Micro Sensor
8-pin

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SPECIFICATION

The Enlighted Micro Sensor, 8-pin, is our fifth-generation sensor, delivering all the functionality of our other sensors in a minimally-sized package. Integrated sensors capture data that is both processed locally and transmitted over the Enlighted network, enabling a full suite of applications. In addition, the sensor supports Bluetooth® Low Energy communication with tags and other BLE devices.

OVERVIEW

The Micro Sensor, 8-pin, is a complete sensing and lighting control node powered from its attached light fixture. An innovative carrier-based mounting design supports easy installation and replacement. With integrated wireless communications for data transmission and remote configuration as well as autonomous fixture-level control, this sensor brings advanced lighting automation to a whole new level.

FEATURES AND BENEFITS

Enlighted Sensor Interface (ESI): IoT Ready™ LED drivers and Enlighted Control Units communicate with the sensor directly via a serial interface. The ESI provides access to device information, energy consumption, and digital lighting control.

Localized Lighting Control: Light-level schedules, preferences, and behavior profiles for each fixture are wirelessly communicated during system setup and locally stored to ensure continuous operation.

Edge Sensing: Local processing capability supports advanced sensing and detection algorithms, providing optimization of existing features and enabling future applications.

Bluetooth Low Energy: An embedded BLE radio allows the sensor to receive and transmit beacons as well as support communication with lighting control devices and other sensors.

Occupancy and Thermal Sensing: A digital Passive Infrared (PIR) sensor combined with separate ambient and temperature sensing support precise motion identification while minimizing false detection events.

Tunable White: Dual channel control supports tunable white fixtures, enabling color transitions based on time of day or user control.

Daylight Harvesting: Captured ambient light information is locally processed to raise and lower light levels based on available daylight.

Room and Zone Control: Pairs with room control switches for code-compliant manual-on or auto-off capability. Sensors can be grouped into zones that share occupancy sensing data and coordinate light control based on detected motion.

IoT Sensing Node: When configured as an IoT Node, the sensor streams comprehensive live data for use with Enlighted's real-time location and analytics software applications. This option is available directly from the factory or as a remote upgrade.

Standards-Based Networking and Security: The Enlighted 802.15.4 wireless network with AES-128 encryption delivers secure, reliable communication that coexists with Wi-Fi networks by sensing low-traffic channels and transmitting in bursts.

Data Privacy: The sensor captures occupancy data in the sensor coverage area. The sensor cannot directly reference or identify any natural person.

Driver Compatibility: Dimming and on/off control signaling for standard 0-10V ballasts and drivers using linear dimming curve for LED and fluorescent light fixtures.

Micro Sensor, 8-pin

Body	L	0.88"	22.5 mm
	Dia.	0.73"	18.5 mm
Bezel	Dia.	1.06"	27.0 mm

The Enlighted Fixture Carrier

Body	L	0.51"	13 mm
	Dia.	0.81"	20.7 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

- ☐ SU-5e-[IoT/CL/IL]
- ☐ SU-CL-IoT-UPG
- ☐ SU-IL-IoT-UPG
- ☐ HCMC-SU-5E
- ☐ TMC-SU-5E
- ☐ CPL-RJ45
- ☐ CBL-5E-CU4-30N
- ☐ CBL-5E-CU4-7F
- ☐ CBL-5E-CU4-12N
- ☐ CBL-5E-5W-30N

Micro Sensor
8-pin

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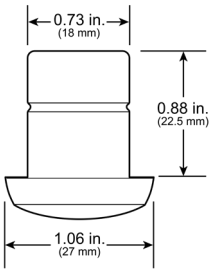
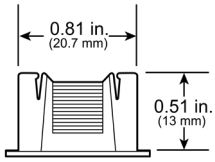
MOUNTING

The Enlighted Micro Sensor is designed to be easily mounted into lighting fixtures or ceiling tiles such that only the discreet white faceplate is visible. The sensor slides into a carrier sleeve fitting a standard 1/2 inch trade size knockout or 7/8 inch (22 mm) hole. Carrier sleeves compatible with either lighting fixtures or ceiling tiles are available. Sensor replacement requires no tools—simply slide the sensor out of the carrier, unplug the connector, and install the new sensor.

