EC-Multi-Sensor-BLE

Overview

The EC-Multi-Sensor-BLE is a compact, "5-in-1" communicating device. With just one wire and one connection, this compact device effectively combines (1) a motion detector, (2) a light sensor, (3) a temperature sensor, and (4) a **Bluetooth**® low energy technology transceiver for the wireless control of all comfort parameters (HVAC, lighting, sunblinds) from my PERSONIFY mobile app or with the UNIWAVE series. The EC-Multi-Sensor-BLE also integrates beacon technology that can be used in solutions such as indoor positioning systems (IPS).

The sensor can be directly connected to an ECLYPSE™ Series controller or to an expansion module with a digital RJ-45 link or daisy-chained using an ECx-Subnet-Adapter. It can be used alone, together with the my PERSONIFY mobile app, or with the UNIWAVE Series.

Features & Benefits

- Bi-directional communication between the Bluetooth low energy technology transceiver and a mobile application.
- A compact style with clean lines and a slim profile easily blends in when installed in any setting
- Multi-sensing capabilities (luminosity, motion sensing, and temperature) and Bluetooth low energy connectivity
- Control heating and cooling setback through motion sensing and temperature measurement
- Control lighting through occupancy detection
- Luminosity sensor features a human-eye response to light for precise illuminance measurement under diverse lighting conditions
- An integrated LED indicator facilitates on-site localization and commissioning of the sensor.
- Both power and communications pass through a single Cat 5e cable for reduced installation costs and easier installation
- Daisy-chaining capabilities for maximum adjustment to the actual room characteristics (requires an ECx-Subnet-Adapter – not provided)
- Directly addressable via a rotary switch to facilitate configuration
- Integrated beacon technology that can be used in solutions such as indoor positioning systems (IPS).

Model Selection

EC-Multi-Sensor-BLE	
Corresponding Data Technology	Bluetooth low energy technology
Motion	■
Luminosity	■
Temperature (to be used as a backup sensor)	■

Accessories

Patch Cords	A large selection of patch cord lengths, pre-fitted with protective boot and dust cap. For use in conduit or plenum applications.
Cat 5e Cable	Spool of Cat 5e Cable – Without Connectors. For use in conduit or plenum applications.
Patch Connector Kit	100 Crimp RJ-45 Connectors
ECx-Subnet-Adapter	RJ-45 splitter for EC-Multi-Sensor-BLE daisy chaining

Product Specifications

Power

Voltage	16 VDC maximum, Class 2
Consumption	< 0.3 W

Wireless Communication

Type	Bluetooth v4.2
Frequency	2402-2480 MHz
Carrier Power	-9.18 dBm

Temperature Sensor

Type	10 kΩ NTC Thermistor
Range	+5°C to +40°C (41°F to 104°F)

⚠ As the sensor is directly installed in ceilings, it is not recommended to use its temperature sensor as the input of a space temperature control loop. The temperature sensor should only be used as a backup sensor.

Luminosity Sensor

Type	Photodiode
Response type	Human eye response
Range	0-4000 lux

Motion Sensor

Optic	16-face Fresnel lens
Type	Quad type passive infrared element
Rated detection distance	16ft (5m) maximum
Speed Range	1.0m/s
Minimum temperature difference between target and surroundings	4ºC (7.2ºF)
Detection range zones	64 zones
Detection Distance	*See Figures 2 and 3*
Operating principle	*See Figure 4*
Projection ranges	*See Figure 5*
Detection area	*See Figure 6*

Subnetwork

Compatible Controllers[1]	ECY-PTU/TU ECY-VAV ECY-303 ECY-S1000
Topology	Daisy-chain using an ECx-Subnet-Adapter (not provided)
Maximum total subnetwork length	100m (328ft)
EOL Termination	Jumper selectable
Addressing	Rotary switch (integrated)
Connection	RJ-45
Cable	T568B Cat 5e network cable, 4 twisted pairs

