



Catalog Number	
Notes	Type

PRODUCT OVERVIEW

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.

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.

SENSOR OPERATION

The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a self-contained relay switches the connected lighting load on. No initial field calibration or sensitivity adjustments are required. **LSXR** Family sensors are designed to switch both LED and fluorescent lighting loads. Robust relay protection makes **LSXR** units capable of enduring the extreme inrush conditions often encountered with LED loads.

Additionally, **LSXR** sensors utilize patented LampMaximizer technology that allows users to aggressively target energy savings, by using shorter occupancy time delays, while still protecting fluorescent lamp life. A minimum on timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than fluorescent lamp manufacturers' recommendations.

A standard occupancy time delay is also present to ensure lights turn off (once minimum on timer has also elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, but is adjustable between 30 seconds and 30 minutes. These adjustments may be done through the unit's push-button.

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

LSXR FAMILY

FIXTURE MOUNT SENSOR w/ INTERCHANGEABLE LENSES, PIR, LINE VOLTAGE



KEY OPTIONS

HIGH/LOW OCCUPANCY OPERATION (HL)

- Provides high/low control of a 0-10V dimmable fixture.
- Lights are reduced to an energy saving minimum dim level after expiration of occupancy time delay.
- If relay is wired, lights will switch off after a second time delay.

SWITCHING PHOTOCELL (P & 2P-P)

- Provides increased energy savings by switching lights off during occupied periods with sufficient daylight contribution from windows or skylights.
- Lights will be switched back on if light level falls below set-point.
- 2P-P version always switches both relays together.
- Optional inhibit mode: Photocell will prevent lights from initially turning on if adequate daylight is available, but will not turn lights off.

DIMMING & SWITCHING PHOTOCELL (ADC)

- Provides maximum energy savings by first dimming down, then switching off, lighting during periods of sufficient daylight contribution from windows or skylights.
- When daylight contribution decreases, lights will be first switched back on at full dim and then raised up as necessary.
- Controls 0-10V dimmable fluorescent ballasts and LED drivers.

COMBINATION DIMMING & SWITCHING PHOTOCELL w/ HIGH/LOW OCCUPANCY OPERATION (ANL)

- Provides maximum energy savings by first dimming down, then switching off, lighting during periods of sufficient daylight contribution from windows or skylights.
- During unoccupied periods without sufficient daylight lights are dropped to low dim setting, insuring minimum light levels are maintained at night.
- Controls 0-10V dimmable fluorescent ballasts and LED drivers.

ALTERNATING OFF RELAYS (2P-AO & 2P-AOP)

- Sequence of operation where both relays close during periods of occupancy, but only one opens during vacancy.
- The relay left closed alternates in order to promote even lamp wear.
- 2P-AOP version also includes switching photocell.

DUAL ZONE SWITCHING PHOTOCELL (2P-DZ)

- Provides dual level photocell control for dual relay versions.

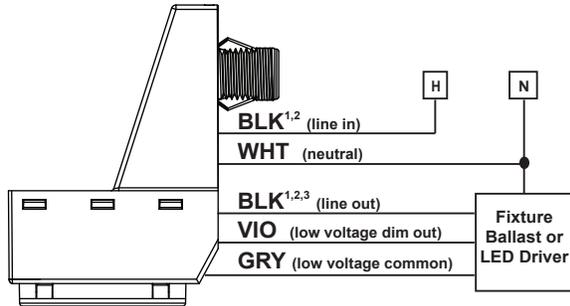
SINGLE POLE SWITCHING PHOTOCELL (2P-SZ)

- Occupancy controls one pole only.
- Switching photocell controls other pole.

