

0-10V CONTINUOUS DIMMING PIR OUTDOOR PHOTO/MOTION SENSOR IN IP66 ENCLOSURE WITH BLUETOOTH®

| FSP-3X1B SERIES



FSP-3x1B

w/ Straight Nipple

w/ Drop Nipple



Product Overview

The FSP-3x1B is a family of passive infrared (PIR) outdoor sensors that raise or lower the electric lighting level to appropriate light levels based on motion and/or daylight contribution. Typically, once the sensor stops detecting movement and the time delay elapses, lights will first fade to appropriate light level based on ambient light conditions, and eventually switch off. When motion is detected, the sensor ramps the light level to high mode unless the daylight contribution is sufficient.

The integral photocell can also switch the lights on and off for dusk to dawn control, so that lighting remains on overnight even without motion detection.

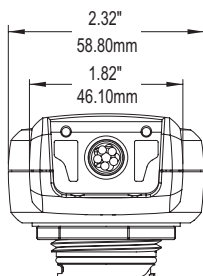
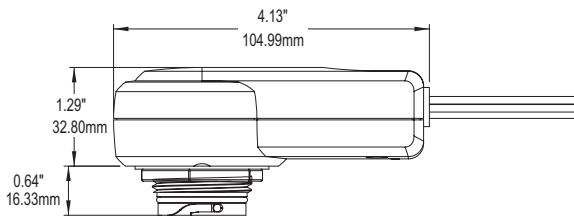
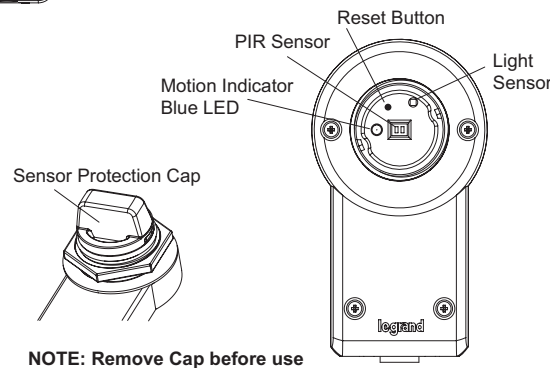
The sensors control 0-10VDC or non-dimming LED drivers or ballasts. The

low voltage FSP-301B may be used with dim-to-off drivers or ballasts.

Initial setup and subsequent sensor adjustments are made using the Sensor Configuration App, available on Google® or the Apple® App Store. This tool enables adjustment of sensor parameters including high/low mode, sensitivity, time delay, cut off and more.

The Sensor Configuration App can read current parameter settings, and stores up to six sensor parameter profiles to speed commissioning of multiple sensors.

The FSP-3x1B family is available in three configurations for mounting inside a fixture, to the outside of a fixture or enclosure via a 1/2" knockout, or to a pole.


FSP-3x1B dimensions


NOTE: Remove Cap before use

FSP-3x1B sensor module

Models

FSP-301B, 12-32VDC
Use with dim-to-off driver or ballast or with Wattstopper power pack

FSP-311B, 120-277VAC (single phase), 50/60Hz

FSP-321B, 100-347VAC (single phase) or 208/230/480VAC (phase-to-phase)

Specifications and Features

Load Ratings (FSP-311B, FSP-321B):

@ 120V 0-800W tungsten, ballast, LED driver; 1/6hp motor

@ 230-240V 0-300W ballast, LED driver; 1/6hp motor

@ 277V 0-1200W ballast, LED driver; 1/6hp motor
@ 347/480V 0-1200W ballast, LED driver (FSP-321B only)

Current consumption (FSP-301B): 15 mA max.

0-10V sinking current: 50mA

Three interchangeable lenses for mounting between 8' and 40'

Remote setup and adjustment via the iOS® or Android® Sensor Configuration App

Adjustable high and low modes (high: 0 to 10V, low: off, 0 to 9.8V)

Adjustable time delay (30 seconds, 1 to 30 minutes)

Adjustable cut off delay (none, 1 to 59 minutes, 1 to 5 hours)

Adjustable sensitivity/service mode (low, med, max; on-fix, off-fix)

Adjustable setpoints: hold off setpoint (none, 1 to 250 fc, auto); photocell on/off setpoint (1 to 250 fc)

Adjustable ramp and fade times (1 to 60 seconds)

