Lunera Smart Sensor Switch

Smart Bluetooth Wall Switch / PIR Occupancy Sensor	Battery Powered

Description

The **LUNERA SMART BLUETOOTH WALL PIR SENSOR SWITCH** is a battery-powered combination passive infrared (PIR) sensor and Auto/On switch that interacts with Lunera Smart Lamps. The sensor switch uses Bluetooth Low Energy (2.4GHz BLE 4.1) technology to wirelessly communicate with connected Lunera Smart Lamps, triggering, on/off states on the lighting components. The smart electronics in the Smart Lamps, including radios, ambient light sensors and microprocessors, are unaffected by this accessory. Its ultra-low power consumption allows the sensor switch to operate for up to two years on a two 1.5-volt AA batteries.

The PIR sensor in the wall-mounted sensor switch uses the latest detection and induction technologies including: Energy Accumulation Management, Dynamic Random Time Division Technology, Advanced Digital Intrusion Sensor MCU and multi-zone comprehensive induction with fuzzy algorithms to deliver stable, reliable detection with fewer false detections.

Highly sensitive and accurate, the sensor uses a combination of real Anti-Visible Light technology to eliminate false detections under 6500LUX and a sealed induction cavity design to reduce thermal current interference. The sensor incorporates a patented Fresnel lens that increases energy efficiency and has a cover tamper alarm switch. The sensor outputs a tamper alarm, low-battery level alarm, Occupancy Detect beacon and Occupancy Lost beacon.

The device has a mechanical AUTO/ON switch. When the switch is set to “AUTO”, occupancy detect/occupancy lost signals will be transmitted activate and deactivate the Smart Lamp LED components. When the switch is set to “ON”, the device will transmit an “always on“ occupancy detect signal to activate the Smart Lamp LED components, which will remain on until the switch is set back to AUTO and the PIR sensor ends an occupancy lost signal. In either case, light levels are determined by programmed rules applied to connected Smart Lamps.

A combination of up to ten Lunera Smart Sensor Switches, Rocker Switches and Wall/Ceiling PIR sensors can be added to any room or zone. The combination of sensors and desired coverage defines the maximum zone size to use when planning the Lunera Smart Lamp installation. A device must be within 32 feet (~10 meters) of at least one Lunera Smart Lamp in its zone to communicate to ensure communication. Signals are then passed from lamp-to-lamp within large zones.

Key Features

- Wall-mounted Bluetooth (2.4GHz BLE 4.1) PIR sensor switch for Lunera Smart Lamps
- Powered by two 1.5-volt batteries for up to two years
- Communicates Occupancy Detect signal either from the PIR sensor or the mechanical switch and Occupancy Lost signal from the PIR sensor to Smart Lamps within range in an associated zone.
- A combination of up to 10 Smart Sensors and Switches can be installed per zone
- Five-year warranty

Ordering Information

Example: SA-BLE-PIRSWITCHW-W-AA

Series	Connectivity	Style	Configuration	Power Supply
SA Lunera Smart Accessory	**BLE** Bluetooth 4.1	**PIRSWITCHW** PIR Sensor/Switch, White	**W** Wall-mounted	**AA** Two 1.5V AA Batteries

PROJECT	CONTACT	MODEL NO.
REFERENCE NO.	QUANTITY	DATE

Product Specifications

Electrical System

Communication Protocol	2.4GHz BLE 4.1
BLE Operating Voltage	3VDC
Power Source	Two LR6 1.5V alkaline AA batteries
Output Power	-20 dBm to 4 dBm
Receiving Sensitivity	-93 dBM
Operating Current	Static Current: ≤ 2μA Transmit Current: ≤10mA
Max Communication Distance	32ft (~10m) at 0 dBm in open area to nearest in-zone Smart Lamp

PIR Sensor - Operation

Detection Distance	32ft (~10m) @ 77ºF (25ºC)
Lens Pattern (Infrared Area)*	11+8+6+5 typical
Max Sensor Coverage Area	32ft x 32ft (~10m x ~10m) / 90º
Anti-visible Indoor Light	>6500LUX
Output Alarm Reports sent to nearest in-zone Smart Lamp	Tamper Alarm, Low Battery Level Status Alarm
Beacon Signals sent to nearest in-zone Smart Lamp	Occupancy Detect and Occupancy Lost (sent after one minute without motion detection)