WIRING DIAGRAMS - SINGLE RELAY

WIRING TO SINGLE PHASE POWER (120/277/347 VAC)

- BLACK^{1,2} - 120/277 VAC Input (RED wire for 347 VAC)
 - BLACK^{1,2,3} - Switched Line Voltage Output to Luminaire (RED wire for 347 VAC)
 - WHITE - Neutral
 - VIOLET - Low Voltage Dimming Output (0-10 VDC)
 - GRAY - Low Voltage Common
- } wires present with dimming options only



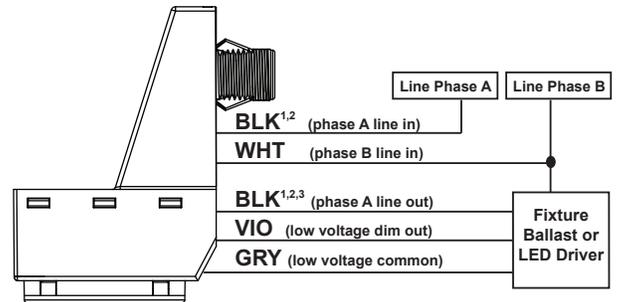
Notes

- Black wires can be reversed
- Wire is Red for HVOLT version (required for 347 VAC)
- Disconnect and cap Black output wire going to driver/ballast if switching fixture is not required.

WIRING TO 2-PHASE POWER (208/240/480 VAC)*

***Safety Note:** only one line phase is being switched, use in direct fixture mount applications only

- BLACK^{1,2} - 208/240 VAC Phase A Input (RED wire for 480 VAC)
 - BLACK^{1,2,3} - Switched Line Voltage Output to Luminaire (RED wire for 480 VAC)
 - WHITE - Phase B of 208/240/480 VAC Input
 - VIOLET - Low Voltage Dimming Output (0-10 VDC)
 - GRAY - Low Voltage Common
- } wires present with dimming options only



Notes

- Black wires can be reversed
- Wire is Red for HVOLT version (required for 480 VAC)
- Disconnect and cap Black output wire going to driver/ballast if switching fixture is not required.

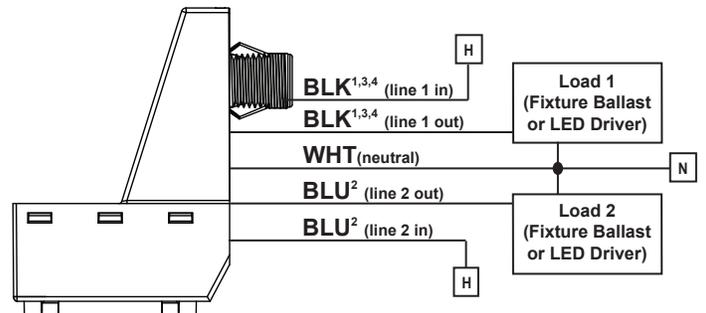
WIRING DIAGRAMS - DUAL RELAY (e.g., LSXR xx 2P)

WIRING FOR 120/277/347

- BLACK^{1,3,4} - Pole 1: 120/277 VAC Input (RED wire for 347 VAC)
- BLACK^{1,3,4} - Pole 1: Switched Line Voltage Output to Luminaire (RED wire for 347 VAC)
- WHITE - Neutral
- BLUE² - Pole 2: 120/277/347 VAC Input (must be same phase as pole 1)
- BLUE² - Pole 2: Switched Line Voltage Output to Luminaire

Operational States for -DZ option

	Occupancy			No Occ.
	Low Daylight	Med. Daylight	High Daylight	
Load 1	On	Off	Off	Off
Load 2	On	On	Off	Off



Notes

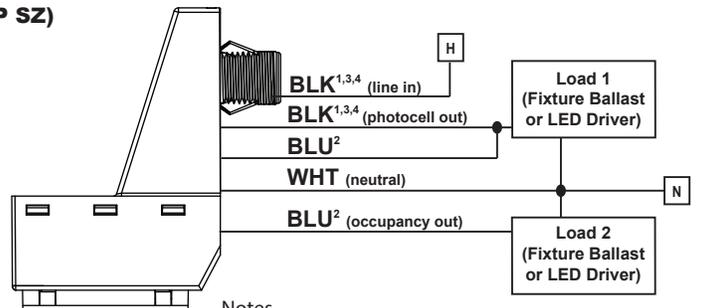
- Black wires can be reversed
- Blue wires can be reversed
- Wire is Red for 347 VAC Version
- Red wires can be reversed

