-86W-G2	86watt*	5000K	13,846lm	161 lm/W	100-277vac
LHB-ECO-105W-G2	105watt	4000K	16,800lm	160 lm/W	100-277vac
LHB-ECO-105W-G2	105watt	5000K	16,905lm	161 lm/W	100-277vac
LHB-ECO-150W-G2	150watt*	4000K	24,000lm	160 lm/W	100-277vac
LHB-ECO-150W-G2	150watt*	5000K	24,150lm	161 lm/W	100-277vac
LHB-ECO-175W-G2	175watt	4000K	28,000lm	160 lm/W	100-277vac
LHB-ECO-175W-G2	175watt	5000K	28,175lm	161 lm/W	100-277vac
LHB-ECO-210W-G2	210watt	4000K	33,600lm	160 lm/W	100-277vac
LHB-ECO-210W-G2	210watt	5000K	33,810lm	161 lm/W	100-277vac

\* Stocking Item

**Ordering Format**

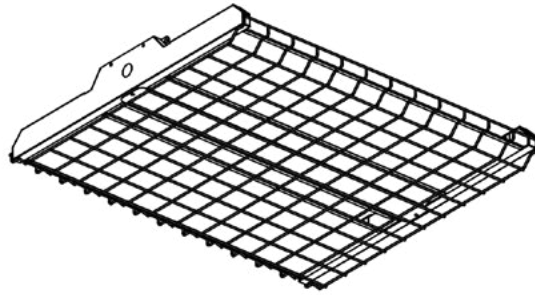
Sample: LHB-ECO-G2-150W-50-HV-WG-EM

SERIES	WATTAGE		CCT	VOLTAGE
LHB-ECO	86W	105W	40 = 4000K   50 = 5000K	BLANK = 100-277V   HV = 347-480V
	150W	175W		
	210W			

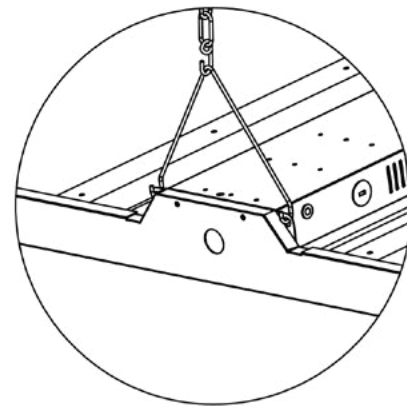
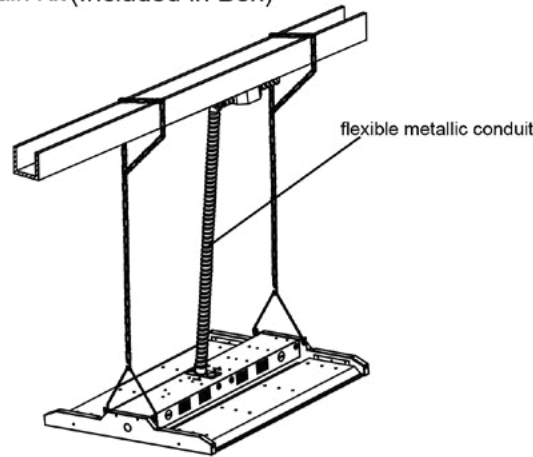
MOUNTING				OPTIONS	
VH	V-Hook and chain(Included)		PH	Pendant Hanger	
SM	Surface Mount		WG	Wire Guard	
				EM	Emergency LED Driver
				LSXR	LSXR Sensor

**Mounting Options**

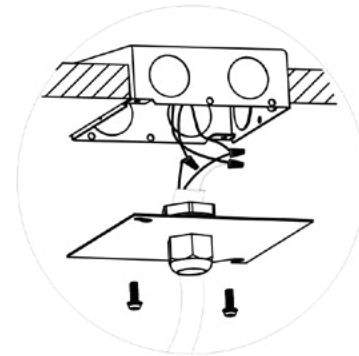
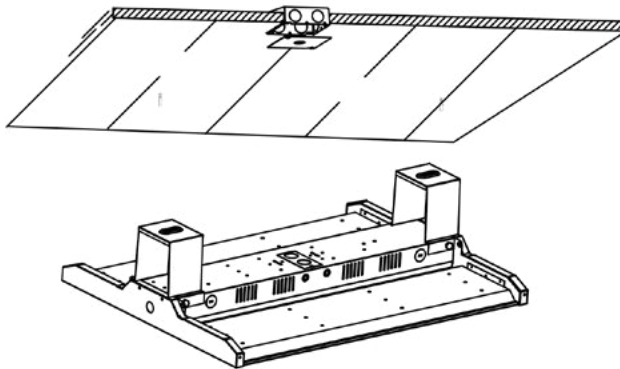
**A: Wire Guards**  
WG-LHB-ECO-G2