Physical

Alarm Indicator	LED status light
Lens	Fresnel, Frosted Acrylic
Switching Type	Vertical slide switch
Mechanical Life - Switch	100,000 toggles
Material	Plastic and PurePC
Finish	White
Weight	0.25lbs 0.75lbs, including batteries

Environment

Ambient Operating Temp	-40°F to 104°F (-40°C to 40°C)
Ambient Operating Humidity	Dry and Damp Certified (≤95% RH, no condensation)

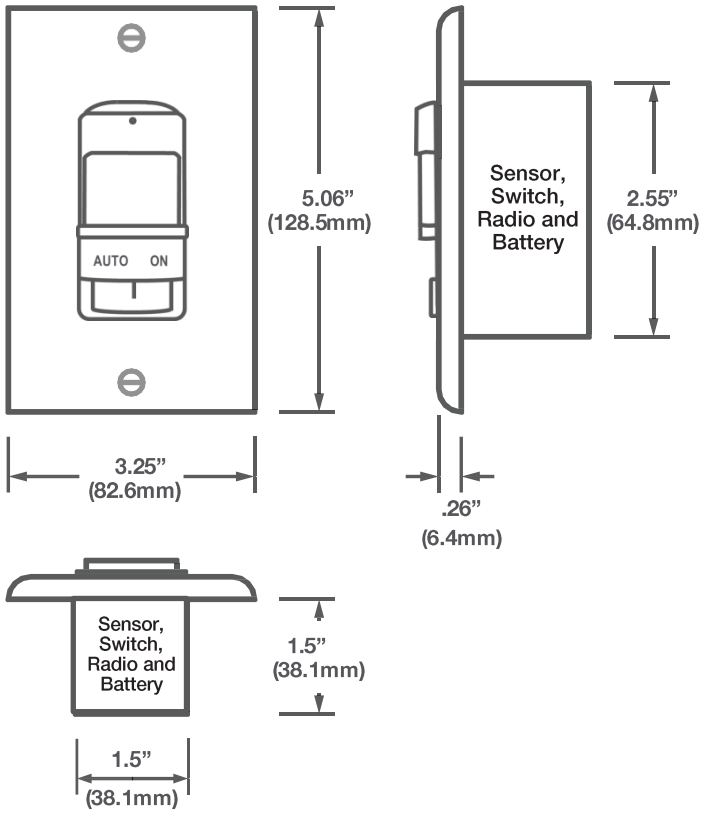
Certifications and Qualifications

RoHS Compliant	Contains no lead or mercury
FCC*	Compliant with Parts 15A/B

Warranty

Warranty	Five years

Dimensions



* Operation is subject to the following conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operations.

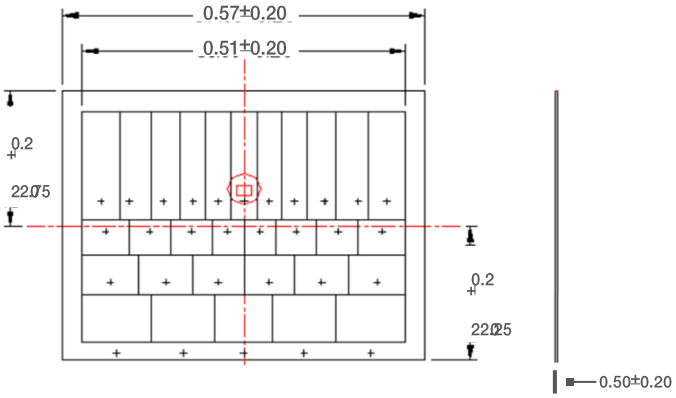
The device has been evaluated to meet general RF exposure requirements.

The device can be used in portable exposure conditions without restriction.

