

PHILIPS

Sensors

EasySense

SNH212 MC



EasySense SNH212 MC is the ideal solution for per-fixture control of luminaires for high bay applications. It combines occupancy sensing, daylight harvesting, and task tuning in a single package for easy assembly in OEM luminaires or installation in the field. EasySense sensors operate with the established Philips Xitanium SR LED driver standard to make a simple two-wire connection between the sensor and the driver, thus eliminating the need for multiple components and auxiliary devices. The result is a cost-effective and easy-to-design-in solution ideal for energy savings. An intuitive app makes configuration and commissioning during and after installation fast and easy using the Philips MasterConnect app.

EasySense SNH212 MC is D4i certified. In addition to Advance Xitanium SR drivers, SNS21H MC can also be used with D4i certified LED drivers from other manufacturers. It is also Zigbee certified. This enables interoperability within larger systems that include Zigbee certified components and gateways.

EasySense SNH212 MC is commissioned and configured via the Bluetooth available on modern smartphones. The sensors do not require gateways, network connections, or dashboards. The sensors in the group communicate to each other via Zigbee for simple area-based control. It is an uncomplicated means to achieve energy savings in industrial high bay applications while maintaining aesthetics in the space.



EasySense SNH212 MC

Commercial Product Name	Order Code
EasySense SNH212 MC	SNH212 MC

Features

- Out-of-the-box light regulation with preset sensor parameters
- Groups/networks up to 120 lights
- Occupancy sensing, daylight harvesting and task tuning in one device
- Compact size, 2-wire connection
- Operates with Advance Xitanium SR drivers or D4i certified drivers and qualified wireless switches
- Tunable White with Advance FlexTune SR driver
- Simple grouping of luminaires to a wireless switch with Philips MasterConnect App.
- Selection of luminaires using a list based on BLE or pointing with standard flashlight.
- Configuration of sensor parameters – at group, zone or single light level
- Simple room level energy reporting with CSV file saved on the phone

Benefits

- Combines functionality to reduce need for multiple components
- Fits into existing and new-design luminaires
- Quick task tuning in the field to optimize light levels, color temperature and power
- Enables multiple modes such as manual-on/auto-off or manual on/off
- Cost-effective solution for energy savings
- 5-year limited system warranty with Advance Xitanium LED drivers
- Configuration and commissioning from the floor
- Compatibility with qualified gateways

Applications

- Warehouses
- Assembly areas
- Cold storage

EasySense SNH212 MC

Specifications

Ordering Information	
Order Code	SNH212 MC
Full Product Name	EasySense SNH212 MC
12NC	929003416413
Carton Quantity	10 pcs
Physical Information	
Overall Dimensions	Refer to drawing
Housing (Luminaire Hole)	M20 threaded nipple for ½" knockout
Net Weight per Piece	185gm / 6.5oz
Color	Light gray housing (RAL 7035), translucent cover
Wiring	(2) 18AWG wires, unpolarized; 60cm length; 8mm strip length
Electrical Information	
Input Voltage	Powered by D4i/SR driver low voltage interface
Nominal Current Consumption	9.5mA at 15V (average)
Nominal Power Consumption	140mW (average)
Standby Power	<1W at fixture level including driver standby power
Activation	Sensors regulate light output out of the box with default settings
Occupancy Sensing	
Type	Passive infrared (PIR)
Occupancy based control	Enable/Disable. Enabled by default.
Occupancy Mode	Auto-on/auto-off; Manual-on/auto-off ; Manual-on / manual-off
Group/Zone Occupancy Sharing	Enabled/disabled
Group/Zone Lighting Behavior	Background level/Eco-on level
Eco-On Level	1% - 100%
Hold Time	2 - 100 minutes
Viewing Angle	±27°
Background Light Level	1% - 100%
Prolong Time	2 minutes - 100 minutes, or infinite
Grace Fading	1 second - 25 seconds
Response Time/Fading to Switch On/Off	1 second
Daylight Sensing	
Daylight based control	Enabled/disabled. Default Enabled with target light level of “~150lux X Eco-ON%”
Calibration	Selectable. Light Level calibrated to “Max light output from fixture X Eco-ON%”
Viewing Angle	+/- 10°
Task Tuning	
Full Light Setting	0% - 100%
Tunable White	With FlexTune SR driver, default factory setting: 4000K

Continued on next page.