WIRING FOR 120/277/347 WITH -SZ OPTION (e.g., LSXR 6 2P SZ)

- BLACK^{1,3,4} - Pole 1: 120/277 VAC Input (RED wire for 347 VAC)
- BLACK^{1,3,4} - Pole 1: Switched Line Voltage Output to Luminaire (RED wire for 347 VAC)
- WHITE - Neutral
- BLUE² - Pole 2: 120/277/347 VAC Input (must be same phase as pole 1)
- BLUE² - Pole 2: Switched Line Voltage Output to Luminaire

Operational States for -SZ option

	Daylight / Occ.	Daylight / No Occ.	No Daylight & Occ.	No Daylight & No Occ.
Load 1	Off	Off	On	On
Load 2	Off	Off	On	Off



Notes

- Black wires can be reversed
- Blue wires can be reversed
- Wire is Red for 347 VAC Version
- Red wires can be reversed

SPECIFICATIONS

ELECTRICAL SPECS

MAXIMUM LOAD

- 800 W @ 120 VAC
- 1000 W @ 208 VAC
- 1200 W @ 240/277 VAC
- 1500 W @ 347 VAC
- 2160 W @ 480 VAC

MINIMUM LOAD: None

MOTOR LOAD: 1/4 HP

FREQUENCY: 50/60 Hz

DIMMING LOAD: Sinks < 20 mA;

- (~ 40 LED drivers/ballasts @ 0.5 per)
- 0-10VDC dimmable ballasts or LED drivers only

PHYSICAL SPECS

SIZE (w/ Mounting Flange):

- 3.75" H x 2.50" W x 4.00" D
- (9.5 cm x 6.4 cm x 10.2 cm)

WEIGHT: 6 oz

MOUNTING: 1/2" knockout

- (7/8" hole) on fixture

COLOR: White

SILICONE FREE

ROHS COMPLIANT

ENVIRONMENTAL SPECS

OPERATING TEMP

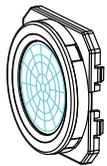
- Standard: 14° to 122° F (-10° to 50° C)
- LT Option (PIR): -40° to 122° F (-40° to 50° C)

RELATIVE HUMIDITY:

- Standard: 20 to 75% non-condensing
- LT Option: 20 to 90% non-condensing
- (electronics coated for corrosion resistance)

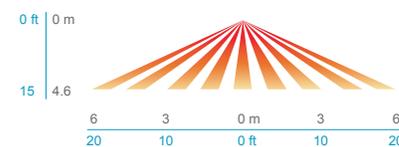
COVERAGE PATTERNS

HIGH MOUNT 360° LENS (#6)

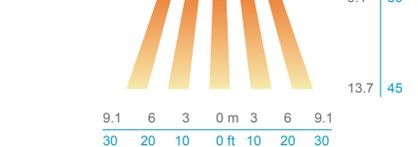


- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. walking) up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion (e.g. forklifts) up to a 45 ft (13.72 m) mounting height

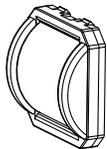
LOW VIEW



HIGH VIEW

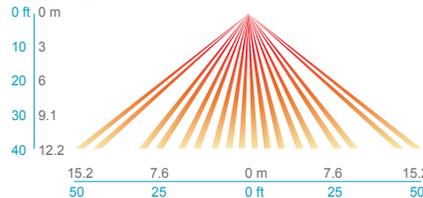


HIGH MOUNT AISLEWAY LENS (#50)