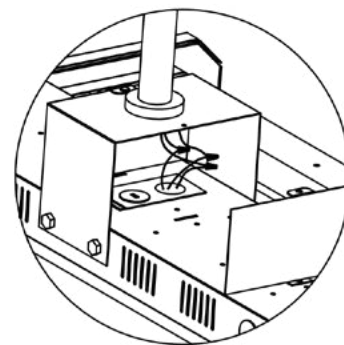
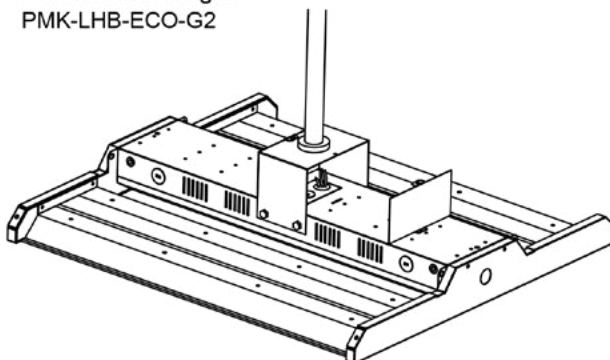
**B: Chain Kit (Included in Box)**



**D: Surface Mounting**  
SMK-LHB-ECO-G2



**E: Pendant Hanger**  
PMK-LHB-ECO-G2



**KT-EMRG-LED-20SD-2000-EN /DF CONSTANT POWER EMERGENCY LED DRIVER**

Constant Power Emergency LED Driver | 20W Output | 120 –277V Input

<b>Driver Type</b>	Constant Power Emergency LED DRIVER
<b>Max. Output Power</b>	20W
<b>Input Voltage</b>	120-277 Vac ±10%
<b>Number of Outputs</b>	1
<b>Safety Standards</b>	UL 924, complies with CEC efficiency standards
<b>Location</b>	IP20 design for dry and damp locations
<b>Pass-Through Current</b>	3A Maximum
<b>Warranty</b>	5 Years



**Environmental Specifications**

<b>Operating temperature</b>	0°C/32°F to 55°C/131°F
<b>Storage temperature</b>	-20°C/- 4°F to 55°C/131°F
<b>Humidity</b>	5% to 95%
<b>MTBF</b>	TBD
<b>Life rating</b>	TBD
<b>Maximum ambient temperature</b>	55°C/131°F

**Safety and EMC Compliance**

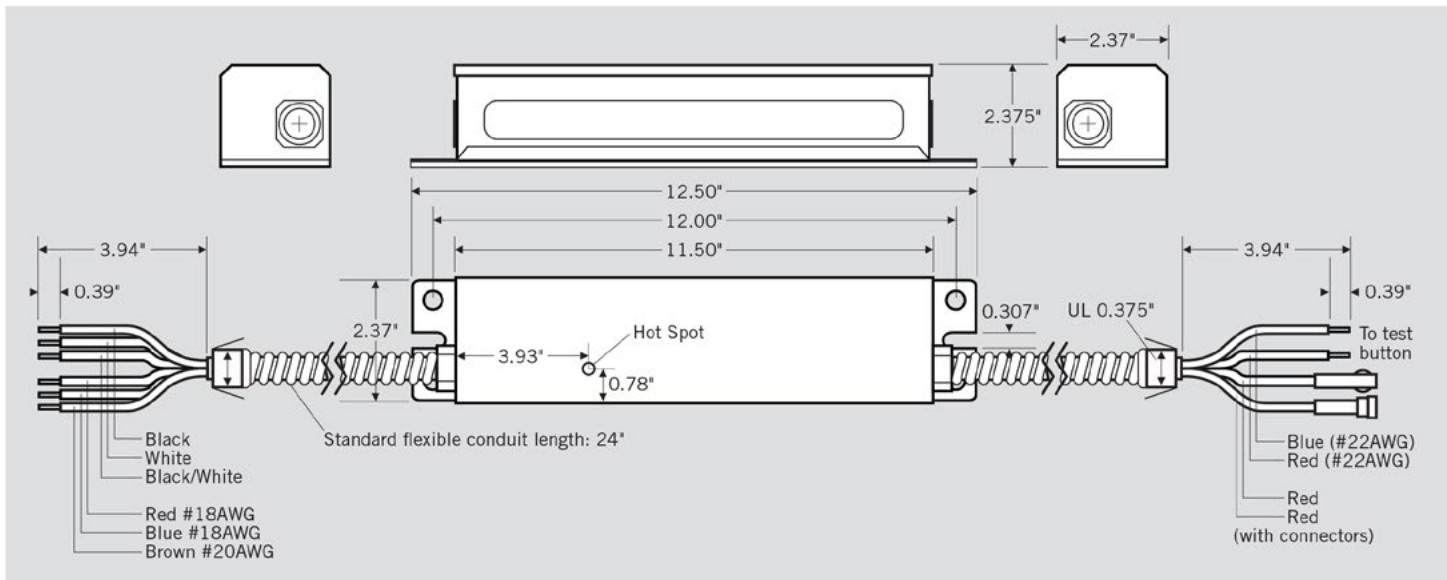
<b>UL/cUL</b>	UL 924
<b>FCC, 47CFR Part 15</b>	ANSI C63.4:2009 Class B (consumer limit)
<b>EN61000-3-2</b>	Harmonic current emissions Class C