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Mechanical

Overall Dimensions	Ø 40 x 33.4 mm (1.6 x 1.3”)
Recessed Dimensions	Ø 32 x 25.7 mm (1.3 x 1.0”)
Shipping weight	0.14 kg (0.3 lbs)
Enclosure material[1]	ABS
Enclosure rating	Plastic housing, UL94V-1
Color	White
Installation	In-ceiling mounting with provided hardware

1. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

Environmental

Operating Temperature	+5ºC to 40ºC (41ºF to 104ºF)
Storage Temperature	-20ºC to 70ºC (-4ºF to 158ºF)
Relative Humidity	20% to 90% Non-condensing
IP rating	IP20 (IEC 60529)

Standards and Regulations

CE - Emission	EN 61000-6-3: 2007 + A1: ed.2011
CE - Immunity	EN 61000-6-1: 2007
CE - Radio	EN 300 328 V2.1.1 November 2016
FCC	FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL916 Energy management equipment
Plenum Rated	UL Standard 2043

Dimensions

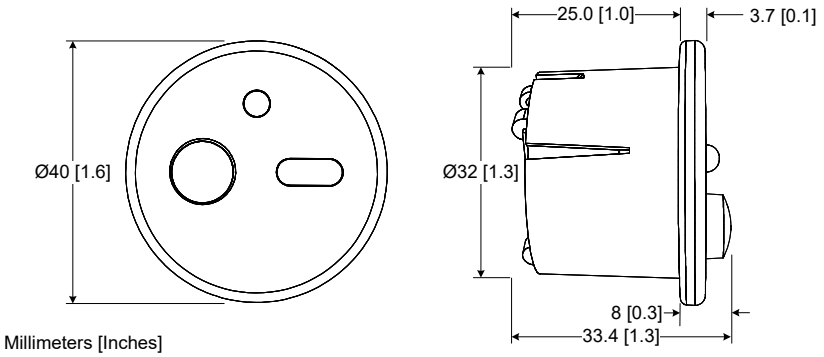

Figure 1: Dimensions

Detection Areas and Ranges

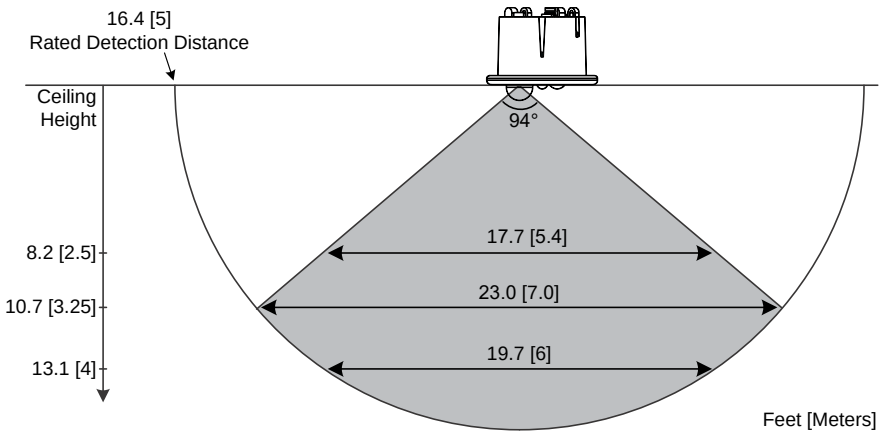

Figure 2: Horizontal Detection Distance

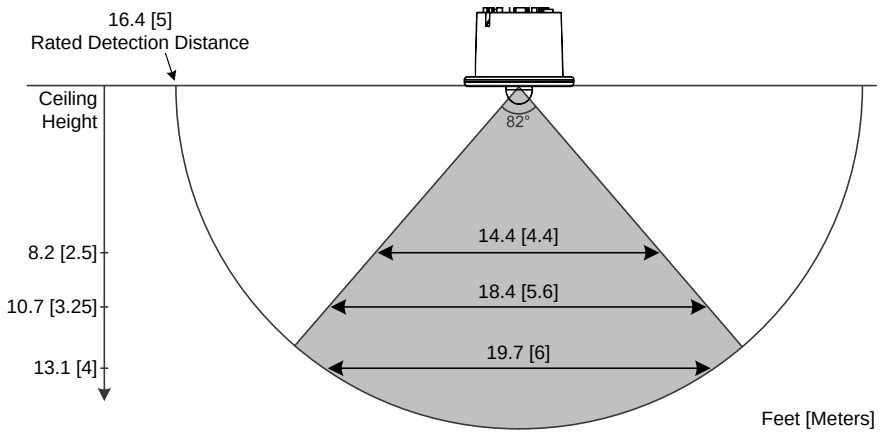

Figure 3: Vertical Detection Distance

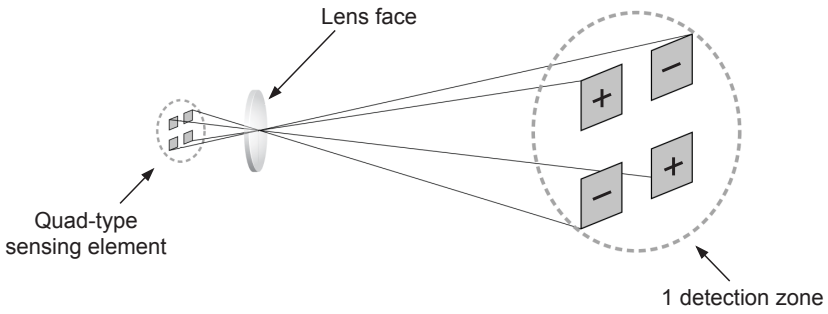

Figure 4: Operating principle

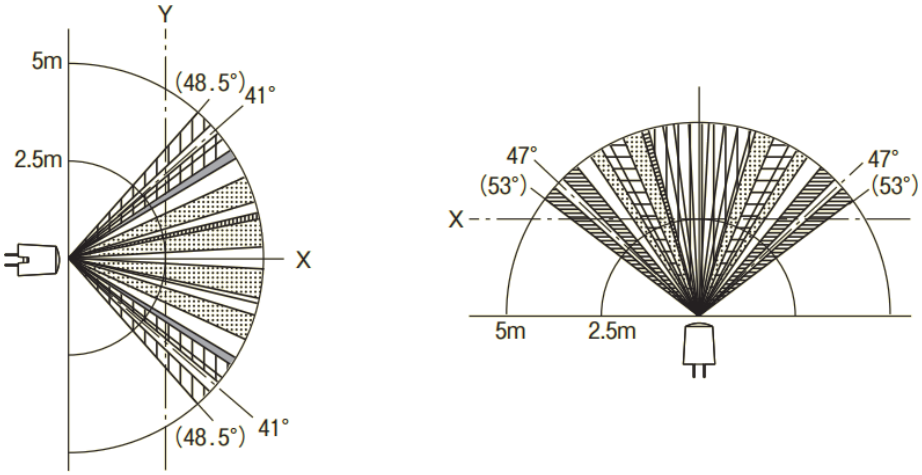

Figure 5: Projection ranges – side view (left) and top view (right)

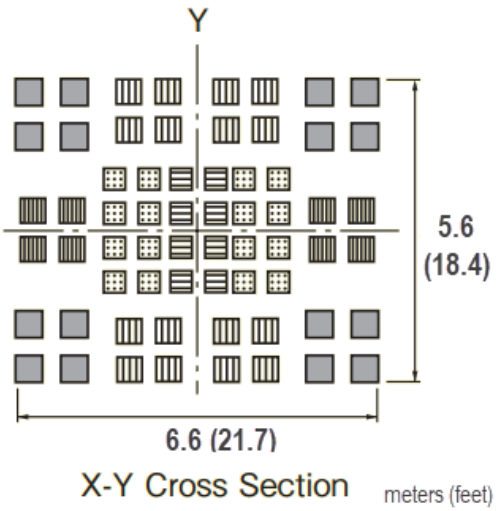

Figure 6: Detection area for a 2.5m (8.2ft) high sensor