



### CAUTIONS

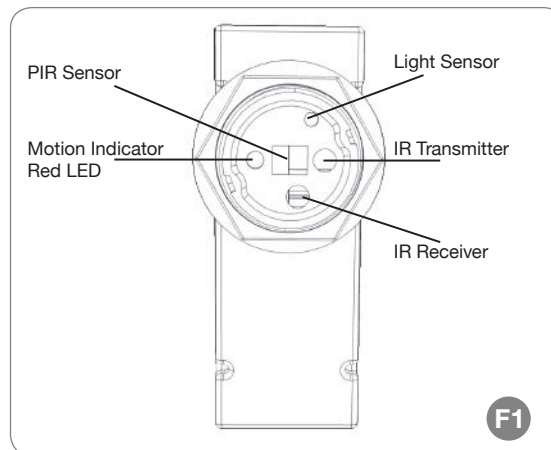
#### IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To avoid the possibility of electrical shock, turn off power supply before installation or servicing.
2. Product must be installed in accordance with NEC or your local electrical code. If you are not familiar with these codes and requirements, consult a qualified electrician.
3. All electrical connections have been made at the factory.
4. The sensor is designed for mounting heights between 8 ft. to 40 ft., see figure 1, 2 and 3 for product specific coverage pattern. The handheld remote unit has a range of only 40ft.
5. When mounting heights are above 30ft., the sensor generally only detects large objects such as forklift trucks.
6. When sensor lens assembly is removed the exposed sensor body is sensitive to electrostatic discharge. Take the necessary steps to avoid possible damage to the sensor.

#### SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE



#### SENSOR DESCRIPTION

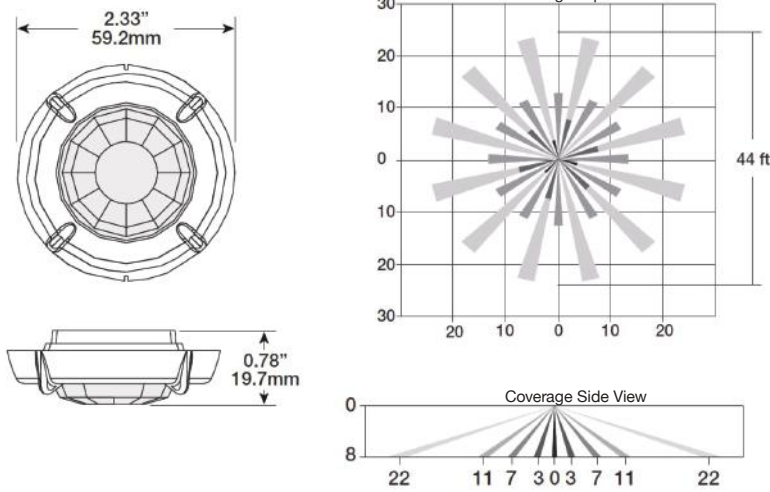
The FSP-211 is a motion sensor that dims lighting from high to low based on movement. This slim, low-profile sensor is designed for installation inside the bottom of a light fixture body. The PIR lens module connects to the FSP-211 through a 1.30" diameter hole in the bottom of the fixture.

The sensors use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Once the sensor stops detecting movement and the time delay elapses, lights will go from high to low mode and eventually to an OFF position if it

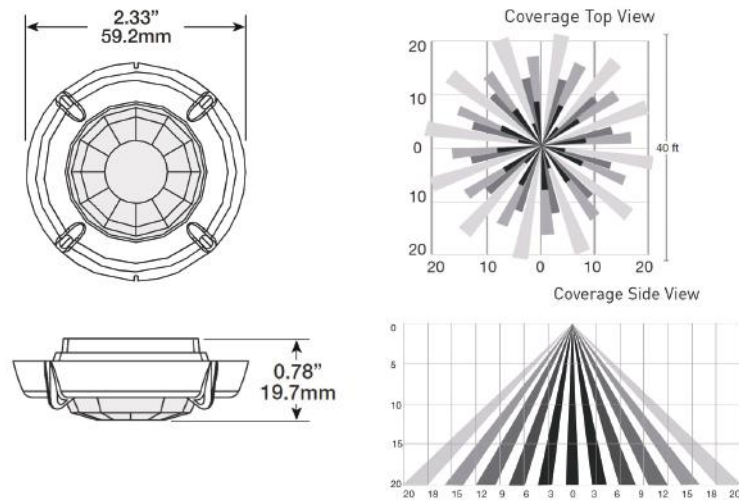
is desired. Sensors must directly "see" motion of a person or moving object to detect them, so careful consideration must be given to sensor luminaire placement and lens selection. Avoid placing the sensor where obstructions may block the sensor's line of sight. See **Figure 1**.