1. View limited warranty at <https://www.signify.com/en-us/support/warranties>

EasySense SNH212 MC

Specifications (continued)

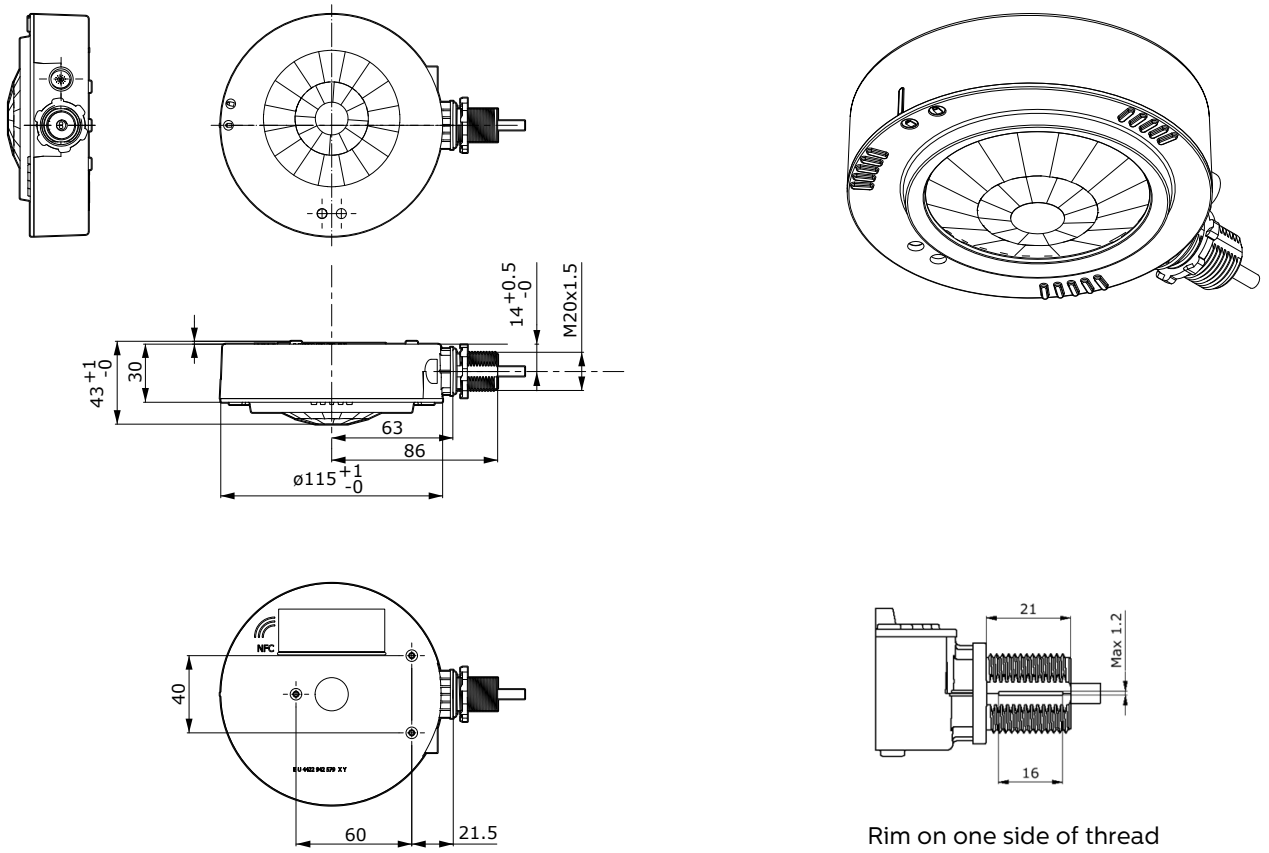
Environment & Approbation	
Operating Ambient Temperature Range	-30°C to +65°C
Ingress Rating	Tested for compliance to IP65 by Dekra
Operating Humidity	20% to 85% relative humidity, non-condensing
Storage Temperature	-30°C to +85°C
Max Case Temperature (Tcase)	+65°C
Agency Approbations	UL, cUL, FCC ID: 2AGBWSHM2, IC : 20812-SHM2
Warranty	5 years
Digital Interface	Xitanium SR/D4i. To be used only with LED drivers with class 2 DA outputs limited to less than 15 Watts
Other	
Wireless Protocol	Zigbee, IEEE 802.15.4, Bluetooth Low Energy
Encryption	AES-128
Energy Reporting	Group/Room level using Philips MasterConnect App, report saved as CSV file on the smartphone
No. Drivers per Sensor	4 max. (limited to 1 driver per sensor to support Energy Reporting)
Max Distance Switch-to-First Sensor	50ft/15m line-of-site
Max Distance Sensor-to-Sensor	50ft/15m line-of-sight
No. Sensors per Group	120 max.
No. of Zones per Group	15 max.
No. Switches per Group/Sensor	15 max per group, 5 max per zone
Mounting Height	16.4 to 52.4ft / 5m to 16m
Field Configuration	MasterConnect app via Bluetooth