**Electrical Specifications**

<b>Input voltage range</b>	120~277Vac ± 10%
<b>Frequency</b>	50/60Hz
<b>Power factor</b>	> 0.9 under 120~277Vac input
<b>Inrush current</b>	20A @ 120V
<b>Max input current</b>	60mA @120V, 35mA @240V, and 30mA @277V
<b>THD</b>	< 20% under 120~277Vac input
<b>Output voltage</b>	20 –60Vdc Class 2 compliant Remarks: the output power is valid for output voltage ≤ 58Vdc; above that power will drop
<b>Output current</b>	1000mA @ 20Vdc, 333mA @ 60Vdc
<b>Output power</b>	20W (constant)
<b>Turn-on Delay Time</b>	< 1s
<b>Overshoot</b>	< 10%
<b>Ripple &amp; Noise (pk-pk)</b>	< 10%
<b>Withstand voltage</b>	Input to output, 2800Vdc, 2mA
<b>Leakage current</b>	Maximum 0.5mA at 277Vac, 60Hz input
<b>Protection</b>	<p><b>Over voltage protection:</b> Hiccup mode. Protection will trigger when load voltage exceeds specified output voltage and will auto recover after the fault mode is removed.</p> <p><b>Over current protection:</b> Hiccup mode. Protection will trigger when load current exceeds specified output current and will auto recover after the fault mode is removed.</p> <p><b>Short circuit protection:</b> Hiccup mode. Protection will trigger when short circuit and will auto recover after the fault mode is removed.</p> <p><b>Over charge and discharge protection:</b> Monitor battery voltage to prevent over charge of the battery and deep discharge which may damage battery.</p>
<b>Emergency Operation</b>	90 minutes
<b>Battery</b>	High-temperature, maintenance-free, LiFePO4 battery, 16Vdc, 5 cell
<b>Recharge Time</b>	24 hours
<b>Battery Charging Current</b>	295mA



**Dimensions and Wiring Specifications Emergency Driver Specifications**



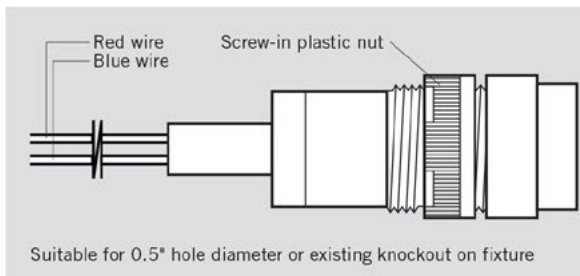
**Environmental Specifications**

<b>Length (L)</b>	12.50" (317.5mm)
<b>Width (W)</b>	2.37" (60.2mm)
<b>Height (H)</b>	2.375" (60.3mm)
<b>Mounting (M)</b>	12.00" (304.8mm)

**Environmental Specifications**

<b>Black, White (Input)</b>	UL1316 #18AWG
<b>Red, Blue (Output to LED module)</b>	UL1316 #18AWG
<b>Brown</b>	UL1430 #20AWG
<b>Red, Black (Battery connection)</b>	UL1015 #18AWG
<b>Red, Blue (Test switch connection)</b>	UL1430 #22AWG