Lead length: 36" (91.44cm), 30" (76.2cm) from nipple

Operating temperature: -40°F to +167°F (-40°C to +75°C)

Weight: FSP-301B, 4.9oz (140g); FSP-311B & FSP-321B, 6.7oz (190g)

UL and cUL listed (E101196)

IP66 rated

Five year warranty

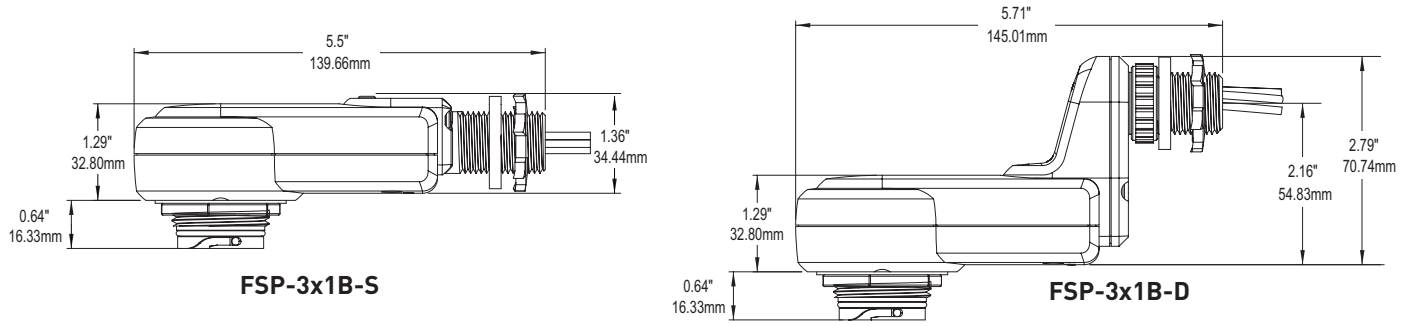
Materials

Polycarbonate, flame retardant, UV resistant, impact resistant, recyclable Meets materials restrictions of RoHS

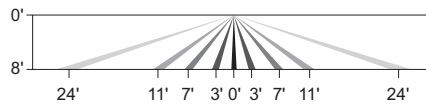
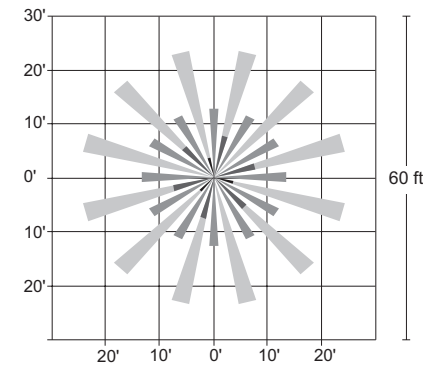
Factory Defaults

High mode:	10V
Low mode:	1V
Time delay:	5 minutes
Cut off:	1 hour
Setpoint:	Disabled
Sensitivity:	Max
Ramp up time:	Disabled
Fade down time:	Disabled
Photocell On/Off:	Disabled

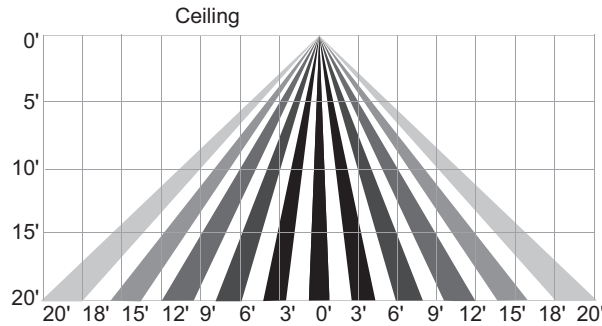
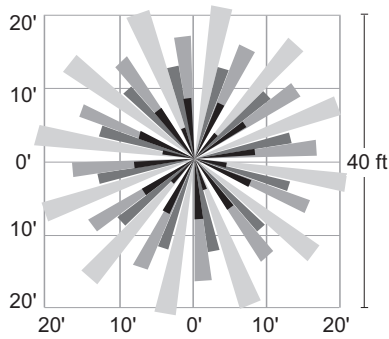
FSB-3x1B-x Dimensions, Side Views