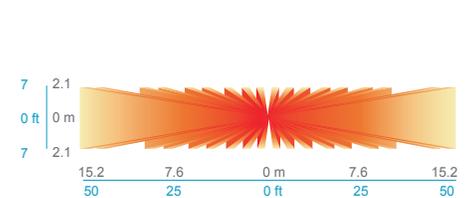


- Provides a bi-directional coverage pattern ideal for warehouse racking
- 1.2x mounting height equals approximate detection range in either direction
- Typical 40 ft (12.19 m) mounting detects 50 ft (15.24 m) in either direction
- Superior aisleway coverage compared to a masked 360° lens

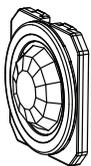
SIDE VIEW



TOP VIEW

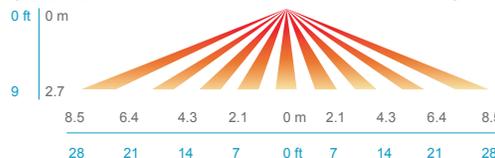


LOW MOUNT 360° LENS (#10)



- Best choice for large motion detection (e.g. walking)
- 360° conical shaped pattern
- Provides 24 ft (8.53 m) radial coverage (~2000 ft²) when mounted at 9 ft (2.74 m)
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Detection range improves when walking across beams compared to into beams

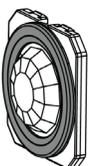
SIDE VIEW



TOP VIEW

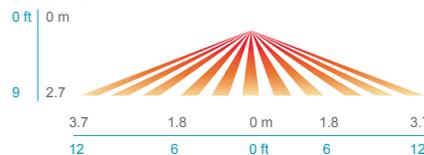


SMALL MOTION 360° LENS (#9)



- Best choice for small motion (e.g. hand movements) detection
- 360° conical shaped pattern
- Provides 12 ft (3.66 m) radial coverage (~500 ft²) when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage
- Lens assembly is marked with a gray ring around lens to differentiate versus the #10 lens

SIDE VIEW

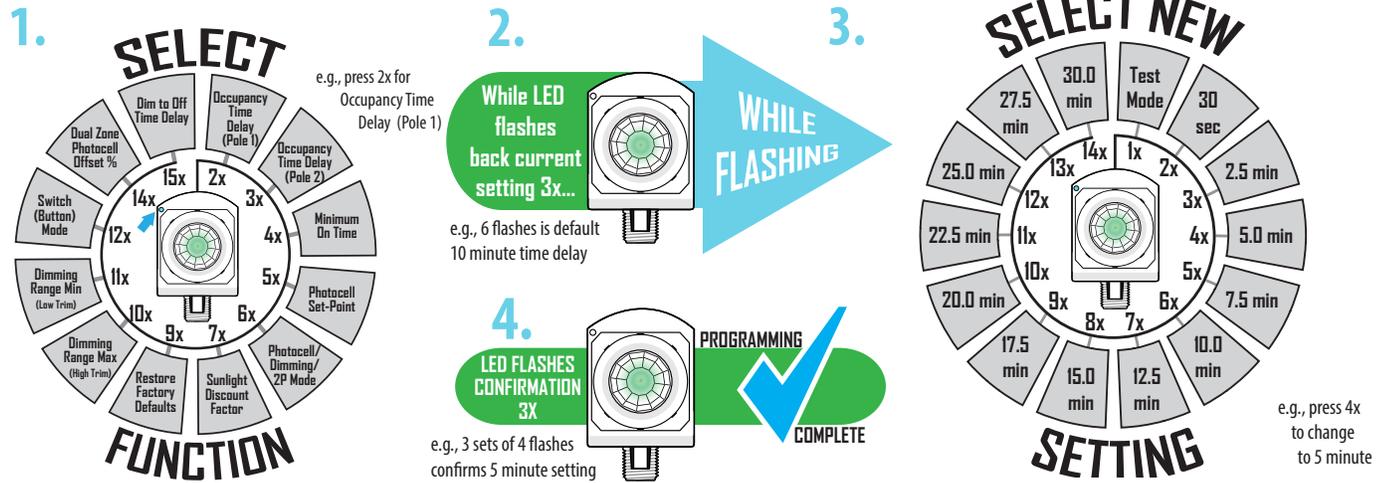


TOP VIEW



PROGRAMMING INSTRUCTIONS

Operational settings can be changed via the push-button sequence outlined below (note the example used is for changing pole 1 occupancy time delay).