Driver Compatibility

EasySense SNH212 MC is compatible with Xitanium SR drivers from Signify and D4i certified LED drivers from other manufacturers. To find the SR driver that fits your application needs and for product specifications, please visit www.signify.com/xitaniumsr.

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Sensor Dimensions (mm)

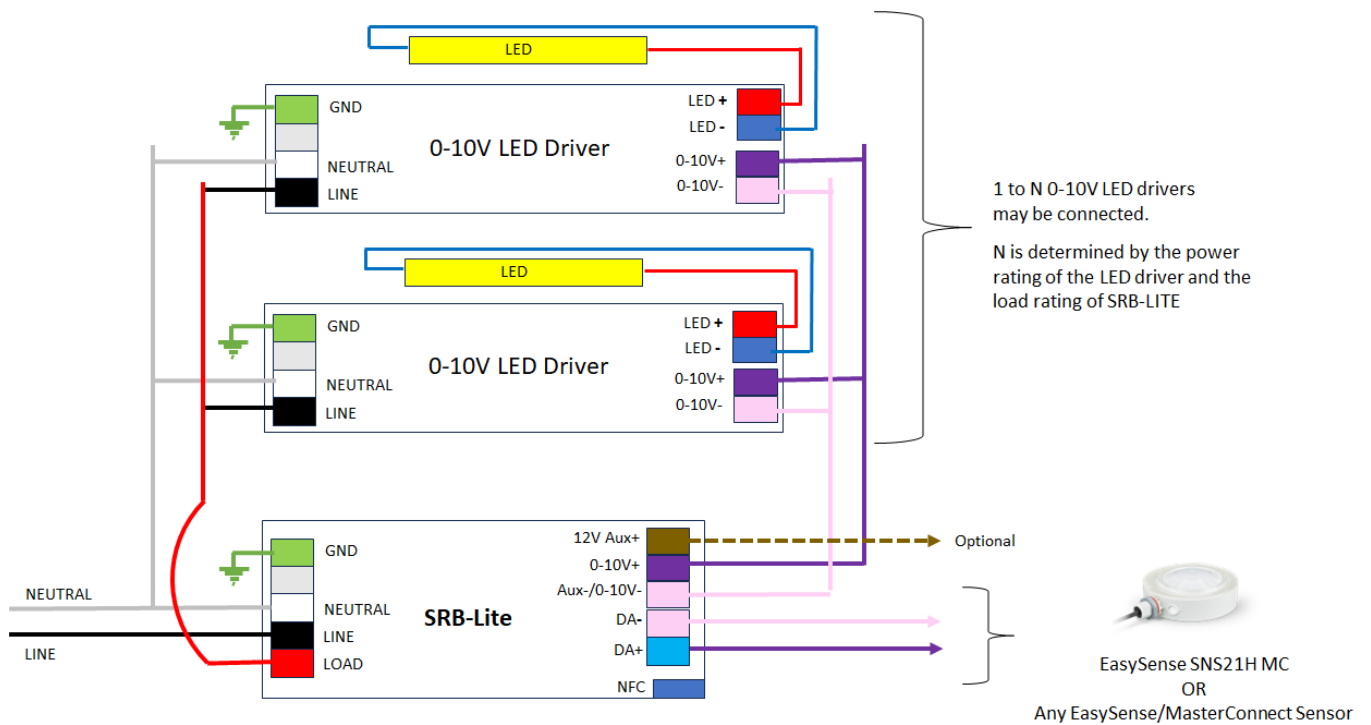
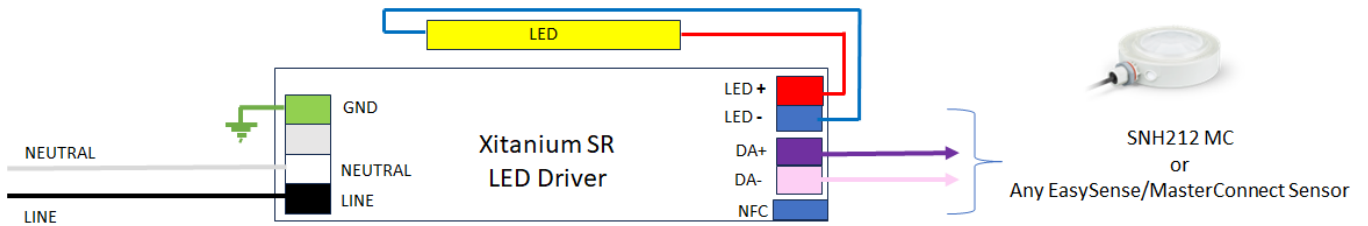


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Wiring Diagram



Note: This diagram depicts the sensor wires connected to a Titanium SR Driver using the