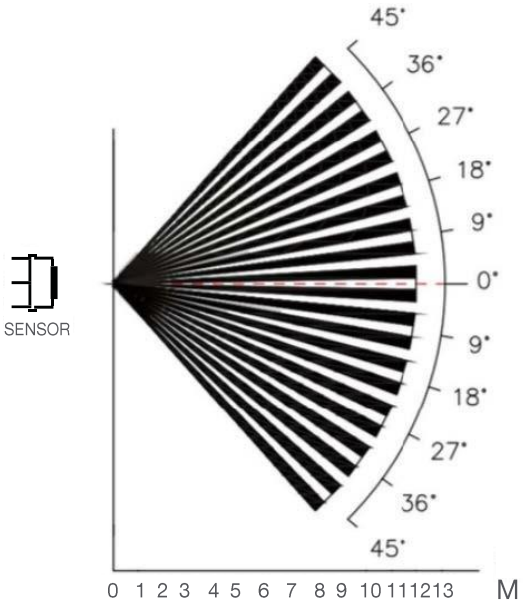
Application Notes – PIR Sensor Function

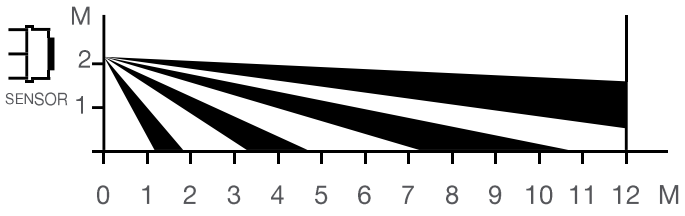
This device is factory-configured as an accessory for Lunera Smart Lamps and is not compatible with or warranted for other applications.

*Lens Pattern (Infrared Area)



Detection Distance and Range





Application Notes – Switch Function

This device is factory-configured as a controller for Lunera Smart Lamps and is not compatible with or warranted for other applications.

CAUTION

Before installing the 1-Gang device box, ensure that placement in the wall is free of existing wiring, plumbing, HVAC ducts or other obstructions.

Installation – Getting Started

In the Box

- One Bluetooth-enabled PIR Wall Sensor Combo Switch
- One Faceplate
- Two Faceplate Screws
- Two Anchors
- Two screw anchors
- Two 1.5V AA batteries

Product SKU Marking

Ensure that the accessory marking on the device matches the SKU listed below:

SA-BLE-PIRSWITCHW-W-AA

Installation Instructions

Prepare the Accessory for Installation

1. Unpack the accessory and verify that all parts are included.
2. Detach the faceplate, being careful not to misplace the faceplate screws.
3. Remove the device back cover and install fresh 1.5V AA batteries, noting the battery polarity orientation embossed on the device.

Locate Device within the Zone

Up to ten accessory devices (any combination of wall and ceiling PIR sensors and switches) can be installed per zone. Signals are passed from lamp-to-lamp in large zones.

4. Determine the location for placement of the device, which may be in an existing switch box that has the wiring capped off.

   When selecting a location, avoid the following locations:

   - Heat sources
   - Direct sunlight
   - High-voltage wiring
   - Facing metal walls
   - Mounting to unstable surfaces

5. Ensure that the wall cavity behind the desired location is free of electrical wiring, plumbing, HVAC ducts or other obstructions, and that the wall cavity is of sufficient depth, before opening the wall.
6. Cut an opening in the wall and secure a standard 1-Gang device box. Typical installation height is 42” to the center of the box.
7. Ensure that the distance to nearest Smart Lamp is less than 32ft (~10m).

Install the Accessory

8. Secure the accessory in the junction box.

   Affix the faceplate over the box until it is snug against the wall. Do not over-tighten the faceplate (there should be no deflection in the surface when installed correctly).

Optional Installation Step

Disable Existing Switches

To avoid unintended shutdown of the Smart Lamp radios, sensors, and processor, the existing fixture power switch may be disabled, covered or labeled with an instruction “Do Not Turn Switch Off”.

Disable Existing Sensors

If existing sensors are installed in the zone, they may turn off power to the fixture, disabling the Lunera Smart Lamp radios, sensors and processor.

Change the existing device setting to "Override", disconnect the existing sensor or remove the existing sensor to prevent this from occurring.

Registering (Activating) the Accessory

Lunera Cloud Registration

The device is registered on the facility map in the Lunera Control Center by assigning the device's MAC Address to its zone.

The MAC Address is located on the back side of the faceplate.

Follow these steps to register the Lunera Smart Switch to the Lunera Cloud.

1. Locate and note the MAC Address (or use a QR scanner to read the MAC Address)
2. Log into the Lunera Control Center and navigate to the Facility Management panel.
3. Within the Facility Management panel, select the Peripherals tab.
4. Enter the MAC Address in the zone where it has been installed.