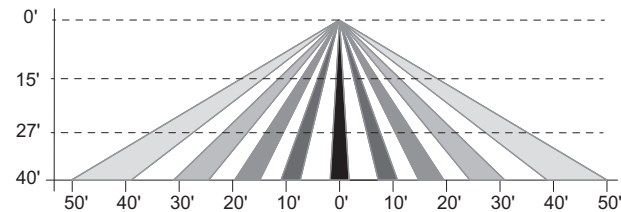
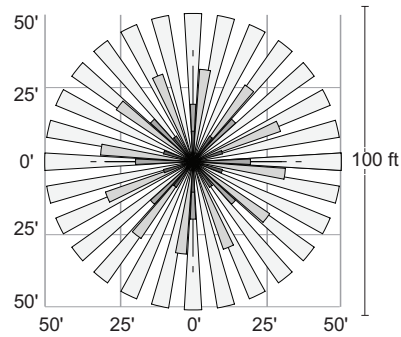
Coverage



FSP-L2 top and side coverage patterns

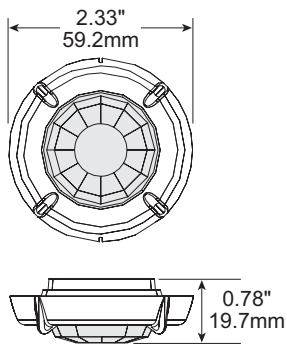


FSP-L3 top and side coverage patterns

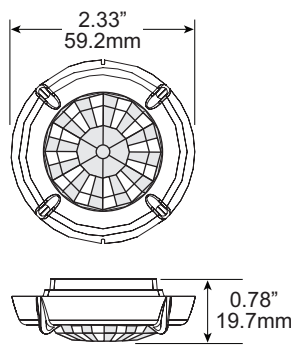


FSP-L7 top and side coverage patterns

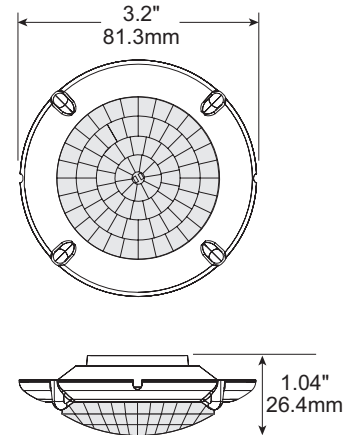
Dimensions of Lens Options



FSP-L2 dimensions



FSP-L3 dimensions

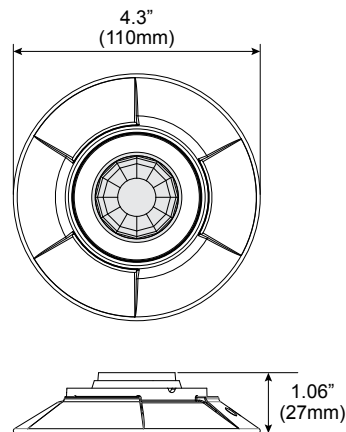


FSP-L7 dimensions

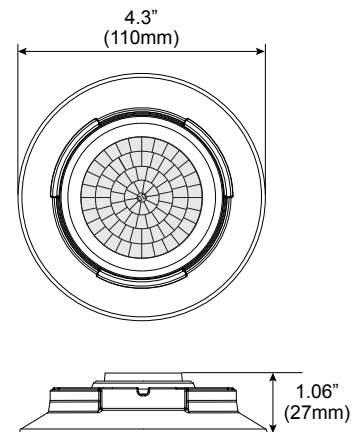
FSP-L2-S, FSP-L3-S, and FSP-L7-S Dimensions

The FSP-Lx-S models include a shroud, which blocks high-angle light coming from the fixture. to improve photocell performance. With the shroud attached, the dimensions for all three lenses are identical.

FSP-L2-S and FSP-L3-S



FSP-L7-S



Installing the FSP-3x1B Sensor in Light Fixture

1. Determine an appropriate mounting location inside the light fixture. Allow a minimum distance of 0.2" (5.1mm) from the end of the sensor to the wall of the fixture.
2. Drill a 1.30" (33mm) diameter hole through the sheet metal in the bottom of the fixture.
3. Place the rubber gasket on the threaded collar, and install the sensor face down, parallel to the mounting surface. Ensure the rubber gasket touches the inside surface of the fixture. Install the tightening nut securely against the fixture to a torque of 25-30 in-lbs to ensure IP rating is maintained.