driver's connector. To connect to a Titanium SR driver with leads, use suitable 18AWR solid wire wirenuts.



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Occupancy Sensing

Based on 16m (52ft) mounting height

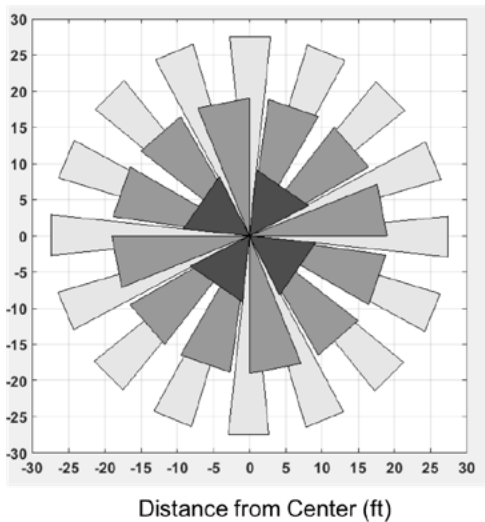
Occupancy sensing detection patterns

The plots below show the top and side view of the occupancy coverage based on NEMA test, an industry standard. In the side view, it is visible that coverage ratio of mounting height: diameter at ground level is at maximum 1:1. For example if the mounting height is 12m, the maximum diameter coverage is 12m.