Micro Sensor



Carrier

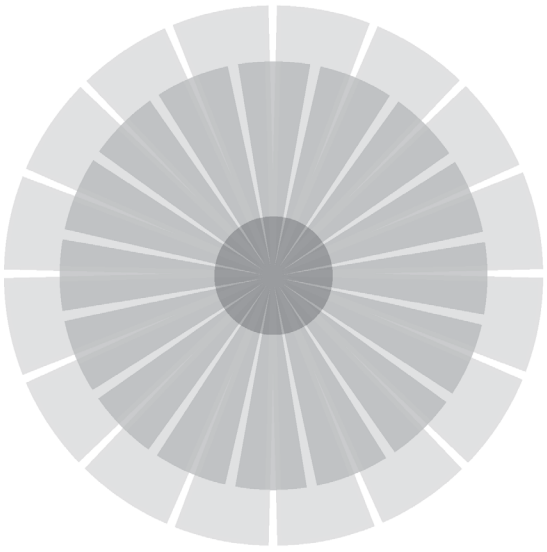


SENSOR COVERAGE PATTERNS

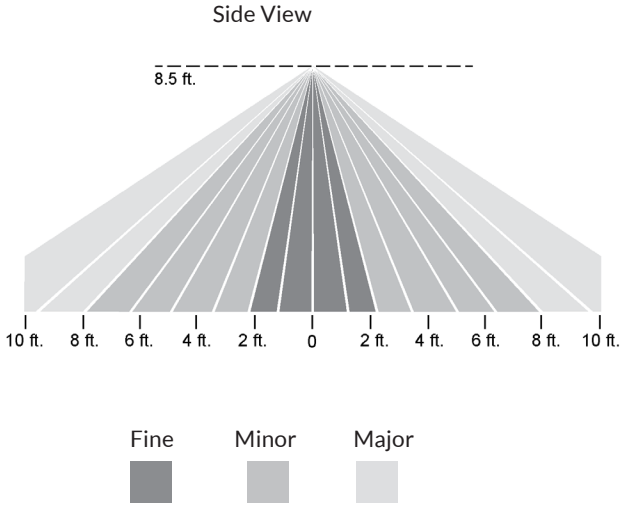
The Enlighted Micro Sensor incorporates an optical Fresnel lens that works with the digital Passive Infrared (PIR) sensor to detect occupancy and motion. The multifaceted lens focuses light onto the PIR to produce an all-encompassing field of view through aggregation of many narrow fields of view. When the Micro Sensor is deployed as recommended, the area covered by each sensor overlaps, reinforcing coverage and accuracy across the entire floor plan.

Ceiling Height	Fine Motion (Radius)	Minor Motion (Radius)	Major Motion (Radius)
8.5 ft/2.6 m	2.3 ft/0.7 m	8 ft/2.4 m	10 ft/3.0 m
15 ft/4.6 m	4.0 ft/1.2 m	10 ft/3.0 m	18 ft/5.5 m

Top View



Side View



TECHNICAL SPECIFICATIONS

Motion Sensing: Digital Passive IR

Photosensor: Light Pipe/Photosensor Array

Enclosure: ABS/Polycarbonate blend

Type: Closed Loop Light Sensor

Operating Temp: 32° to 122° F / 0° to 50° C

Power Consumption: 200 mW max.

Voltage:12-30 V

Wireless Standards: IEEE 802.15.4
Bluetooth 4.0 Low Energy (BLE)
Radio Frequency: 2400-2483.5 MHz
Wireless Range: 150 ft. (46 m) radius open range
Encryption: AES-128

ORDERING INFORMATION

SU-5e-xxx*	Micro Sensor, 8-pin (*see Product codes)
SU-CL-IoT-UPG	Connected Lighting to IoT Sensor Upgrade
SU-IL-IoT-UPG	Independent Lighting to IoT Sensor Upgrade
HCMC-SU-5E	Hard Ceiling Mount Carrier
TMC-SU-5E	Tile Mount Carrier
CPL-RJ45	Female RJ45 Coupler
CBL-5E-CU4-30N	30 inch Sensor Cable for CU-4
CBL-5E-CU4-7F	7 foot Sensor Cable for CU-4
CBL-5E-CU4-12N	12 inch Cable for CU-4
CBL-5E-5W-30N	30 inch Profile 0 Driver Cable

COMPLIANCE

Europe CE REACH
United States FC UL LISTED
Canada c UL LISTED

WARRANTY: 5 years
View www.enlightedinc.com/limited-warranty-terms for complete terms and conditions

***Product Codes**: xxx
IoT= IoT Node
CL= Connected Lighting
IL= Independent Lighting /Enlighted One

Ruggedized Sensor
8-pin

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SPECIFICATION

The Ruggedized Sensor, 8-pin, is designed for outdoor applications, parking structures, and damp or wet locations that require a sensor with an IP65 rating. Integrated sensors capture data that is both processed locally and transmitted over the Enlighted network, enabling a full suite of applications. The sensor supports Bluetooth® Low Energy communication with tags and other BLE devices.

