Catalog Number: | Date: | Project:

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. 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
- Default 10 minute occupancy time delay

Warranty

Five-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 located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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

sensorswitch®

LSXR Family
Fixture Mount Sensor

ORDERING INFORMATION

LSXR Single Relay — **Example: LSXR 610 ADC HVOLT J100**

Series	Lens Options	Dimming/Photocell	Voltage
LSXR Passive Infrared Indoor Occupancy Sensor	**Single Lens** 0 No Lens 6 High Mount 360° 10 Low Mount 360° 50 High Mount Aisleway 9 Small Motion 360° **Multi-Lens** 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 VAC[1]

Visible Light Programming	Max Dim Level	Min Dim Level	Lead Length	Default Time Delay	Temp / Humidity	Pack Qty
[blank] None VLP Visible Light Programming	[blank] 10 VDC 9H[2] 9 VDC 8H[2] 8 VDC 7H[2] 7 VDC	[blank] Min 1V[2] 1 VDC 2V[2] 2 VDC 3V[2] 3 VDC 4V[2] 4 VDC 5V[2] 5 VDC 6V[2] 6 VDC	[blank] 8" 42L[2] 42"	[blank] 10 min (w/ 15 min minimum on time) 5M[2] 5 min (LED only) 15M[2] 15 min 20M[2] 20 Min 30M[2] 30 Min	[blank] None LT Low Temp	[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 — **Example: LSXR 610 2P AO J100**

		2P		
Series	**Lens Options**	**Poles**	**Operating Mode**	**Voltage**
LSXR Passive Infrared Indoor Occupancy Sensor	Single Lens: 0 No Lens; 6 High Mount 360°; 10 Low Mount 360°; 50 High Mount Aisleway; 9 Small Motion 360° Multi-Lens: 610 High & Low Mount 360°; 650 High Mount 360° & Aisleway; 3PK High & Low Mount 360°, & Aisleway; 4PK All Lenses	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 (MVOLT) 347 347 VAC

Additional Ordering Options

Lead Length*	**Temp / Humidity**	**Default Time Delay***	**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

*Available in 100 packs only. Please allow additional time for firmware development.

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	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	Occ. - On/Off control
LSXR 610 P	1	yes	no	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	Occ. - On/Off control Photocell - On/Off control
LSXR 610 ADC	1	yes	yes	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	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	120-277 VAC (MVOLT)	High Mount 360° & Low Mount 360°	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	High Mount 360° & Low Mount 360°	Occ. - On/Off control both relays
LSXR 610 2P AO	2	no	no	120/277 VAC	High Mount 360° & Low Mount 360°	Occ. - Both relays closed No Occ. - 1 relay opens (alternates to promote even lamp wear)

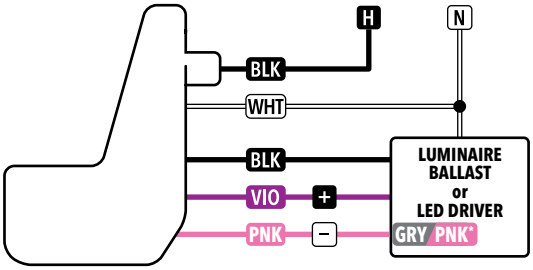
SPECIFICATIONS

Electrical	**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)
Mechanical	**Dimensions**	3.75"H x 2.50"W x 4.00"D (95mm x 64mm x 102mm)
	Mounting	1/2" Knockout (7/8" hole)
	Color	White
	Connection Type	Low-Voltage Leads, Line-Voltage Leads
	Standards/ Ratings	NEMA WD 7-2011
Environmental	**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

WIRING DIAGRAMS- SINGLE RELAY

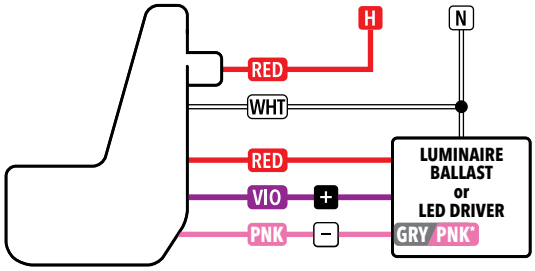
Single Phase Wiring

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
SWITCHING AND DIMMING
120/277 VAC (MVOLT)