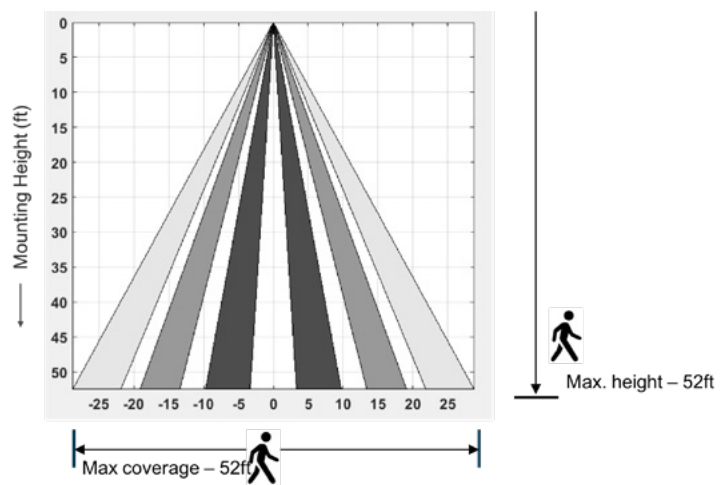
Disclaimer:

1. In these plots, the white areas are blind spots and the detection is based on subject's motion. An idle subject may not continue to trigger occupancy detection once the hold time expires.
2. As PIR based sensing works on temperature difference between the subject and the ground level, the occupancy detection could vary due to clothing and size of subject.

Top coverage



Side coverage



Warning:

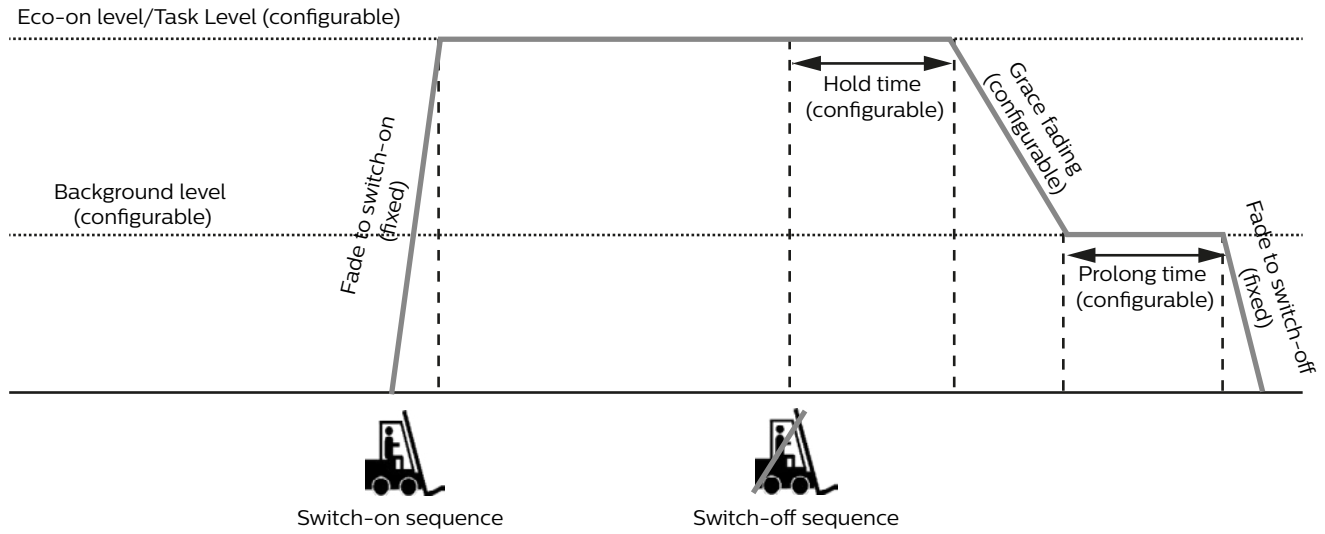
Place heat radiating devices outside of the monitoring cone.
Avoid drafts (e.g. from ventilators or heating systems).