OVERVIEW

The Ruggedized Sensor, 8-pin, is a complete sensing and lighting control node powered from its attached light fixture. Sensor information combined with a configurable behavior profile make the sensor an integral component of an intelligent lighting control and sensing solution. With integrated wireless communications for data transmission and remote configuration along with autonomous fixture-level control, this sensor brings advanced lighting automation to a whole new level.

FEATURES AND BENEFITS

Enlighted Sensor Interface (ESI): IoT Ready™ LED drivers and Enlighted Control Units communicate with the sensor directly via a serial interface. The ESI provides access to device information, energy consumption, and digital lighting control.

Localized Lighting Control: Light-level schedules, preferences, and behavior profiles for each fixture are wirelessly communicated during system setup and locally stored to ensure continuous operation.

Edge Sensing: Local processing capability supports advanced sensing and detection algorithms, providing optimization of existing features and enabling future applications.

Bluetooth Low Energy: An embedded BLE radio allows the sensor to receive, transmit beacons and support communication with lighting control devices and other sensors.

Occupancy and Thermal Sensing: A digital Passive Infrared (PIR) sensor combined with separate ambient and temperature sensing support precise motion identification while minimizing false detection events.

Tunable White: Dual channel control supports tunable white fixtures, enabling color transitions based on time of day or user control.

Daylight Harvesting: Captured ambient light information is locally processed to raise and lower light levels based on available daylight.

Room and Zone Control: Pairs with room control switches for code-compliant manual-on or auto-off capability. Sensors can be grouped into zones that share occupancy sensing data and coordinate light control based on detected motion.

IoT Sensing Node: When configured as an IoT Node, the sensor streams comprehensive live data for use with Enlighted's real-time location and analytics software applications. This option is available directly from the factory or as a remote upgrade.

Standards-Based Networking and Security: The Enlighted 802.15.4 wireless network with AES-128 encryption delivers secure, reliable communication that coexists with Wi-Fi networks by sensing low-traffic channels and transmitting in bursts.

Data Privacy: The sensor captures occupancy data in the sensor coverage area. The sensor cannot directly reference or identify any natural person.

Driver Compatibility: Dimming and on/off control signaling for standard 0-10V ballasts and drivers using linear dimming curve for in LED and fluorescent light fixtures.

Ruggedized Sensor, 8-pin		
Dia.	3.54"	90.0 mm
H	1.16"	29.5 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

- ☐ SU-5S-HRW-[IoT/CL/IL]
- ☐ SU-5S-HRB-[IoT/CL/IL]
- ☐ SU-5S-LRW-[IoT/CL/IL]
- ☐ SU-5S-LRB-[IoT/CL/IL]
- ☐ HCMC-SU-5E
- ☐ SU-CL-IoT-UPG
- ☐ SU-IL-IoT-UPG
- ☐ CPL-RJ45
- ☐ CBL-RJ45-RJ45-7F
- ☐ CBL-RJ45-5W-7F
- ☐

Ruggedized Sensor
8-pin

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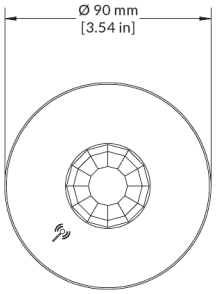
MOUNTING

The Ruggedized Sensor installs into a standard 1/2 inch fixture knockout. A permanently attached 22 inch cable with an RJ-45 connector must be fed through the opening before the sensor is secured via a threaded locknut provided with the sensor.