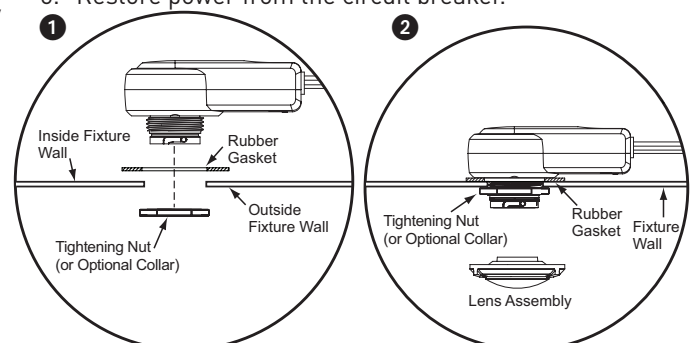
NOTE: An optional collar can be installed in place of the tightening nut on the FSP-3x1B. This collar is included with the FSP-3x1B-S and

Installing the FSP-3x1B in the light fixture

NOTE: The outside fixture wall thickness should be no greater than 0.125" (3.18mm) for optimal sensor mounting and security.

FSP3x1B-D,
as shown below.

4. Align the locking features between the sensor and lens module and push the lens module forward until the O-ring seals firmly. Turn the lens module clockwise to lock in place.
5. Connect load, supply and control wires.
6. Restore power from the circuit breaker.

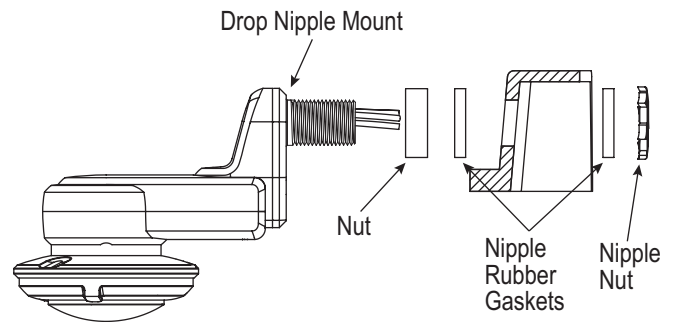
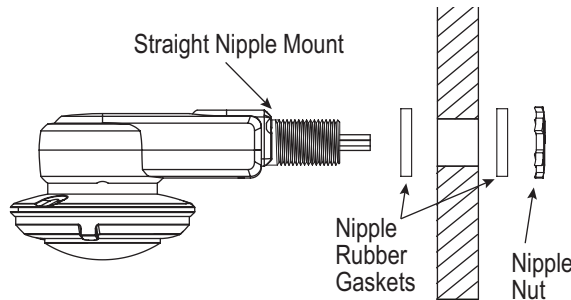


Installing the FSP-3x1B-S or FSP-3x1B-D To a Fixture or Pole

1. Determine an appropriate mounting location minimizing the electrical light contribution to the sensor's photocell.
2. Drill a 0.875" (22mm) diameter hole through the mounting surface, or mount to a 1/2" knockout.
3. Place the rubber gasket on the threaded collar, and install the sensor face down, parallel to the mounting surface. Ensure the rubber gasket touches the mounting surface. If needed, add the spacer between

the sensor body and the rubber gasket to ensure a secure fit. Install the nipple nut and torque to 25-30 in-lbs to maintain IP rating.

4. Align the locking features between the sensor and lens module and push the lens module forward until the O-ring seals firmly. Turn the lens module clockwise to lock in place.
5. Connect load, supply and control wires.
6. Restore power from the circuit breaker.



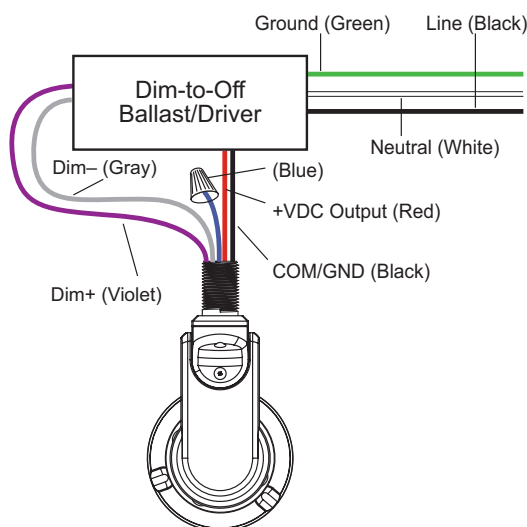
Installing the FSP-3x1B-S to the exterior of a fixture

NOTE: The outside fixture wall thickness should be no greater than 0.125" (3.18mm) for optimal sensor mounting and security.