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Occupancy Sensing (continued)

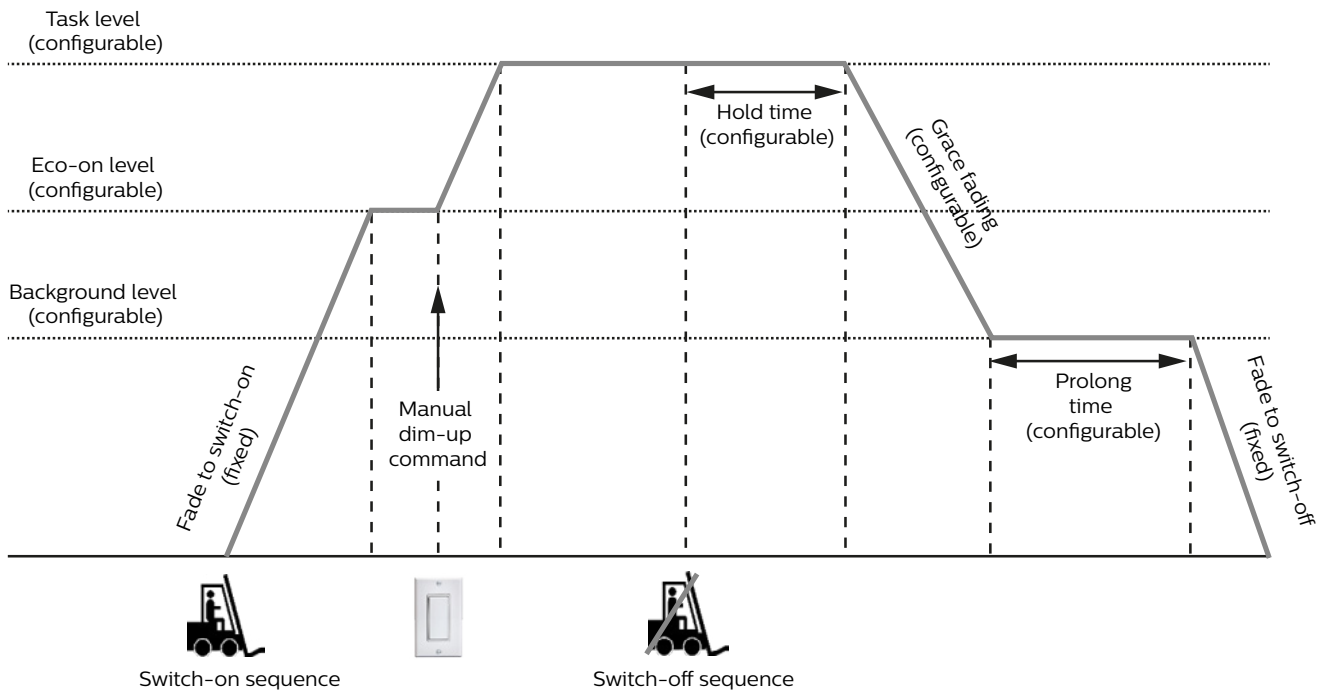
Full-On Sequence (Default)

Eco-On Level = Task Level



Partial-On Sequence (Configurable)

Eco-On Level < Task Level



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Daylight sensor

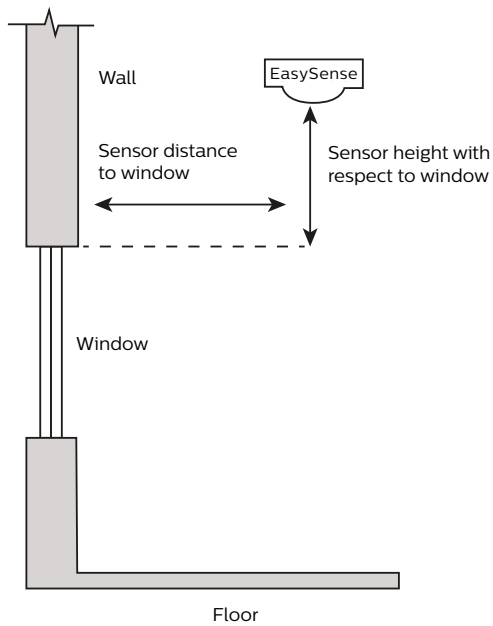
The light sensor measures the total amount of light with an opening angle of 10 degrees whereas the PIR has an angle of 27 degrees, all calculated from normal.