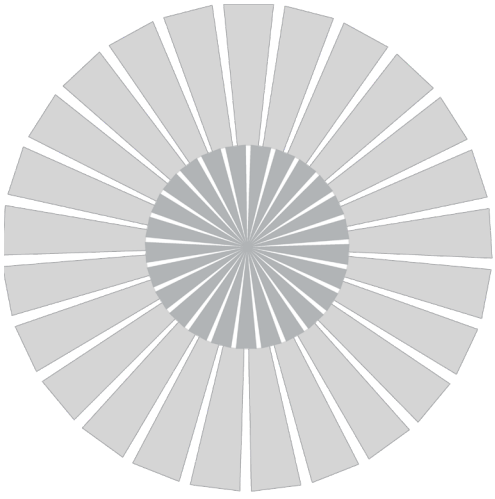
SENSOR COVERAGE PATTERNS

The Enlighted Ruggedized Sensor incorporates an optical Fresnel lens that works with the digital Passive Infrared (PIR) sensor to detect occupancy and motion. The multifaceted lens focuses light onto the PIR to produce an all-encompassing field of view through aggregation of many narrow fields of view. Two lens options are offered to cover standard (< 18 ft.) and high-bay (up to 50 ft.) ceilings. When the Ruggedized Sensor is deployed as recommended, the area covered by each sensor overlaps, reinforcing coverage and accuracy across the entire floor plan.

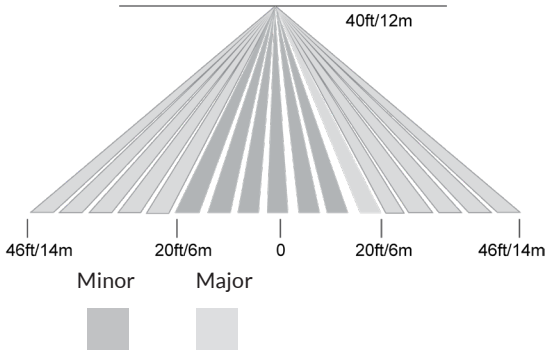


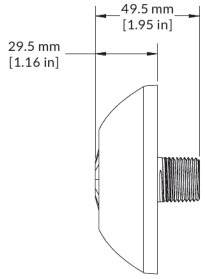
Ceiling Height	Minor Motion (Radius)	Major Motion (Radius)
12 ft/3.5 m	8 ft/2.5 m	20 ft/6 m
40 ft/12 m	20 ft/6 m	46 ft/14 m

Top View



Side View





TECHNICAL SPECIFICATIONS

Motion Sensing: Digital Passive IR
Photosensor: Light Pipe/Photosensor Array
Enclosure: UV Stabilized Polycarbonate
Type: Closed Loop Light Sensor
Operating Temp: –31° to 185° F/–35° to 85° C
Power Consumption: 200 mW Max, 12-30 V
Cable: 22" (559 mm) RJ-45 connector
Max. Install Height: High Bay 50 ft/15.25 m
Standard 18 ft/5.4 m
Wireless Standards: IEEE 802.15.4
Bluetooth 4.0 Low Energy (BLE)
Radio Frequency: 2400-2483.5 MHz
Wireless Range: 150 ft. (46 m) radius open range
Encryption: AES-128
Two Dimming Outputs: 10mA source/sink each

ORDERING INFORMATION

SU-5S-HRW-xxx*	Ruggedized High Bay, 8-pin, White
SU-5S-HRB-xxx*	Ruggedized High Bay, 8-pin, Bronze
SU-5S-LRW-xxx*	Ruggedized Standard, 8-pin, White
SU-5S-LRB-xxx*	Ruggedized Standard, 8-pin, Bronze
	(*see Product codes)
HCMC-SU-5E	Hard Ceiling Mount Carrier
SU-CL-IoT-UPG	Connected Lighting to IoT Sensor Upgrade
SU-IL-IoT-UPG	Independent Lighting to IoT Sensor Upgrade
CPL-RJ45	Female RJ45 Coupler
CBL-RJ45-RJ45-7F	7 foot Sensor Cable for CU-4 and IoT Ready™ drivers
CBL-RJ45-5W-7F	7 foot Profile 0 Driver Cable

COMPLIANCE

Europe CE REACH
United States FC UL LISTED
Canada cUL LISTED

WARRANTY: 5 years
www.enlightedinc.com/limited-warranty-terms provides complete terms and conditions.