OPERATIONAL SETTINGS

NOTE: (*) Indicates factory default (unless otherwise marked)

2 = Occupancy Time Delay (Pole 1)

The length of time the sensor will keep the lights controlled by relay 1 on and at full bright after it last detects occupancy, assuming Minimum On Time (function 4) has been met.

1	Test Mode**	6	10.0 min*	11	22.5 min
2	30 sec	7	12.5 min	12	25.0 min
3	2.5 min	8	15.0 min	13	27.5 min
4	5.0 min	9	17.5 min	14	30.0 min
5	7.5 min	10	20.0 min		

For additional time settings, contact technical support at 1.800.PASSIVE

* Standard default unless specified in model number

**Test mode disables Minimum On Time (Function 4), sets Occupancy Time Delay (Function 2 & 3) to 30 sec, and shortens the photocell transition times and dimming rate. Mode will expire after 10 min or if Function 2 is set back to a time delay.

3 = Occupancy Time Delay (Pole 2)

The length of time the sensor will keep the lights controlled by relay 2 (if present) on after it last detects occupancy, assuming minimum on time (Function 4) has been met.

1	NA	6	10.0 min*	11	22.5 min
2	30 sec	7	12.5 min	12	25.0 min
3	2.5 min	8	15.0 min	13	27.5 min
4	5.0 min	9	17.5 min	14	30.0 min
5	7.5 min	10	20.0 min		

* Standard default unless specified in model number

4 = Minimum On Time (Lamp Maximizer)

The length of time required for lamps to be on in order to prevent short cycling that reduces fluorescent lamp life. If occupancy time delay expires prior to minimum on time being satisfied, the lamps will remain on until time has been met.

1	0 min**	3	30 min	5	60 min
2	15 min*	4	45 min		

* Standard default, reverts to 0 min if occ. time delay is changed from 10M

**Default for 5M, 15M, 20M, 30M option versions

5 = Photocell Set-Point

The target light level (at the sensor) that is to be maintained. Selecting Auto (Setting 1) will initiate on/off cycling procedure where sensor finds close-loop set-point. Not applicable to non-photocell versions.

1	Auto	4	2.0 fc	7	16.0 fc
2	0.5 fc	5	4.0 fc*	8	32.0 fc
3	1.0 fc	6	8.0 fc	9	64.0 fc

6 = Photocell / Dimming / 2-Pole Modes

Single Relay Units with P (Photocell) Option:

- Disabled:** Photocell does not affect lights.
- Full On/Off Ctrl*:** Provides increased energy savings by switching lights off during occupied periods with sufficient daylight contribution from windows or skylights. Lights will be switched back on if light level falls below set-point.
- Inhibit Only Ctrl:** Photocell will prevent lights from initially turning on if adequate daylight is available, but will not turn lights off.

Units with ADC or ANL (Dimming) Options:

- Disabled:** Photocell does not affect lights.
- Automatic Dimming & Switching (-ADC):** Enables the sensor during occupied periods to dim lights down and then turn them completely off by opening the relay.
- Combination Dimming & Switching**

Photocell w/ High/Low Occ. Operation (-ANL): Provides maximum energy savings by dimming and/or switching off lighting during periods of sufficient daylight contribution from windows or skylights. During unoccupied periods without sufficient daylight lights are dropped to low dim setting, insuring minimum light levels are maintained at night.

