NLS LIGHTING

Sensor Specification Whitepaper

Features:

- Line Voltage High/Low/Off PIR Fixture Integrated Outdoor Photo/Motion Sensor

  Contact NLS Lighting for Bluetooth Controlled Sensor Requests

- Provides On/Off switching
- High and low modes fully adjustable from 0 to 10V (1 – 100% dim settings)
- Time delay from 30 Seconds to 30 minutes
- Optional cut off delay
- Motion sensing feature to reduce energy consumption and increase overall security
- Optional photocontrol option to shutoff power during daylight
- Adjustable ramp up and fade down times
- Sensor Lens Color Options (White, Black, Brown, Grey)

  Contact NLS Lighting for Custom Lens Color Requests

- Config tool stores six sensor profiles for quick setup and adjustment of multiple sensors
- Approved for California Title 24 Installations
- Provides additional energy savings ($ saved over time)

Applications:

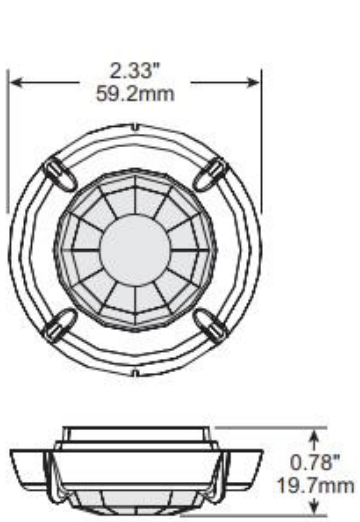
- Parking Lots / Parking Garages
- Gas Stations
- Pedestrian Pathways
- Car Dealerships
- Tennis Courts / Pickleball Courts
- Parks

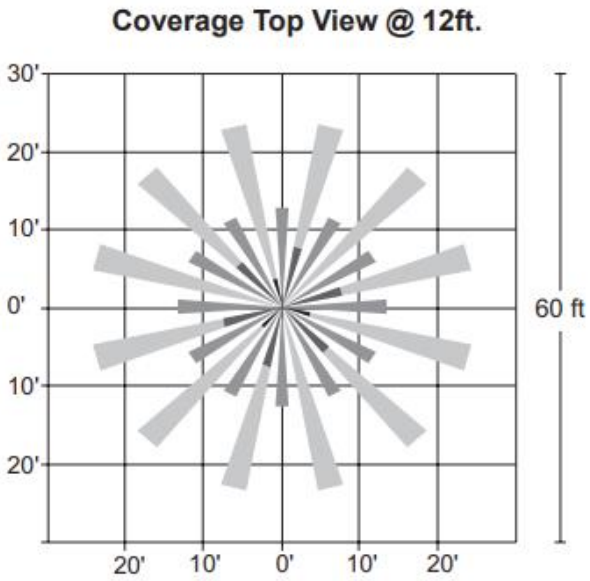
Sensor Options/Coverages:

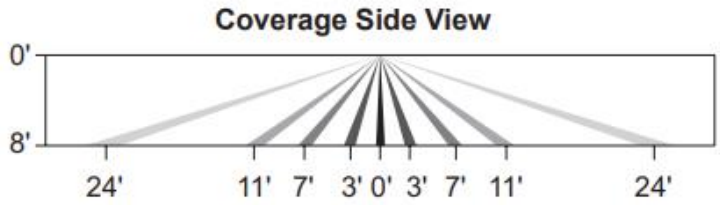
NLS Option: (**FSP-8**) 8'+ Below (using sensor lens FSP-L2)

Recommended Installation Locations (For Pole Heights up to 8 Feet):