**Dimensions and Wiring Specifications Test Switch (2-wire) Specifications**

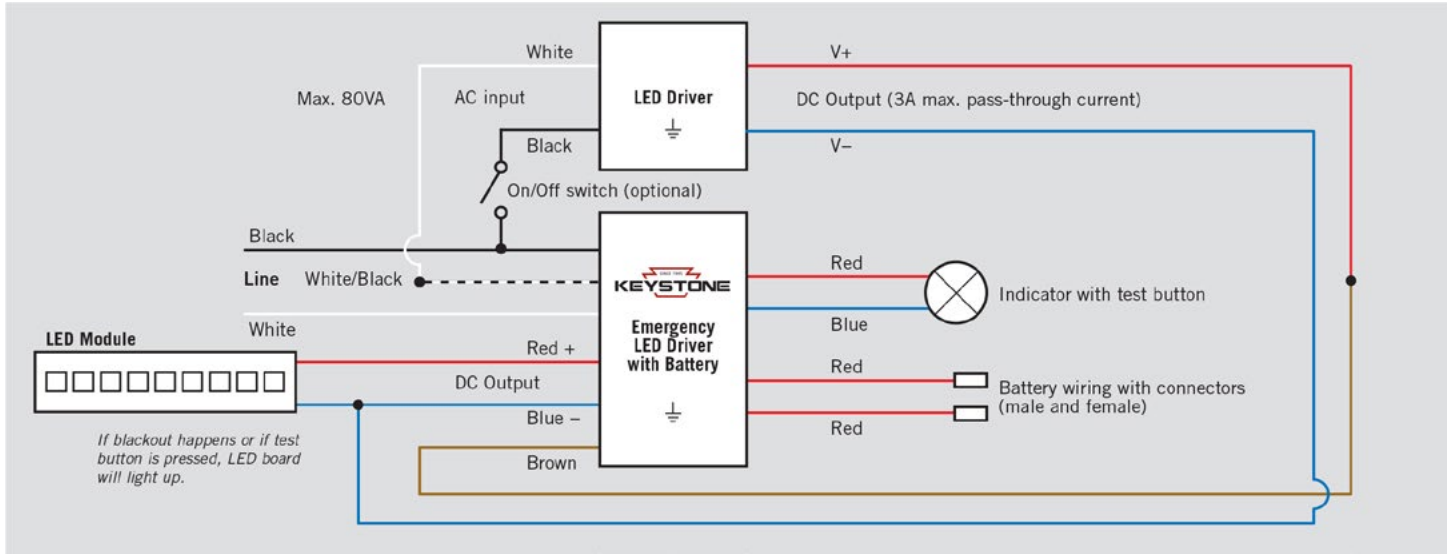


- Test switch light indication**
- Green color flashing: Charging battery (battery connector in contact)
  - Green color light: Standby or in emergency mode
  - Red color flashing 1 time: Cannot charge up battery
  - Red color flashing 2 times: Battery voltage too low
  - Red color flashing 3 times: Loading voltage too low (less than 20V)
- Manual test sequences**
- Quick discharge test: Press 1 time and hold; LED load will light up for a second
  - 30-second test: Press 2 times and hold; LED load will light up for 30 seconds
  - 90-minute test: Press 3 times and hold; LED load will light up for 90 minutes

**NOTES**

1. To maintain good battery lifespan during storage, recharge emergency driver annually.
2. For operation, wiring, installation, regular check, and maintenance, please refer to installation instruction and Life Safety Code.
3. Automatic Monthly and Annual Testing: Automatically conduct a 30-second test every month and a 90-minute test every year. The test button will flash RED if an issue is detected.
4. Once conducted, the quick discharge test mode requires 2 hours to recharge battery before performing other tests.
5. Once entering emergency mode or after conducting other test modes, 24 hours are required to recharge battery before performing other tests.
6. The internal timer of the emergency driver starts once power is applied to the unswitched hot lead. The internal timer will not reset due to power loss as long as there is enough battery power to maintain the emergency driver's internal memory.
7. The internal timer of the emergency driver resets after 12 automatic tests. The 12th test conducted is a 90-minute test, which occurs every 377 days. The first 11 tests conducted are 30-second tests and occur once every 30 days (if the 90-minute test occurs within the 30-day time period, the duration will increase to 31 days).
8. If the emergency driver has a manual test (test button pushed) during the time of the auto-test, the auto-test will delay for 24 hours.
9. Regardless if the switched hot is on or off (if applicable), automatic tests will still occur and will power the LED load at 20W.
10. If a power outage were to occur during the time of an automatic test, the emergency driver will continue the automatic test until completed. After the test is done, it will continue to operate the load in emergency mode until power is restored.