The following aspects should be observed during installation:

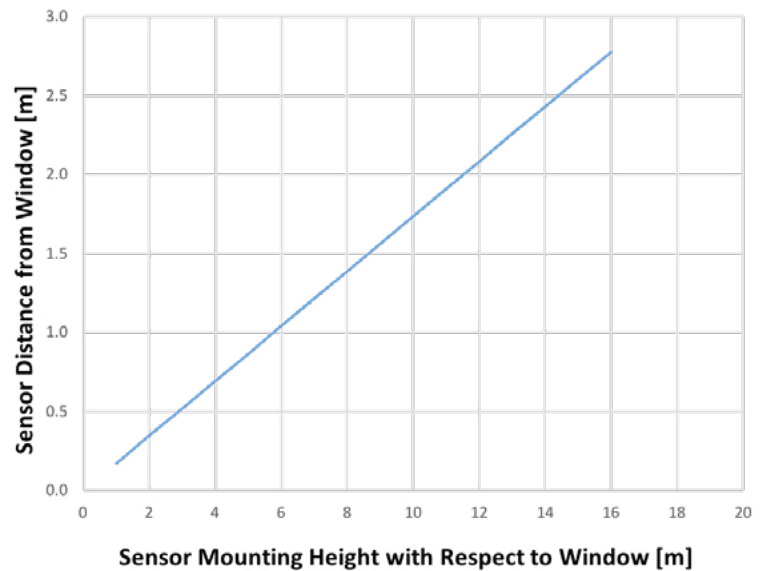
- Minimum distance from the window (see graph below)
- Prevent light reflections from outside entering the sensor (for example sunlight reflection on a car bonnet) as this will lead to incorrect light regulation.

As a guideline the formula $0.174 \times H$ can be used to calculate the minimum distance between the window and sensor whereby H is the height from the bottom of the window to the ceiling.