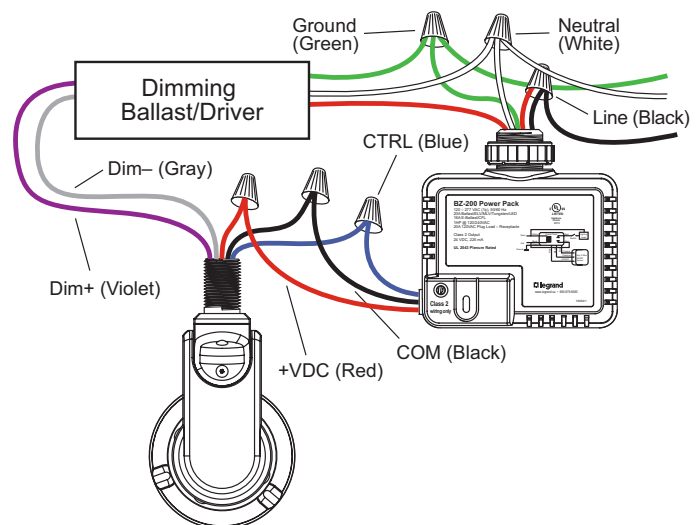
Installing the FSP-3x1B-D to a pole using the optional spacer

NOTE: The outside fixture wall thickness should be no greater than 0.125" (3.18mm) for optimal sensor mounting and security.

Wiring Diagrams for Low Voltage FSP-301B Sensors

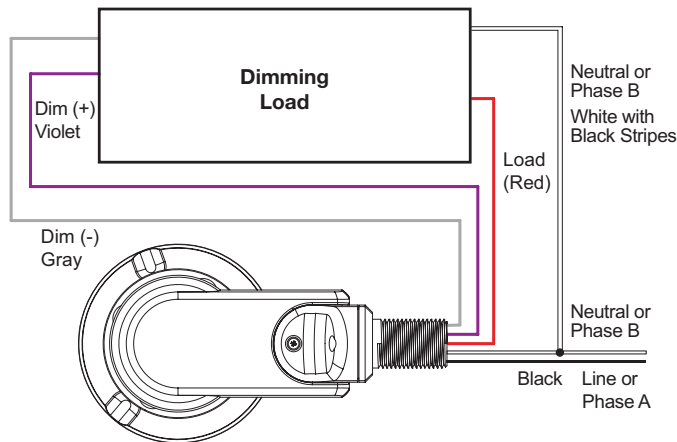


FSP-301B wiring with dim-to-off ballast or LED driver

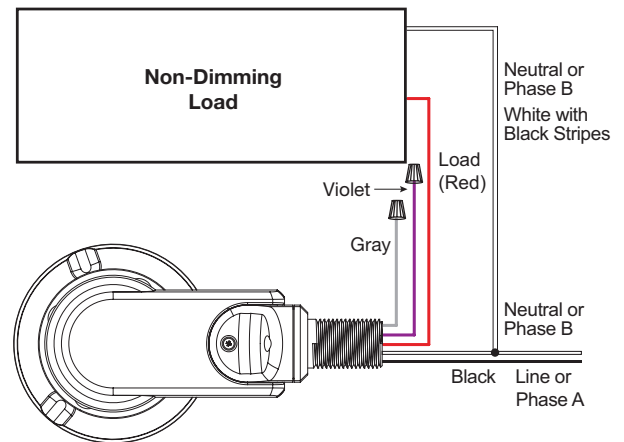


FSP-301B wiring with dimming ballast or LED driver and power pack for on/off control. If using a non-dimming ballast/driver, simply cap the gray and violet leads