The FSP-211 operates at 120V/230V/240V/277V, no power pack is required. It is designed to be installed in indoor and outdoor environments. Once powering the device up, the FSP-211 will use factory default parameters to operate. If adjustments are needed, programming tool must be used.

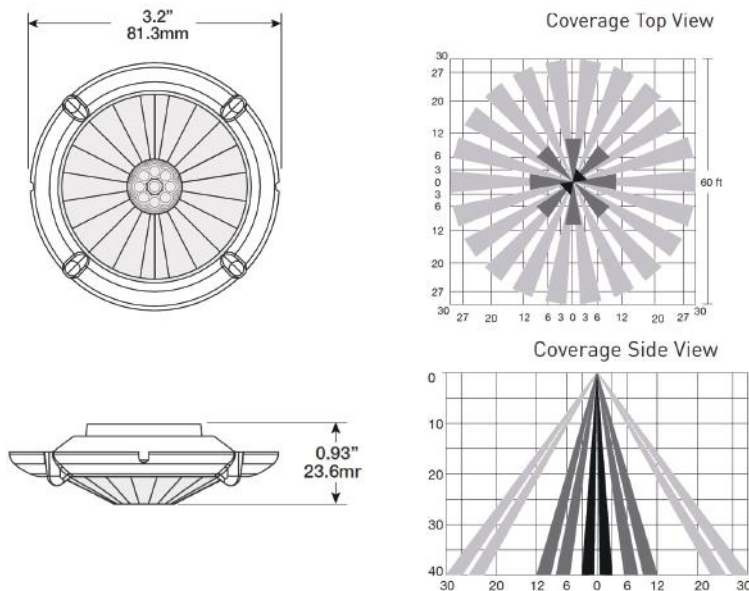
**F2** FSP-L2 Low Density/Wide Range Lens



**F3** FSP-L3 High Density/Reduced Range Lens



**F4** FSP-L4 40 Foot High Bay Lens



**INSTALLATION**

The FSP-211 unit comes pre-wired and installed in the fixture.

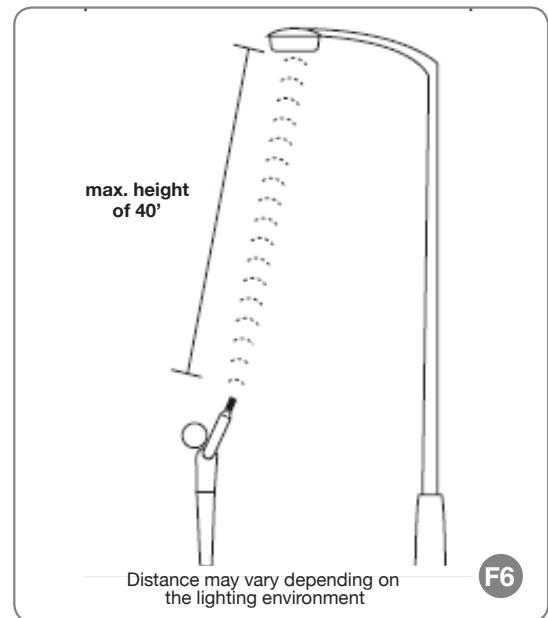
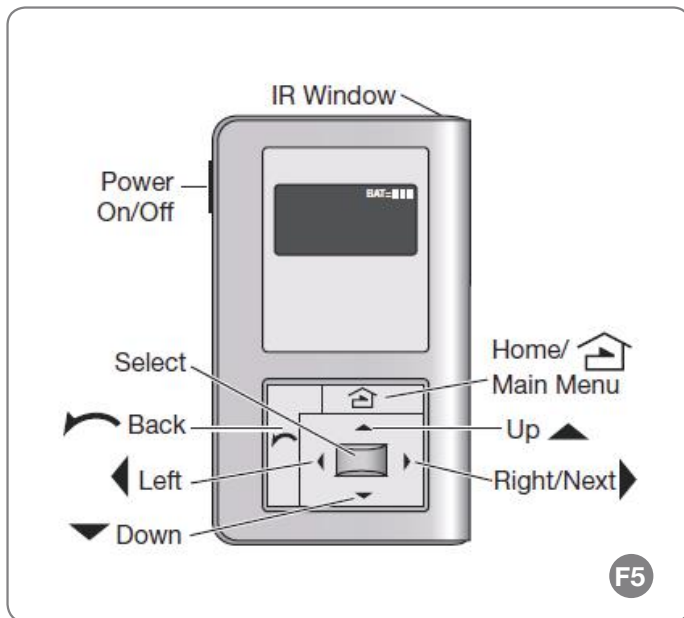
**COVERAGE PATTERN**

The density and the range of the coverage pattern is determined by the type of lens and mounting height. For standard lenses and patterns for:

FSP-L2: 360 ° Coverage - Provides a 44' diameter coverage area when mounted at a height of 8'. See **FIGURE 2**.