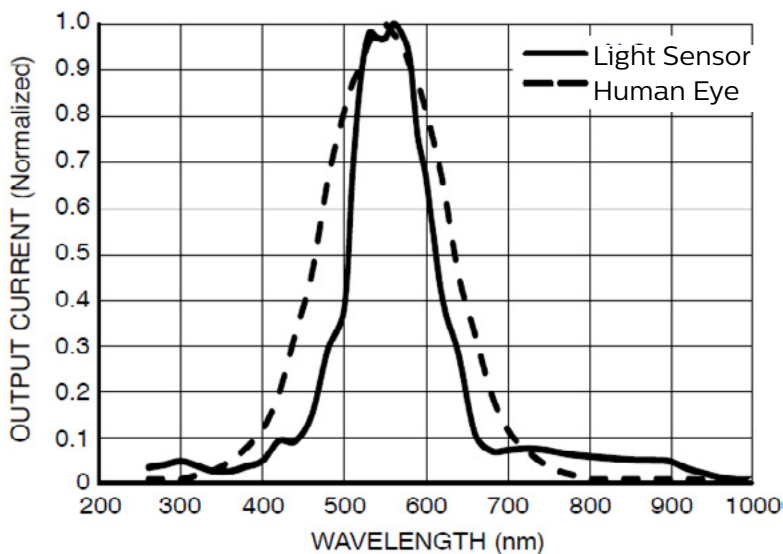
Photosensor spatial response



Minimum distance versus mounting height

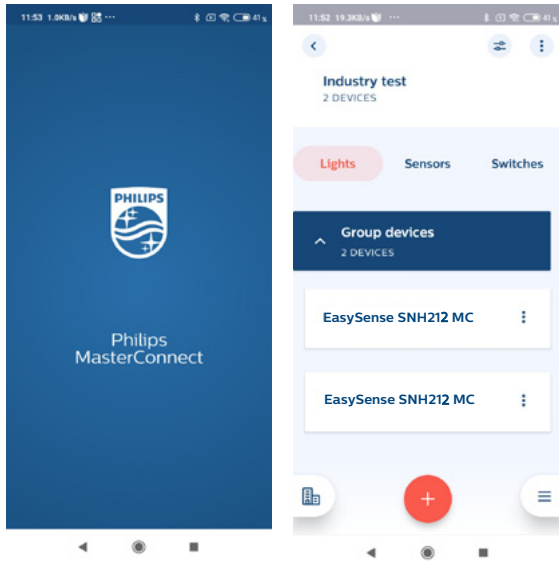


Photosensor spectral response



EasySense SNH212 MC

Philips MasterConnect app



EasySense parameters can be commissioned and configured with the Philips MasterConnect app.

This app allows grouping of luminaires and adding switches along with easy configuration of EasySense parameters.

Download Philips MasterConnect app from the Google Play Store or the Apple App Store. For details see the app manual on our website:

<https://www.usa.lighting.philips.com/products/lighting-components/masterconnect>

Default Factory Settings

Occupancy based control	Enabled
Daylight based control	Enabled
Occupancy Mode	Auto-on/off
Group/Zone Occupancy Sharing	Enabled
Zone Occupancy Sharing	Disabled
Group/Zone Lighting Behavior	Background level
Field Task Tuning	100%
Eco-On Level	100%
Background Light Level	20%
Hold Time	10 minutes
Prolong Time	10 minutes
Grace Fading	10 seconds
Fade to Switch-On	1 second (fixed value)
Fade to Switch-Off	1 second (fixed value)

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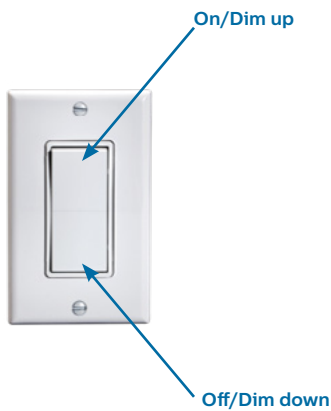
Compatible Wireless Switches

Two examples are given below. For the latest list of compatible switches please refer to the Philips MasterConnect website: <https://www.usa.lighting.philips.com/products/lighting-components/masterconnect>

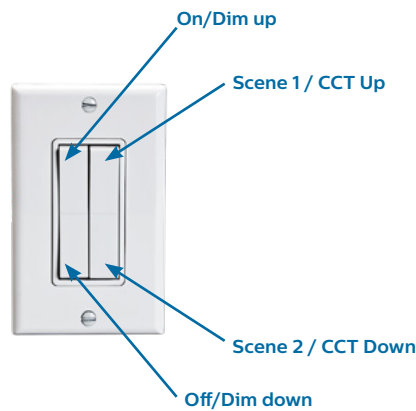
Manufacturer	Model	Style
Illumra	ZBT-S1AWH	Single Rocker Self Powered
	ZBT-S2AWH	Dual Rocker Self Powered

- Manufacturer's Product Information Links:
 - Illumra (www.illumra.com/easysense)

Single-Rocker Functions (typical switch shown)



Dual-Rocker Functions (typical switch shown)



FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated with a minimum distance 20cm between the radiator and your body.

ISED Radiation Exposure Statement

This equipment complies with ISED RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated with a minimum distance 20cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

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Signify North America Corporation
400 Crossing Blvd, Suite 600
Bridgewater, NJ 08807
Telephone 855-486-2216

Signify Canada Ltd.
281 Hillmount Road,
Markham, ON, Canada L6C 2S3
Telephone 800-668-9008

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