Wiring Diagrams for Line Voltage FSP-311B and FSP-321B Sensors



FSP-3x1-B wiring with dimming ballast or LED driver

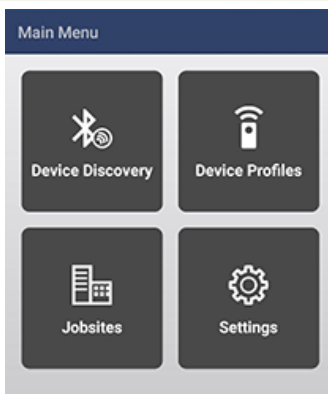


FSP-3x1-B wiring with non-dimming load

Sequence of Operation

1. **Dimming:** When motion is detected within the sensor's coverage area, the sensor sends a signal to ramp the load up to the selectable High Mode level unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level based on the signal from the sensor. If desired, a cut off time delay (factory preset at 1 hour) will trigger to eventually turn the lights OFF.
2. **Non dimming:** When motion is detected within the sensor's coverage area, the sensor sends a signal to turn the load ON unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go OFF based on the signal from the sensor.
3. **Dusk to dawn control:** When photocell on/off is enabled, and the ambient light falls below the photocell setpoint, the sensor ramps the load up to the selectable High Mode level. If no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level. If the cut off time delay is disabled, the load will remain on, at High or Low level, based on motion detection, until the ambient light increases above the photocell setpoint.
4. **Continuous Dimming:** The sensor continuously adjusts the light level of the load based on the changing ambient light level and whether the area is occupied or not. The sensor can set separate desired light levels for day and night.

Adjustable Control Parameters



The Sensor Configuration App is a convenient tool for setting up FSP-3x1B sensors. Adjustable settings can be changed as needed for specific applications.



Maximum recommended distance between mobile device running Sensor Configuration App and the sensor: 50 ft.

Bluetooth communication ranges can vary depending on the device, as well as mobile carrier. Wattstopper recommends devices with Bluetooth 5.0. iPhone 8 and Samsung Galaxy S8 and later devices are recommended for optimal performance.

Fixed Mode Parameters

1. High Mode: When the sensor detects motion the dimming control output ramps up to the selected HIGH light level (default is 10V).
2. 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).
3. Time Delay: The selected time period that must elapse after the last time the sensor detects motion for the electric lights to fade to LOW mode (default is 5 minutes).
4. Cut Off: The time period that must elapse after the lights fade to LOW mode and the sensor detects no motion for the electric lights to turn OFF (default is 1 hour).
5. Sensitivity: The response of the PIR detector to motion within the sensor's coverage area (default is High).
6. Setpoint: When enabled, the selectable ambient light level threshold that will hold the electric lights off or at LOW level when the sensor detects motion (default is Disabled).

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 switched off and on eight times, terminating in an off state. After this process, a new setpoint value is automatically calculated.

7. Hold Off: The selectable ambient light level threshold that will hold the lights off or at LOW level when the sensor detects motion (default is Disabled). A switch allows you to Enable or Disable this feature. If enabled, select Auto Format or Custom Value. If Custom is selected, the Range is 1 fc to 250 fc.

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 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. During this time, communication to the FSP-3x1 is disabled.

8. Ramp Up Time: Time period for light level to increase from LOW to HIGH (default is Disabled; lights switch instantly).
9. Fade Down Time: Time period for light level to decrease from HIGH to LOW (default is Disabled; lights switch instantly).
10. Photocell On/Off: When enabled, the sensor will force the load OFF after the light level has exceeded the selected photocell setpoint for at least a minute. It will also force the load ON when the light level goes below the setpoint, even if no motion is detected (default is Disabled).

Once ON (initially at High), the load will dim to Low following the Time Delay, and to OFF following the Cut Off time. To ensure dusk to dawn control, Cut Off must be disabled.

The photocell On/Off setpoint is automatically set to maintain a deadband of at least 10 fc above the Hold Off Setpoint to prevent cycling if the two features are used together.

Continuous Dimming Mode Parameters

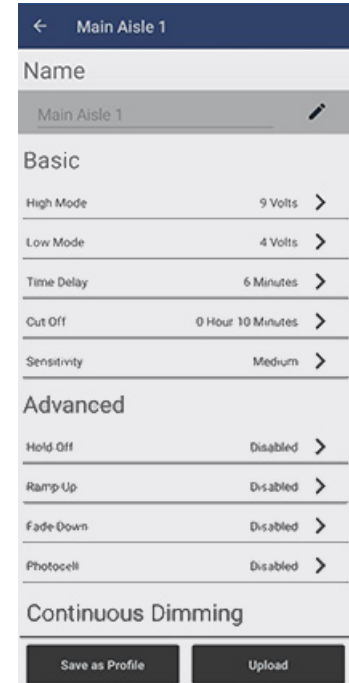
If Continuous Dimming is enabled, the fixed parameters are replaced by Continuous Dimming parameters. There are two sets of parameters—one for day and one for night.