Parking Garages / Low Height Poles / Pedestrian Pathways / Parks







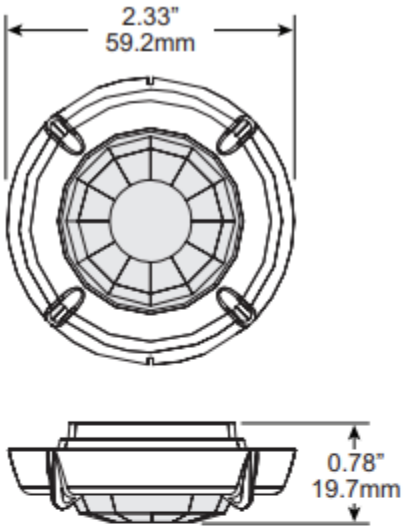
FSP-L2: 360° Coverage

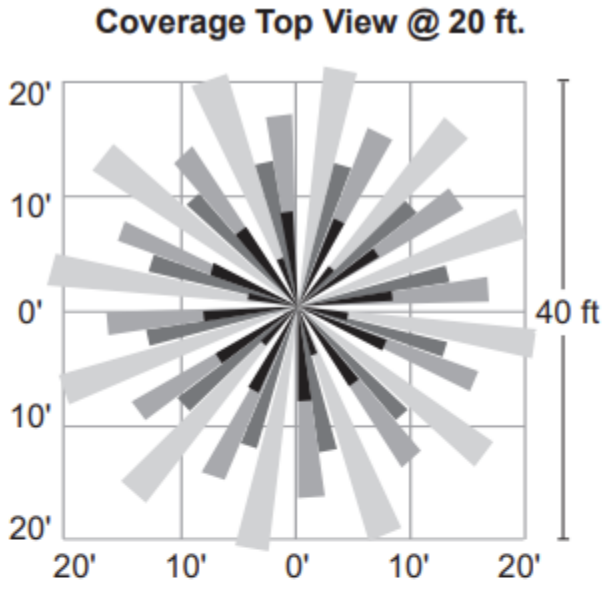
The FSP-L2 is designed for mounting at heights between 8' to 12'. It provides a 48' diameter coverage area when mounted at a height of 8', or a 72' diameter coverage area at 12'.

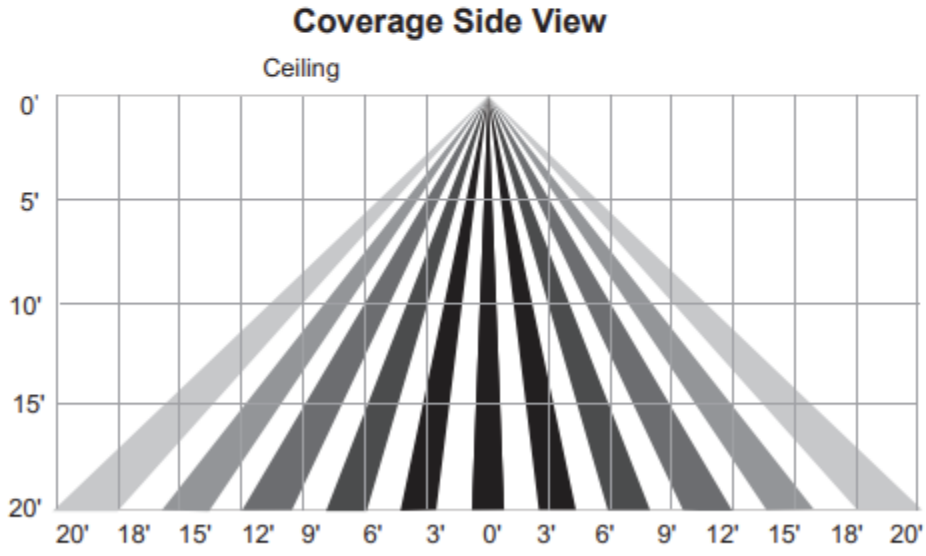
(**FSP-20**) 9'-20’ (using sensor lens FSP-L3)

Recommended Installation Locations (For Pole Heights up to 20 Feet):

Parking Lots / Gas Stations / Pedestrian Pathways / Car Dealerships / Tennis Courts / Pickleball Courts / Parks







FSP-L3: 360° Coverage

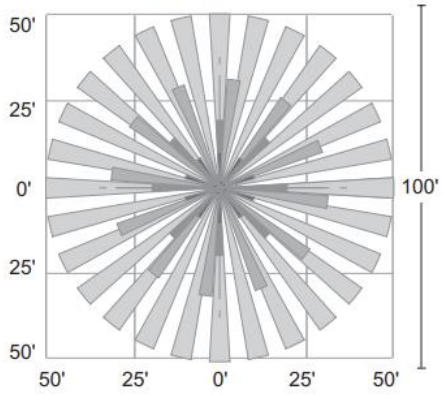
The FSP-L3 has a high density lens that covers a 40' diameter area at a height of 20'.