For FSP-L3: 360 ° Coverage - has a high density lens that covers a 40' diameter area at a height of 20'. See **FIGURE 3**.

For FSP-L4: 360 ° Coverage - is designed for mounting at heights between 30' to 40'. Its coverage area can be up to 60' in diameter when mounted at 40' (EDGE®, Area Canopy and Security products only). See **FIGURE 4**.



## FSP-211 COMMISSIONING

The commissioning process establishes the appropriate parameters for the FSP-211 operation. This is done through the use of the commissioning tool. If no commissioning steps are taken, the sensor will use its default parameter values. For default values see “Navigation of Programming Tool” section.

## USING THE PROGRAMMING TOOL

The Wireless IR Programming Tool is a handheld tool for setup and testing of FSP-211. It provides wireless access to the FSP-211 sensors for setup and parameter changes. The programming tool display shows menus and prompts to lead you through each process. The navigation pad provides a familiar way to navigate through the customization fields. See **Figure 5**.

Within a certain mounting height of the sensor, 40’ or less, the programming tool allows modification of the system without requiring ladders or tools; simply with a touch of a few buttons.

## OPERATION

The programming tool IR transceiver allows bi-directional communication between the FSP-211 and the programming tool. Simple menu screens let you see the current status of the system and make changes. It can change FSP-211 sensor parameters such as high/low mode, sensitivity, time delay, cut off and more. With the programming tool you can also establish and store FSP-211 parameter profiles.

## BATTERIES

The programming tool operates on three standard 1.5V AAA Alkaline batteries or three rechargeable AAA NiMH batteries. The battery status displays in the upper right corner of the display. Three bars next to BAT= indicates a full battery charge. A warning appears on the display when the battery level falls below a minimum acceptable level. To conserve battery power, the programming tool automatically shuts off 10 minutes after the last key press.

## NAVIGATION

You navigate from one field to another using (up) or (down) arrow keys. The active field is indicated by flashing (alternates between yellow text on black background and black text on yellow background).

Once active, use the Select button to move to a menu or function within the active field. Value fields are used to adjust parameter settings. They are shown in “less-than/greater-than” symbols: <value>. Once active, change them using (left) and (right) arrow keys. In general the up key increments and the down key decrements a value. Selections wrap-around if you continue to press the key beyond maximum or minimum values. Moving away from the value field overwrites the original value. The Home button takes you to the main menu. The Back button can be thought of as an undo function. It takes you back one screen. Changes that were in process prior to pressing the key are lost.

## IR COMMUNICATION

IR communication can be affected by the mounting height of the sensor and high ambient lighting such as direct daylight or electric light such as floodlights, and some halogen, fluorescent lamps, LED’s.

When trying to communicate with the FSP-211, be sure to be positioned under the sensor without any obstructions. Every time the programming tool establishes communication with the FSP-211, the controlled load will cycle. See **Figure 6**.

- If communication is not successful, (if possible) move closer to the sensor.
- If still not successful, there may be too much IR interference from other sources. Programming the unit at night when there is no daylight available may be the only way to communicate with the sensor

## NAVIGATION OF PROGRAMMING TOOL

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### HOME MENU

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The Home (or Main) menu displays after the power-up process completes. It contains information on the battery status and four menu choices. Press the up or down buttons to highlight the desired sensor then press **Select**.

### NEW SETTINGS

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New Settings allow you to select the different sensor parameters such as: High/Low Mode, Time Delay, Cut Off, Sensitivity, Setpoint and Ramp/Fade rates.

#### HIGH MODE

When the sensor detects motion the dimming control output ramps up to the selected HIGH light level (default is 10V).

Range: 0 V to 10 V  
Increments: 0.2 V

#### LOW MODE

After the sensor stops detecting motion and the time delay expires the dimming control output fades down to the selected LOW light level (default is 1V).

Range: OFF, 0 V to 9.8 V  
Increments: 0.2 V

#### TIME DELAY

The time period that must elapse after the last time the sensor detects motion for the lights to fade to LOW mode (default is 5 min).

Range: 30 sec, 5 min to 30 min  
Increments: 1 min

#### CUT OFF

The time period that must elapse after the lights fade to Low Mode and the sensor detects no motion for the lights to turn OFF (default is 1 hour).

Range: None (No cut off, lights will stay in low mode) 1 min to 59 min, 1 hr to 5 hr (press and hold should cause to move faster through the increments)  
Increments: 1 min or 1 hr

#### SENSITIVITY

The response of the PIR detector to motion within the sensor's coverage area (default is max).

Range and Sequence: On-Fix, Off-Fix, Low, Med, Max (On-Fix: relay closed, occupancy detection disabled; Off-Fix, relay open, occupancy detection disabled).