*0-10V Dimming Common from luminaire may be pink or as otherwise indicated per section 410.69 of the 2020 NEC

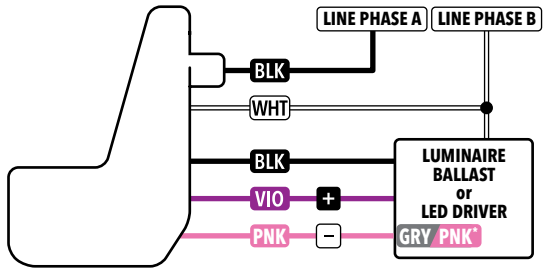
LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
SWITCHING AND DIMMING
347 VAC (HVOLT)



*0-10V Dimming Common from luminaire may be pink or as otherwise indicated per section 410.69 of the 2020 NEC

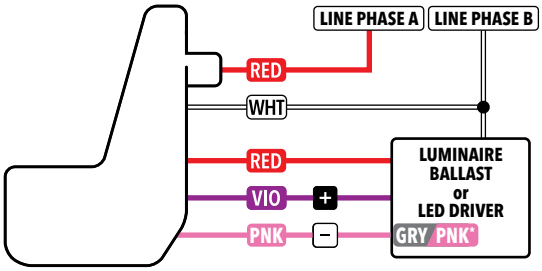
2 Phase Wiring

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
SWITCHING AND DIMMING
208/240 VAC (MVOLT)



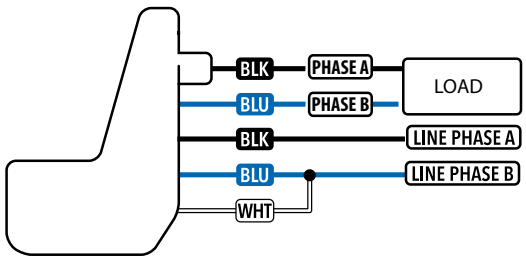
*0-10V Dimming Common from luminaire may be pink or as otherwise indicated per section 410.69 of the 2020 NEC

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
SWITCHING AND DIMMING
480 VAC (HVOLT)



*0-10V Dimming Common from luminaire may be pink or as otherwise indicated per section 410.69 of the 2020 NEC

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
2 PHASE SWITCHING
480 VAC (480 VAC)

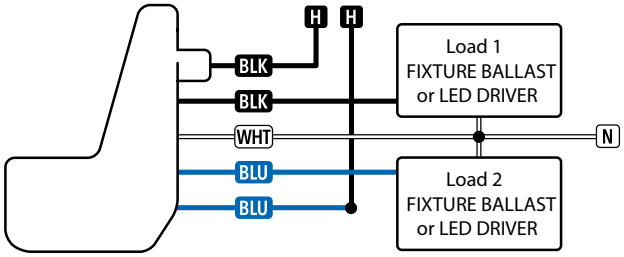


WIRING DIAGRAMS- DUAL RELAY (E.G., LSXR XX 2P)

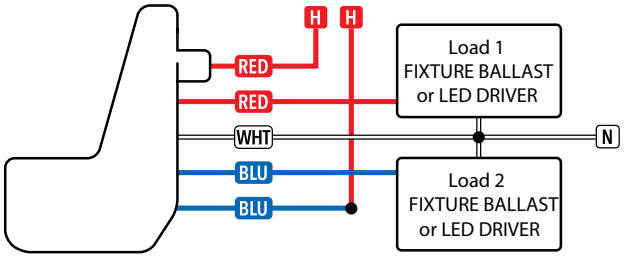
Operational States for -DZ option

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

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
2-POLE SWITCHING
120/277 VAC (MVOLT)



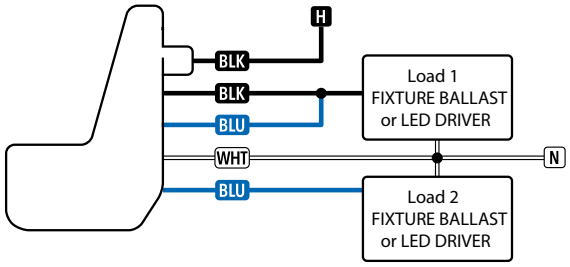
LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
2-POLE SWITCHING
347 VAC (HVOLT)