**Wiring Diagram**



**Ordering Information**

ORDER CODE	DESCRIPTION	PACKAGING STYLE	PACK QUANTITY	ITEM STATUS
KT-EMRG-LED-20SD-2000-EN /DF-IP	LED Emergency Back-Up, CEC Compliant	Individually Packaged	TBD	Active

**Catalog Number Breakdown**

KT	EMRG	LED	20	SD	2000	EN	/DF	IP
1	2	3	4	5	6	7	8	9

- 1 Keystone Technologies
- 2 Emergency Back-up Driver
- 3 LED Driver
- 4 Nominal Wattage
- 5 Self Diagnostic
- 6 Normal Lumen Output
- 7 1-Piece Enclosure
- 8 Dual Flex Cables
- 9 Packaging Style

**LSXR FAMILY FIXTURE MOUNT SENSOR**

The LSXR Family of fixture mount occupancy sensors provides reliable and versatile solutions for commercial and industrial lighting control applications. All LSXR Family sensors utilize passive infrared (PIR) detection and feature interchangeable lenses, providing flexibility for multiple mounting height and coverage pattern requirements. Available options include dual relays, HVOLT powering, and an integrated switching / dimming photocell.



All LSXR Family sensors utilize 100% digital Passive Infrared (PIR) detection and power from / switch line voltage. Available options include dual relays, HVOLT powering, and an integrated switching / dimming photocell.

**FEATURES**

- Four interchangeable lenses - high mount 360°, low mount 360°, high mount aisleway, and small motion 360°
- Integrated mounting bracket drops lens down 3" from chase nipple - no bracket accessory required
- 100% digital PIR detection - provides excellent RF immunity
- No PIR field calibration or sensitivity adjustments required
- Single or dual relay versions - designed with robust protection from the harsh switching requirements of T5 fluorescent and LED loads
- Powers from single or two-phase line connections
- Reversible hot & load wires - eliminates backwards wiring
- Photocell and 0-10 VDC dimming options
- Digital push-button programming - no tools or analog adjustments required
- Non-volatile settings memory
- Convenient test mode - quickens initial walk and/or photocell testing
- Green LED indicator
- LampMaximizer® minimum on timer (15 min) enables usage of shorter occupancy time delays while protecting fluorescent lamp life
- Default 10 minute occupancy time delay

**Warranty**

Five-year limited warranty. Complete warranty terms located at: [www.acuitybrands.com](http://www.acuitybrands.com)

**Note:** Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice

**Ordering Information**

LSXR Single Relay			Example: LSXR 610 ADC HVOLT J100	
Series	Lens Options		Dimming/Photocell	Voltage
LSXR Passive Infrared Indoor Occupancy Sensor	<b>Single Lens</b> 0 No Lens 6 High Mount 360° 10 Low Mount 360° 50 High Mount Aisleway 9 Small Motion 360°	<b>Multi Lens</b> 610 - High & Low Mount 360° 650 - High Mount 360° & Aisleway 3PK - High & Low Mount 360°, & Aisleway 4PK - All Lenses	[blank] - None HL - High/Low Occupancy Operation P - Switching Photocell (On/Off) ADC - Dimming & Switching Photocell ANL - Dimming & Switching Photocell with High/Low Occ. Operation	[blank] - 120-277 VAC (MVOLT) HVOLT - 347-480 VAC 480 - 480 VAC1

**Ordering Information (continued)**

**Additional Ordering Options**

Visible Light Programming	Max Dim Level <sup>2</sup>	Min Dim Level <sup>2</sup>	Lead Length <sup>2</sup>	Temp / Humidity	Default Time Delay <sup>2</sup>	Pack Qty
[blank] - None VLP - Visible Light Programming	[blank] - 10 VDC 9H - 9 VDC 8H - 8 VDC 7H - 7 VDC	[blank] Min 1V - 1 VDC 2V - 2 VDC 3V - 3 VDC 4V - 4 VDC 5V - 5 VDC 6V - 6 VDC	[blank] - 8" 42L - 42"	[blank] - None LT - Low Temp	[blank] - 10 min (w/ 15 min minimum on time) 5M - 5 min (LED only) 15M - 15 min 20M - 20 Min 30M - 30 Min	[blank] - Single J100 - 100 Pack

1. Not available with HL, ADC or ANL options 2. Available in 100 packs only. Please allow additional time for firmware development