#### SETPOINT

The selectable ambient light level threshold that will hold the lights off or at LOW level when the sensor detects motion (default is 4 fc).

Range: Auto, None, 1 fc to 250 fc  
Increments: 1 fc (press and hold should cause to move faster thru the increments)

Sequence: None, 1 fc to 250 fc (None will disable the setpoint feature)

The Auto option invokes an automatic calibration procedure to establish an appropriate setpoint based upon the contribution of the electric light. As part of this procedure, the controlled load is turned on for two minutes to warm up the lamp, and then it is switched off and on eight times, terminating in an off state. After this process, a new setpoint value is automatically calculated.

#### NEXT

To view more settings go to NEXT and press the Select button.

#### RAMP UP

Time period for light level to increase from LOW to HIGH (default is none; lights switch instantly).

Range: None, 1 sec to 60 sec  
Increments: 1 sec

#### FADE DOWN

Time period for light level to decrease from HIGH to LOW (default is none; lights switch instantly).

Range: None, 1 sec to 60 sec  
Increments: 1 sec

#### PRIOR

To go back to previous settings go to PRIOR and press the Select button.

#### SAVE

To be able to Save these parameters as one of the profiles go to SAVE and press the Select button.

#### SEND

To be able to program the FSP-211 with the selected parameters go to SEND and press the Select button. The controlled load should cycle once the sensor is programmed.

## CURRENT SETTINGS

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Current Settings allow you to recall the parameters for a specific sensor. These are read only parameters.

#### VIEW CURRENT SETTINGS

Text for viewing the current settings. Press Select to view more settings.

To go back to previous settings go to PRIOR and press the Select button.

#### LIGHT LEVEL

Present light level at the FSP-211. The light level reading can be used as a reference for setpoint adjustments.

#### SAVE

To be able to Save these parameters as one of the profiles go to SAVE and press the Select button.

#### DONE

To be able to go to the FSP-211 Home screen go to DONE and press the Select button.

#### TEST MODE

Test Mode shortens timeouts for High/Low and Cut Off, to allow quick verification. Test Mode cancels automatically after 5 minutes.

#### ENABLE/DISABLE

Test Mode has been enabled.

## RECALL PROFILES

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Recall Profiles allow you to select the saved parameter profiles. This feature is used when programming multiple FSP-211's with the same parameters.

#### RECALL PARAMETERS

Selecting a specific profile allow you to also change the parameters such as: High/Low Mode, Time Delay, Cut Off, Sensitivity, Setpoint and Ramp/Fade rates.

## DEFAULT PARAMETER VALUES

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HIGH MODE:	10V
LOW MODE:	1V
TIME DELAY:	5 minutes
CUT OFF:	1 hour
SENSITIVITY:	Max
SETPOINT:	4 fc
RAMP UP:	none; lights switch instantly
FADE DOWN:	none; lights switch instantly

## TROUBLESHOOTING

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### NO RESPONSE SCREEN APPEARS:

- Make sure that the sensor is not obstructed.
- Move closer to the sensor.
- The angle may be too high, move closer so that you are directly underneath the sensor.
- If still not successful, there may be too much IR interference from other sources. Programming the unit at night when there is no daylight available may be the only way to communicate with the sensor.

### LIGHTS WILL NOT GO TO HIGH MODE:

- Check all wire connections and verify the load and the ground wires are tightly secured.
- Make sure that the sensor is not obstructed.
- Check light level parameter, to find out the amount of light that the sensor is detecting. Cover the sensor lens to simulate darkness in the room. If the lights come ON, the setpoint needs to be adjusted. If set for minimum, more than 1 fc at the sensor of ambient light will cause the lights to be held OFF. See the new settings section for instructions.
- If lights still do not turn ON, call 800.236.6800 for technical support.

### LIGHTS WILL NOT GO INTO LOW MODE:

The time delay can be set from a minimum of 30 seconds to a maximum of 5 to 30 minutes range. Ensure that the time delay is set to the desired delay and that there is no movement within the sensor's view for that time period.

- To quickly test the unit operation, enable test mode and move out of the sensor's view. Lights should go to low mode after 5 seconds.
- If lights still do not go into Low Mode, call 800.236.6800 for technical support.

### LIGHTS WILL NOT TURN OFF:

- Cut Off time may be set to "None."
- Ensure that the Cut Off is set to the desired time and that there is no movement within the sensor's view for that time period when the lights are in Low Mode.
- To quickly test the unit operation, enable test mode and move out of the sensor's view. Lights should go to low mode after 5 seconds and the OFF (if cut off is enabled) after 10 sec.
- If lights still do not turn OFF, call 800.236.6800 for technical support.

### OPERATION DURING POWER-UP

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During the sensor warm-up period, which can last up to a minute after initial power-up (or after a lengthy power outage), the load will remain ON until the selected time delay expires.