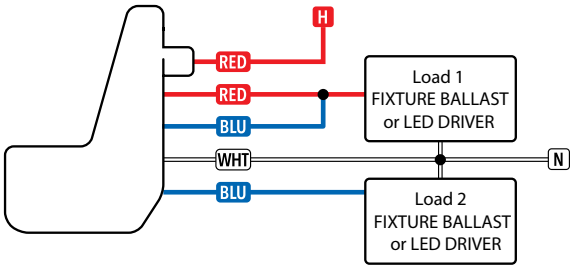
Operational States for -SZ option

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

LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
2P W/ SINGLE ZONE ON/OFF PHOTOCONTROL (MVOLT)

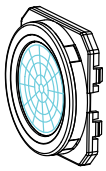


LINE VOLTAGE INTERCHANGEABLE LENS FIXTURE MOUNT:
2P W/ SINGLE ZONE ON/OFF PHOTOCONTROL (HVOLT)

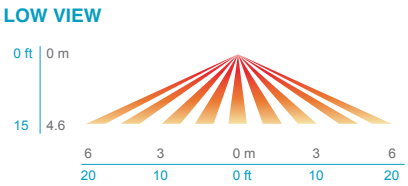


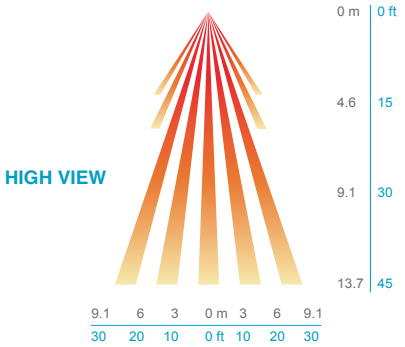
COVERAGE PATTERNS

HIGH MOUNT 360° LENS (#6)

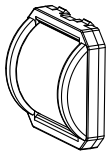


- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. walking) up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion (e.g. forklifts) up to a 45 ft (13.72 m) mounting height
- Tested to NEMA WD 7-2011

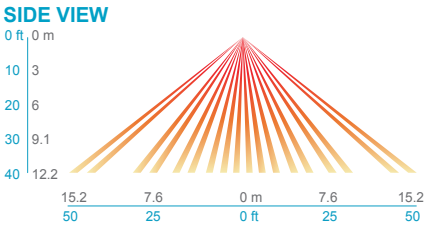


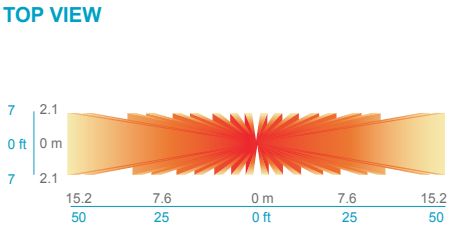


HIGH MOUNT AISLEWAY LENS (#50)

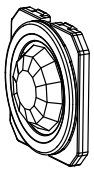


- Provides a bi-directional coverage pattern ideal for warehouse racking
- 1.2x mounting height equals approximate detection range in either direction
- Typical 40 ft (12.19 m) mounting detects 50 ft (15.24 m) in either direction
- Superior aisleway coverage compared to a masked 360° lens

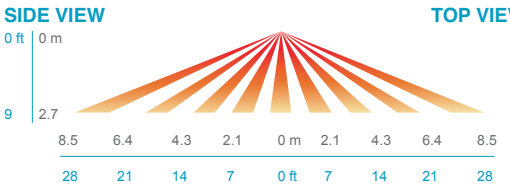


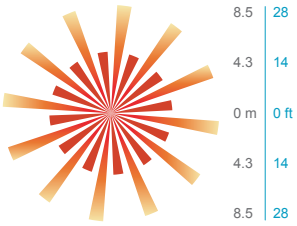


LOW MOUNT 360° LENS (#10)

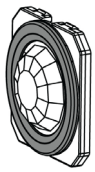


- Best choice for large motion detection (e.g. walking)
- 360° conical shaped pattern
- Provides ~24 ft (7.32 m) radial coverage (~2000 ft²) when mounted at 9 ft (2.74 m)
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Detection range improves when walking across beams compared to into beams