Dual Relay (2P) Units - All Options:

- Photocell (if present) is Disabled.
- Standard Photocell Option (-P):** Photocell controls both relays together with a single set-point.
- Single Zone (-SZ) Photocell Option:** Relay 1 controlled by photocell only, relay 2 controlled by occupancy only.
- Dual Zone (-DZ) Photocell Option:** Relay 1 controlled according to set-point, relay 2 controlled at fixed % higher as specified in Dual Zone Photocell Offset % (Function 14).
- Inhibit Only Ctrl:** Photocell will prevent lights from initially turning on if adequate daylight is available, but will not turn lights off. Photocell controls both relays according to set-point.
- Alternating Off Relays (-AO):** Both relays close during periods of occupancy, but only one opens during periods of vacancy. The relay left closed is alternated in order to promote even lamp wear.
- Alternating Off Relays w/ Photocell (-AOP):** Both relays close during periods of occupancy, but only one opens during periods of vacancy or high daylight. The relay left closed is alternated in order to promote even lamp wear.

7 = Sunlight Discount Factor

Value used to improve the tracking accuracy of a sensor with a photocell during periods of high daylight. Decreasing the value will lower the controlled level of the lights.

1	x/1*	4	x/4	7	x/7	10	x/10
2	x/2	5	x/5	8	x/8		
3	x/3	6	x/6	9	x/9		

9 = Restore Factory Defaults

Returns all functions to original settings.

1	Maintain Current*	2	Restore Defaults
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10 = Dimming Range Max (High Trim)

The maximum output level of a sensor with dimming. Default is "10 VDC" unless indicated in model number.

1	Off	4	3 VDC	7	6 VDC	10	9 VDC
2	1 VDC	5	4 VDC	8	7 VDC	11	10 VDC*
3	2 VDC	6	5 VDC	9	8 VDC		

11 = Dimming Range Min (Low Trim)

The minimum output level of a sensor with dimming. *Default is "0V" (**1V for HL units) unless low setting specified in model number.

1	Off*	4	3 VDC	7	6 VDC	10	9 VDC
2	1 VDC**	5	4 VDC	8	7 VDC	11	10 VDC
3	2 VDC	6	5 VDC	9	8 VDC		

12 = Switch (Button) Mode

When enabled, mode allows user to switch the relay by pressing the push button for test purposes (e.g., in order to test wiring). Note there is a short delay after pushing the button before the relay switches.

1	Disabled*	2	Enabled
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14 = Dual Zone Photocell Offset %

Relative value of photocell set-point that is used to control relay 2. Applies only to dual relay (2P) units with the -DZ option.

1	110%	4	140%	7	170%	10	200%
2	120%	5	150%*	8	180%		
3	130%	6	160%	9	190%		

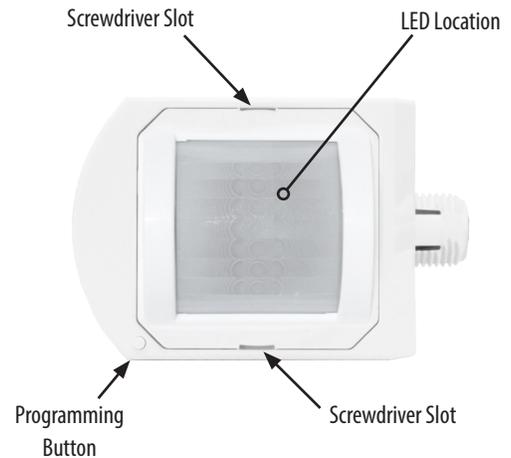
15 = Dim to Off Time Delay

An extended length of time after the Occupancy Time Delay (Function 2) has expired and lighting is dimmed to the low dimming range setting before the relay opens. Applicable to dimming versions only.

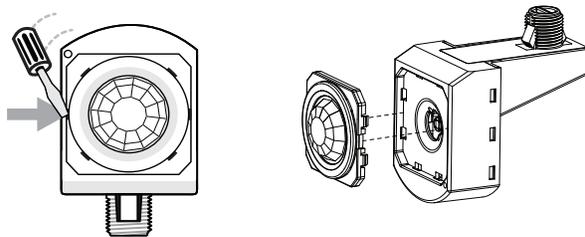
1	Disabled*	4	5.0 min	8	15.0 min
2	30 sec	5	7.5 min	9	17.5 min
3	2.5 min**	6	10.0 min	10	20.0 min
	(** HL default)	7	12.5 min	11	Infinite