Occupied Target: During the day/night, and while the area is occupied, the sensor will attempt to maintain the light level specified. The range is 0-250 fc (default is 30 fc).

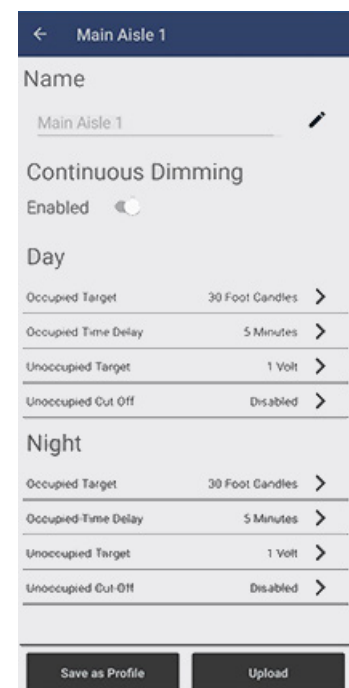
Occupied Time Delay: The time period that must elapse after the last time the sensor detects motions before the lights to fade to the specified 'Unoccupied Target' or 'Unoccupied Fixed Level' (default is 5 min).

Unoccupied Target: During the day/night, and while the area is unoccupied, the sensor will attempt to maintain the light level specified. The range is 0-250 fc (default is 30 fc). The Fixed 0-10V Level may be used instead.

Unoccupied Cut Off: The time period that must elapse after the last time the sensor detects motion before the lights to fade to Day/Night Unoccupied Target (default is 5 min).



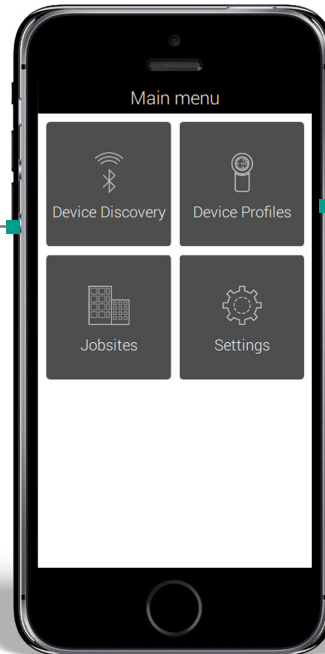
The screenshot shows the configuration page for 'Main Aisle 1'. It is divided into 'Basic' and 'Advanced' sections. Under 'Basic', parameters include High Mode (9 Volts), Low Mode (4 Volts), Time Delay (6 Minutes), Cut Off (0 Hour 10 Minutes), and Sensitivity (Medium). Under 'Advanced', parameters include Hold Off (Disabled), Ramp-Up (Disabled), Fade-Down (Disabled), and Photocell (Disabled). At the bottom, there are 'Save as Profile' and 'Upload' buttons.



The screenshot shows the configuration page for 'Main Aisle 1' with 'Continuous Dimming' enabled. It is divided into 'Day' and 'Night' sections. Under 'Day', parameters include Occupied Target (30 Foot Candles), Occupied Time Delay (5 Minutes), Unoccupied Target (1 Volt), and Unoccupied Cut Off (Disabled). Under 'Night', parameters include Occupied Target (30 Foot Candles), Occupied Time Delay (5 Minutes), Unoccupied Target (1 Volt), and Unoccupied Cut Off (Disabled). At the bottom, there are 'Save as Profile' and 'Upload' buttons.

SENSOR CONFIGURATION APP

- Enables fast, ladder-free setup, and maintenance
- Range up to 100ft, depending on mobile device
- Easy to use buttons and navigation
- “Jobsite Manager” for password protected sensors
- Allows precise configuration in tough weather and install conditions



- Protected two-way Bluetooth™ Low Energy (LE) communication for data upload, download, confirmation and storage
- Sensor “Device Profiles” for groups of parameters – fast and easy
- Configures Bluetooth LE enabled fixture sensors
- Supports English, Spanish, and French



Description

Configure, test, and adjust Wattstopper Bluetooth™ enabled sensors from your mobile device, leaving your ladder behind!