LSXR Dual Relay		2P	Example: LSXR 610 2P AO J100	
Series	Lens Options	Poles	Dimming/Photocell	Voltage
LSXR Passive Infrared Indoor Occupancy Sensor	<b>Single Lens</b> 0 No Lens 6 High Mount 360° 10 Low Mount 360° 50 High Mount Aisleway 9 Small Motion 360°	2P - Dual Relay	[blank] - None AO - Alternating Off Relays (promotes even lamp wear) AOP - Alternating Off Relays w/ Photocell P - Photocell On/Off - Both Poles (single set-point) SZ - Photocell On/Off (Pole 1 only) DZ - Photocell On/Off - Both Poles (Dual set-point)	[blank] - 120-27 VAC (MVOLT) 347 - 347 VAC
	<b>Multi Lens</b> 610 - High & Low Mount 360° 650 - High Mount 360° & Aisleway 3PK - High & Low Mount 360°, & Aisleway 4PK - All Lenses			

**Additional Ordering Options**

Lead Length*	Temp/Humidity	Default Time Delay <sup>2</sup>	Pack Qty
[blank] - 8" 42L - 42"	[blank] - None LT - Low Temp	[blank] - 10 min (w/ 15 min minimum on time) 5M - 5 min (LED only) 15M - 15 min 20M - 20 Min 30M - 30 Min	[blank] - Single J100 - 100 Pack

**Accessory Lenses**

**Example: LENS 6**

Lens Type	Job Pack Qty
LENS 6 - High Mount 360° LENS 10 - Low Mount 360° LENS 50 - High Mount Aisleway LENS 9 - Small Motion 360°	[blank] - Single J10 - 10-Pack J100 - 100-Pack

**Common Configurations**

Model #	#of Relays	Photocell	0-10 VDC Dimming	Power	Included Lenses	Notes on Operation
LSXR 610 HL	1	no	yes	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	Occ. - High/Low/Off (if relay is wired) or High/Low (if relay is not wired)
LSXR 610	1	no	no			Occ. - On/Off control
LSXR 610 P	1	yes	no			Occ. - On/Off control Photocell - On/Off control
LSXR 610 ADC	1	yes	yes			Occ. - On/Off (if relay is wired) or ~0V (if relay is not wired) Photocell - Dim to Off (if relay is wired or ~0V (if relay is not wired)
LSXR 610 ADC 3V J100* (*100 pack option required)	1	yes	yes			Occ. - On/Off (if relay is wired) or 3V (if relay is not wired) Photocell - Dimming to 3V
LSXR 610 2P	2	no	no	120/277 VAC	Occ. - On/Off control both relays	
LSXR 610 2P AO	2	no	no		Occ. - Both relays closed No Occ. - 1 relay opens (alternates to promote even lamp wear)	



**Specifications**

<b>Electrical</b>	Input Ratings	120, 208-277V, 80 mA, 50/60Hz 347V, 60 mA, 50/60Hz 480V, 60 mA, 50/60Hz
	Output Ratings	120V 50/60Hz, 800W/6.67A - Standard Ballast, General Use, Electronic Ballast, Tungsten 208V 50/60Hz, 1040W/5.00A - Standard Ballast, General Use, Electronic Ballast, Tungsten 277V 50/60Hz, 1200W/4.33A - Standard Ballast, General Use, Electronic Ballast, Tungsten 120/208/277V, 1/4HP - Motor 347V 50/60Hz, 1500W/4.33A - Standard Ballast, General Use, Tungsten 480V 50/60Hz, 2400W/5.00A - Standard Ballast, General Use, Tungsten 347/480V, 0.5 FLA/ 3 LRA - Motor
	Relay Type	Latching
	Low Voltage Output Ratings	0-10VDC, Sinks <20mA
	Class Rating	0-10V Dimming can be wired Class 1 or 2
	Standards/ Ratings	Energy Management Equipment, UL916 (E167435)
	<b>Mechanical</b>	Dimensions
Mounting		1/2" Knockout (7/8" hole)
Color		White
Connection Type		Low-Voltage Leads, Line-Voltage Leads
Standards/ Ratings		NEMA WD 7-2011
<b>Environmental</b>	Warrantied Operating Temperature	Standard: 14°F to 140°F (-10°C to 60°C) LT Option: -4°F to 140°F(-20°C to 60°C)
	Relative Humidity	Up to 90%, Non-Condensing
	Standards/ Ratings	RoHS