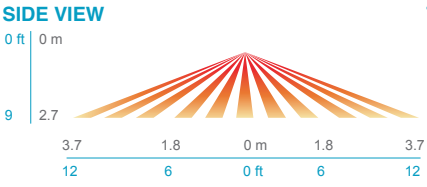


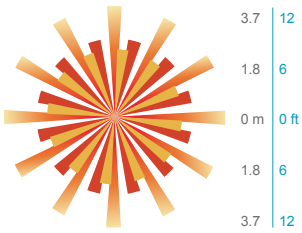


SMALL MOTION 360° LENS (#9)



- 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

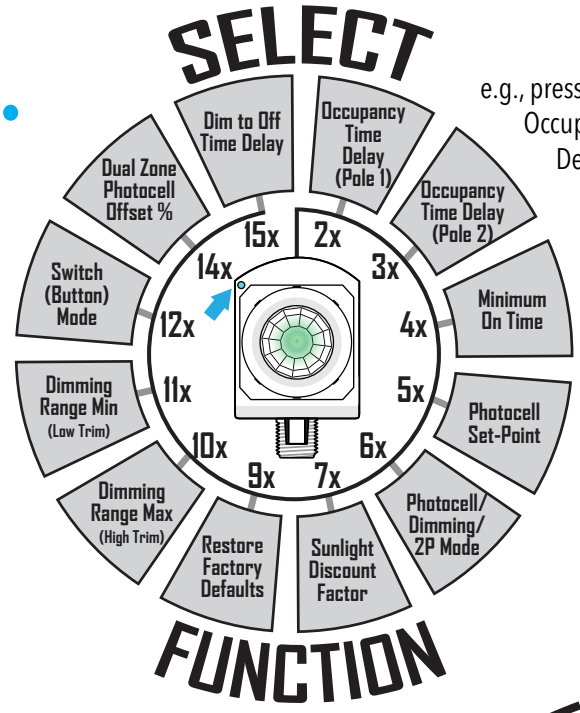




PROGRAMMING INSTRUCTIONS

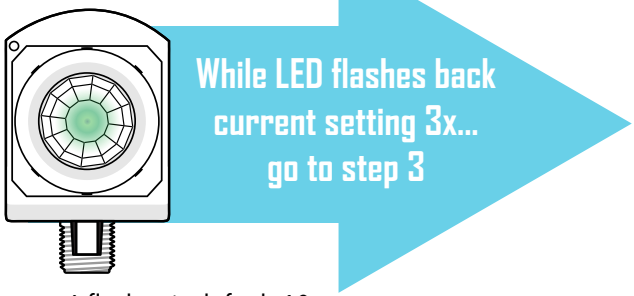
Operational settings can be changed via the push-button sequence outlined below (note the example used is for changing pole 1 occupancy time delay).

1.



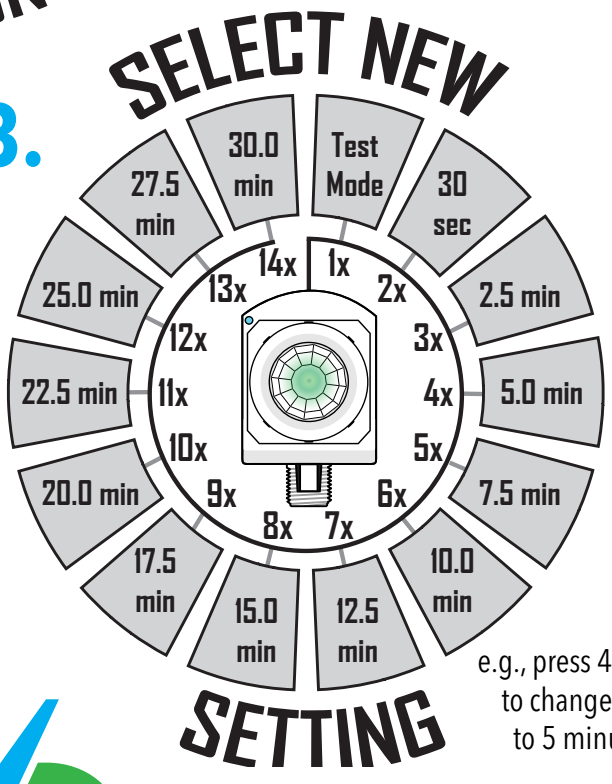
e.g., press 2x for Occupancy Time Delay (Pole 1)

2.