INSTALLATION

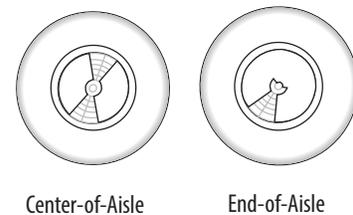
- To mount, push the unit's threaded chase nipple through a 1/2" knockout (7/8" hole) in a fixture.
- A snap lock mechanism on the chase nipple will secure the sensor.
- To interchange lenses, pry out installed lens using a small flat screw driver inserted into one of the slots shown below
- Apply light pressure on lens frame sides to snap in new lens.
- Install lens with the most optimum coverage pattern for a particular space and application
- Masking labels are included with the high bay 360° lens to mask off a portion of its coverage pattern for end-of-aisle, or to trim the side viewing to create a rectangular pattern for center-of-aisle.
- Masking labels are included with the high bay aisle way lens to mask off a portion of its coverage pattern for end-of-aisle applications.



REMOVING LENS



HIGH MOUNT 360° MASKING KIT



COMMON CONFIGURATIONS (see page 6 for full ordering information)

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°	<u>Occ.</u> - High/Low/Off (if relay is wired) or High/Low (if relay is not wired)
LSXR 610	1	no	no	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	<u>Occ.</u> - On/Off control
LSXR 610 P	1	yes	no	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	<u>Occ.</u> - On/Off control <u>Photocell</u> - On/Off control
LSXR 610 ADC	1	yes	yes	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	<u>Occ.</u> - On/Off (if relay is wired) or ~0V (if relay is not wired) <u>Photocell</u> - 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	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	<u>Occ.</u> - On/Off (if relay is wired) or 3V (if relay is not wired) <u>Photocell</u> - Dimming to 3V
LSXR 610 2P	2	no	no	120/277 VAC	High Mount 360° & Low Mount 360°	<u>Occ.</u> - On/Off control both relays
LSXR 610 2P AO	2	no	no	120/277 VAC	High Mount 360° & Low Mount 360°	<u>Occ.</u> - Both relays closed <u>No Occ.</u> - 1 relay opens (alternates to promote even lamp wear)

ORDERING INFORMATION

SINGLE RELAY (example: LSXR 610 ADC HVOLT J100)

LSXR		Lens Options		Dimming/Photocell	Voltage	
Series	LSXR Passive Infrared Indoor Occupancy Sensor	Single Lens	Multi-Lens	(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 (see description on pg.1)	(blank) 120-277 VAC (MVOLT) HVOLT 347-480 VAC	
addl. ordering options (*available in 100 packs only)	Max Dim Level*	Min Dim Level*	Lead Length*	Temp / Humidity	Default Time Delay*	Pack Qty
	(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) 14" 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

*option available in 100-pack qty's only (add J100 option)

DUAL RELAY (example: LSXR 610 2P AO J100)

LSXR		Lens Options		2P	Operating Mode	Voltage	
Series	LSXR Passive Infrared Indoor Occupancy Sensor	Single Lens	Multi-Lens	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) 120/277 VAC 347 347 VAC	
addl. ordering options (*available in 100 packs only)				Lead Length*	Temp / Humidity	Default Time Delay*	Pack Qty
				(blank) 14" 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

*option available in 100-pack qty's only (add J100 option)

ACCESSORY LENSES (example LENS 50 J100)

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

AcuityBrands

Expanding the boundaries of lighting™



CSA LISTED
TITLE 24
ASSEMBLED in U.S.A.
5 YEAR WARRANTY

WARNING

Fire Hazard Caution: Maximum Lamps 1500 Watts, Type 347VAC.
Attention: Risque d'incendie : Puissance Maximales Des Lampes 1500W, Type 347VAC.
WARNING: The units are intended to be installed by a qualified person with properly rated branch circuit protectors as per applicable local and national regulations (CEC, NEC).

Sheet#: TS-LSXR-001A