The Sensor Configuration app from Legrand, allows users (electrical contractors, installers, or facility managers) to easily manage Bluetooth Low Energy (LE) sensor installations despite difficult weather, direct sunlight, height restrictions, and other physical obstructions. No other specialized or additional hardware or tools are needed.

Legrand sensors are wirelessly configured via the app using secure Bluetooth LE, giving end-users comfort that their wireless fixtures are protected in a mobile environment.

Once the app is installed, our use of Bluetooth LE allows you to make adjustments to your Bluetooth enabled sensors offline, off the grid and at any time without ever using your wireless data.

Applications

Compatible for use with Bluetooth LE enabled Wattstopper sensors that are installed in parking facilities, gas stations, pedestrian pathways, warehouses, and other desired applications.

Installers and end users can use the Sensor Configuration App for initial setup and subsequent sensor adjustment to ensure conformity with design intent. By making the adjustment process ladder-free, changes to sensor settings are simplified.

Download

Download the app from the iTunes Store or the Android Market, install it on the desired device, and open the app to discover and read the available Wattstopper Bluetooth LE sensors. Next, configure the different parameters for each sensor, create jobsites and passwords, and manage sensor profiles for quick changes to multiple parameters at one time.

Bluetooth® LE Communication

Protected Bluetooth LE wireless technology, also known as “Bluetooth Smart,” is a power-conserving variant of Bluetooth personal area network technology and is used bi-directionally to communicate between Bluetooth enabled devices, like smartphones and Wattstopper Wireless Sensors.

Bluetooth LE facilitates protected, infrequent short-range wireless data communication between devices and is faster than traditional Bluetooth using less than half the power.

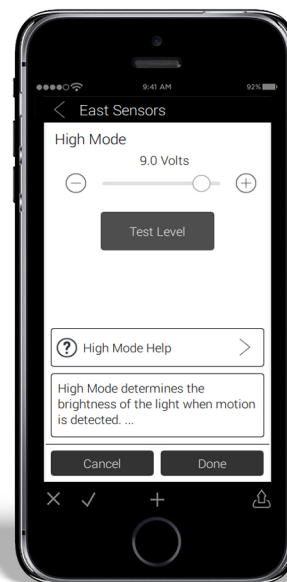
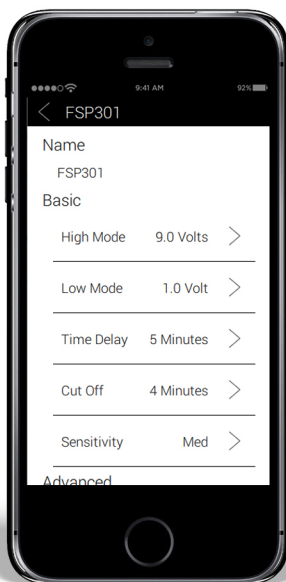
System Requirements

- Sensor Config App 1.0 or later
- Apple iOS6 or later; Recommended iOS10
- Android OS 4.4 (KitKat) or later; Recommended Android OS 7 (Nougat)
- FSP Firmware version 0.141 or later

PROJECT	LOCATION/TYPE

Supported Devices - FSP

- Update sensor firmware in the field (look for app updates for new firmware versions)
- Establishes high and low mode light levels for 0-10V control
- Sets time delay, cut off time, and sensitivity for motion detection
- Range: Up to 100 ft, depending on mobile device
- Enables light level settings for either hold off control or daylighting control
- Allows ramp up and fade down rate adjustments
- Password protect sensors
- Use Sensor Profiles for setting up parameters once and apply to different individual sensors needing the same options
- Supports English, Spanish, and French



Supported Devices - FDP

- Update sensor firmware in the field (look for app updates for new firmware versions)
- Establishes high and low mode light levels for 0-10V control
- Sets time delay, cut off time, and sensitivity for motion detection
- Range: Up to 100 ft, depending on mobile device
- Enables light level settings for either hold off control or daylighting control
- Allows ramp up and fade down rate adjustments
- Supports English, Spanish, and French