(**FSP-40**) 21'-40' (using sensor lens FSP-L4)

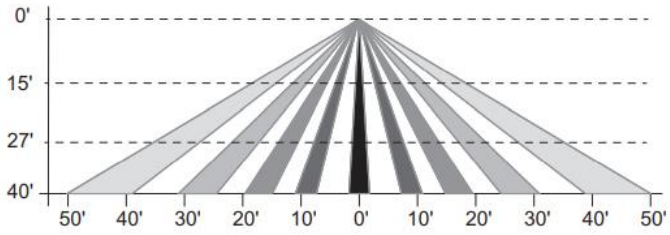
Recommended Installation Locations (For Pole Heights up to 40 Feet):

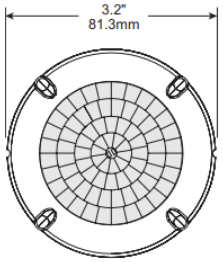
Parking Lots / Gas Stations / Pedestrian Pathways / Car Dealerships / Tennis Courts / Pickleball Courts / Parks

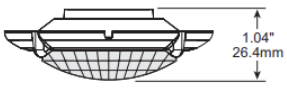
Coverage Top View @40ft



Coverage Side View







FSP-L7: 360° Coverage

The FSP-L7 has a lens that covers a 100' diameter area at a height of 40'.

Configuration Instructions:

This process sets the necessary parameters for proper sensor operation.

Using the FSIR-100 wireless config remote that comes with the fixture, you will be able to set parameter values on your sensor, as well as check the current status of the senor.

Follow the menus/prompts on the FSIR-100 remote to properly guide you through each configuration.

Configurations that can be set through your FSIR-100 remote include:

1) High/Low Mode
2) Light Sensitivity
3) Time Delay
4) Cut off
5) Ramp Up/ Fade Down
6) Photocell On/Off

For a screen-by-screen explanation of the FSIR-100 remote options, please reference pages 5-7.

For a troubleshooting guide, please reference pages 8-9.

FSP-2X1 SCREENS

Home Menu

Choose FSP-2X1 — Press Select

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

New Settings

Press Select

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

Press the Left/Right Arrow to Increase or Decrease Volts

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

To program the FSP-2X1 with the selected parameters go to SEND and press the Select button. The controlled load should cycle once the sensor is updated.

Low Mode

Press the Left/Right Arrow to Increase or Decrease Volts

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

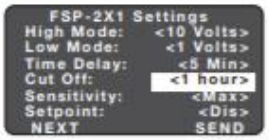
Press the Left/Right Arrow to Raise or Lower Time Delay

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).

NOTE: For the FSIR-100-RU, the default is 2 min.

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

Cut Off



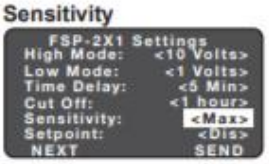
Press the Left/Right Arrow to Increase or Decrease Cut Off

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: Disable (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



Press the Left/Right Arrow to Increase or Decrease 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.

Hold Off Setpoint

Press the Left/Right Arrow to Increase or Decrease Setpoint

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

Range: Auto, Disable, 1 fc to 250 fc

Increments: 1 fc (press and hold should cause to move faster thru the increments)

Sequence: Disable, 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-2X1 is disabled.

Next

Press the Down Arrow to Choose NEXT — Press Select

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

Ramp Up

Press the Left/Right Arrow to Increase or Decrease Sec

Time period for light level to increase from LOW to HIGH (default is Disable; light/load switches instantly).

Range: Disable, 1 sec to 60 sec
Increments: 1 sec

Fade Down

Press the Left/Right Arrow to Increase or Decrease Sec

Time period for light level to decrease from HIGH to LOW (default is Disable; light/load switches instantly).

Range: Disable, 1 sec to 60 sec
Increments: 1 sec

Photocell On/Off

When the light level exceeds this setting, the lights will turn off even when the space is occupied. Once the light level exceeds this setting, the sensor will wait and monitor for a short period of time in order to confirm the light level increase is not temporary before forcing the lights to go off. When light level goes below the settings, the light will turn on even without motion detection. This feature is disabled by default. If using this setting in combination with the Hold Off setpoint, there must be at least 10fc of dead band between the two settings. The Photocell setpoint is automatically set to maintain at least 10fc of dead band above the Hold Off setpoint to help avoid load cycling.