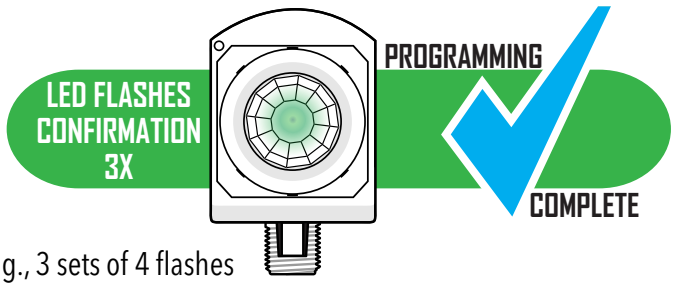
e.g., 6 flashes is default 10 minute time delay

3.



e.g., press 4x to change to 5 minute

4.



e.g., 3 sets of 4 flashes confirms 5 minute setting

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 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:

1 Disabled: *Photocell does not affect lights.*

2 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.*

3 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:

1 Disabled: *Photocell does not affect lights.*

2 Automatic Dimming & Switching (-ADC): *Enables the sensor during occupied periods to dim lights down and then turn them completely off by opening the relay.*

3 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:

1 *Photocell (if present) is Disabled.*

2 Standard Photocell Option (-P):
Photocell controls both relays together with a single set-point.

3 Single Zone (-SZ) Photocell Option:
Relay 1 controlled by photocell only, relay 2 controlled by occupancy only.

4 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).

5 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.*

6 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.*

7 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

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)

For sensors with -ADC or -ANL option, this setting is the minimum output level to which the photocell will dim the lights. For lights to turn off from daylight, setting 1 must be selected.

Also, for all sensors with dimming, this setting is the dim level the lights will drop to when the Occupancy Time Delay (Function 2) expires. Note if the relay is wired, lights will still turn completely off after the Dim to Off Occupancy Time Delay (Function 15) expires.

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		

**Indicates default unless otherwise specified in model number*
***Indicates default for -HL option unless otherwise specified in model number*

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

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 Occupancy Time Delay

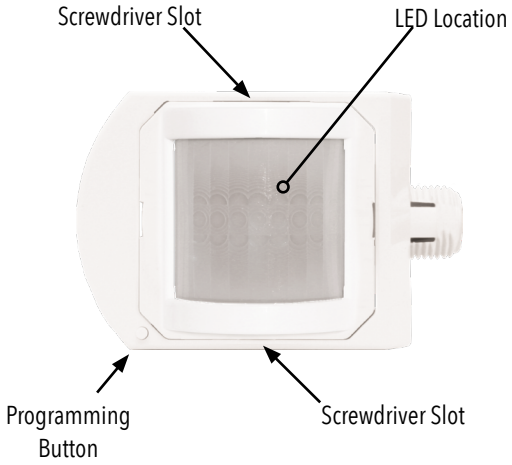
After the Occupancy Time Delay (Function 2) has expired, this setting specifies the amount of time lights are held at minimum dim (Function 11) before turning off. Setting is only applicable for sensors with -HL and -ADC dimming options.

1	0 sec*	**5**	7.5 min	**9**	17.5 min
2	30 sec	**6**	10.0 min	**10**	20.0 min
3	2.5 min**	**7**	12.5 min	**11**	Stays at dim
4	5.0 min	**8**	15.0 min		(never off)

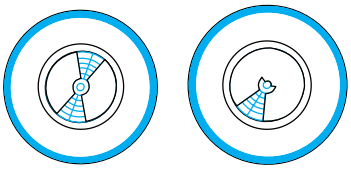
***HL default*

INSTALLATION

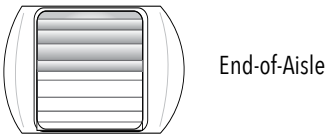
- To mount, push the unit's threaded chase nipple through a 1/2" knockout (7/8" hole) in a fixture.
- A snap lock mechanism on the chase nipple will secure the sensor.
- To interchange lenses, pry out installed lens using a small flat screw driver inserted into one of the slots shown below
- Apply light 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.



HIGH MOUNT 360° MASKING KIT



HIGH MOUNT AISLEWAY MASKING KIT



REMOVING LENS