Prior

Press the Down Arrow to Choose PRIOR

Press Select

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

Send

Press the Down Arrow to Choose SEND

Press Select

To program the FSP-2X1 with the selected parameters go to SEND and press the Select button. The controlled load should cycle once the sensor is updated.

Save

Press the Up Arrow to Choose SAVE

Press Select

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

Press the Up/Down Arrow to Choose Profile

Press Select

Current Settings

Choose Current Settings

Press Select

Point and Press Select

Current Settings allows you to recall the parameters for a specific sensor. These are read only parameters. Highlight and press Select to view the Current Settings. Then, point the FSIR-100 at the sensor and press Select.

View Current Settings

Press Select to View More Settings

To view the rest of the settings, press the Select button.

Press Select to View Previous Settings

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

If you would like to save the sensor's current settings as a profile, go to SAVE and press the Select button.

Light Level

Displays the current light level at the FSP-2X1. The light level reading can be used as a reference for setpoint adjustments.

Done

To go to the FSP-2X1 Home screen go to DONE and press the Select button.

Test Mode

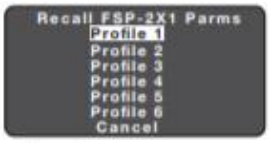
Test Mode shortens timeouts for High/Low and Cut Off, to allow quick verification of settings. Test Mode disables automatically after 5 minutes.

Enable/Disable

Test Mode has been enabled.

Recall Profiles

Recall Profiles allows the user to select saved parameter profiles. This feature is used when programming multiple FSP-2X1s with the same parameters.



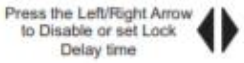
After selecting the profile, you return to the Settings screen, where you can edit the parameter values, if needed, before sending the parameters to the sensor

Lock Settings

IR communication locks to prevent unauthorized changes of FSP-2X1 parameters.

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

FSP-2X1 default settings communicate with the FSIR-100; however, this security feature limits communication only for authorized installers who have access to main power supply to the FSP-2X1 sensor. Press Select to set Lock Delay or press PRIOR to go back.



Factory default Lock Delay setting is disabled and FSP-2X1 parameter can change with any FSIR-100 at anytime. To enable Lock Delay with time, select lock delay time and press SEND to set delay time in the FSP-2X1. Its parameter changes with the FSIR-100 will be locked after the specified timer expires from the last message. At the end of the specified time the FSP-2X1 will be locked unless there is a power cycle. Any locked sensor needs power cycling to initiate any configuration through the FSIR-100. To permanently disable Lock Delay after power cycling, select Disable and press SEND.

Range: 10 min - 240 min
Increments: 1 min

Highlight SEND and press Select to enable lock settings.

This screen will appear if the FSP-2X1 is locked. If it is locked, cycle the power.

Troubleshooting Guide:

Lights will not go to High Mode:

1) Check all wire connections and verify the load wires are tightly secured.
2) Make sure that the sensor is not obstructed.
3) 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.

Lights will not go into Low Mode:

1) The time delay can be set from a minimum of 30 seconds to a maximum of 30 minutes. 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.
2) To quickly test the unit operation, enable test mode and move out of the sensor's view. Lights should fade to low mode after 5 seconds.

Lights will not turn OFF:

1) Cut Off time may be set to "None."
2) 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.
3) To quickly test the unit operation, enable test mode and move out of the sensor's view. Lights should fade to low mode after 5 seconds, and the OFF (if cut off is enabled) after 10 sec.

False Triggering may occur if the sensor is exposed to high ambient temperature conditions and the unit is set to maximum sensitivity for PIR detection.

1) If this occurs, reduce the PIR sensitivity setting from maximum to a medium point and re-check unit operation.
2) If experiencing false triggering during fade down/Off, try increasing the fade time.

Lights do not turn ON:

1) Check for blinking red LED. If the LED blinks with long pulses, as opposed to short pulses, the sensor has reached its Hold Off setpoint or Photocell Light Level setpoint.

Lights suddenly turn off and will not come back on:

Check for blinking red LED. If the LED blinks with long pulses, as opposed to short pulses, the sensor has reached its Hold Off setpoint or Photocell Light Level setpoint.

There is no IR communication:

Perform a power cycle on the sensor.

**If sensor is still not functioning properly after going through the full troubleshooting guide, please reach out to your local NLS Lighting Sales Rep or NLS Lighting Customer Support.