***Product Codes**: xxx
IoT= IoT Node
CL= Connected Lighting
IL= Independent Lighting/Enlighted One

Surface Sensor
USB

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SPECIFICATION

The Surface Sensor, USB, available in a minimally-sized package, provides users with real-time occupancy availability. The Surface Sensor, optimized for easy deployment, mounts to light fixtures or ceiling tiles and under desks. Integrated sensors capture data that is both processed locally and transmitted over the Enlighted network, enabling a full suite of applications. In addition, the sensor supports Bluetooth® Low Energy communication with tags and other BLE devices.

Surface Sensor, USB

L	2.0"	50.8 mm
W	0.53"	13.4 mm
Depth	0.56"	14.2 mm

OVERVIEW

The Surface Sensor, USB, is a complete sensing node powered by a low voltage power source. The sensor incorporates an optical Fresnel lens, providing occupancy coverage for a wide range of mounting heights for different applications. An innovative mount-based design or an adhesive strip included in the kit supports easy installation and maintenance.

The pre-installed mask on the lens, for desk occupancy applications, restricts the sensor's field of view to avoid false detection of motion for under-desk coverage. For room occupancy applications, remove the mask covering the sensor lens for a wider range of coverage.

The sensor must be connected to a low voltage power source. Enlighted's recommended solution includes the following:

- USB-A to micro USB-B or micro USB-A connector cable up to 8 m/26.2 ft in length
- AC/DC 5V with 10W or 3W external wall mounted power adapter

FEATURES

Edge Sensing: Local processing capability supports advanced sensing and detection algorithms, providing optimization of existing features and enabling future applications.

Bluetooth Low Energy: An embedded BLE radio allows the sensor to receive and transmit beacons.

Occupancy Sensing: A digital Passive Infrared (PIR) sensor supports precise motion identification while minimizing false detection events.

IoT Sensing Node: When configured as an IoT Node, the sensor streams comprehensive live data for use with Enlighted's real-time location, analytics, and API software products.

Standards-Based Networking and Security: The Enlighted 802.15.4 wireless network with AES-128 encryption delivers secure, reliable communication that coexists with Wi-Fi networks by sensing low-traffic channels and transmitting in bursts.

Data Privacy: The sensor captures occupancy data in the sensor coverage area. The sensor cannot directly reference or identify any natural person.

MOUNTING

The sensor is designed to be easily mounted into lighting fixtures, ceiling tiles using the adhesive tape, or mounted to the underside of the desk using either the adhesive tape or the bracket mount shipped with the sensor. For room occupancy sensing applications, remove the mask on the sensor lens.

For a typical 27" seated-height desk or 50" standing desk, mount the sensor to the underside of the desk 15-26" from the front edge and at least 5" from the rear edge of the desk. After installation, the sensor lens must be facing the desk occupant.

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

- ☐ SU-5i-USB-IoT
- ☐ BRKT-SU5i-50
- ☐ API-RTO-DSK-A-01
- ☐ API-RTO-AREA-A-01
- ☐
- ☐

Surface Sensor
USB

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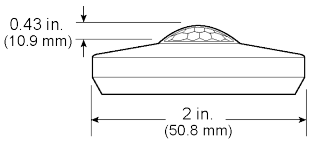
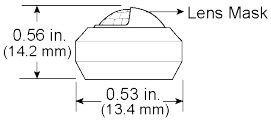
SENSOR COVERAGE PATTERNS

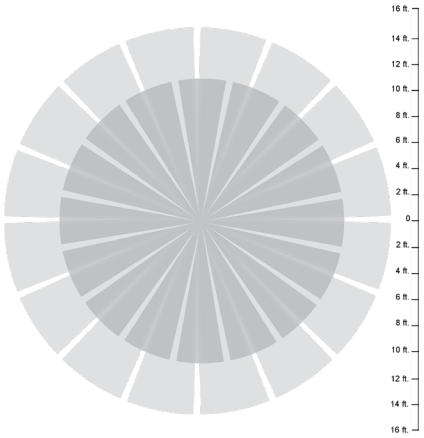
The Surface Sensor incorporates an optical Fresnel lens that works with the digital Passive Infrared (PIR) sensor to detect occupancy and motion. The multifaceted lens focuses light onto the PIR to produce an all-encompassing field of view through the aggregation of many narrow fields of view. When the sensor is deployed as recommended, the area covered by each sensor overlaps, reinforcing coverage and accuracy across the entire floor plan.

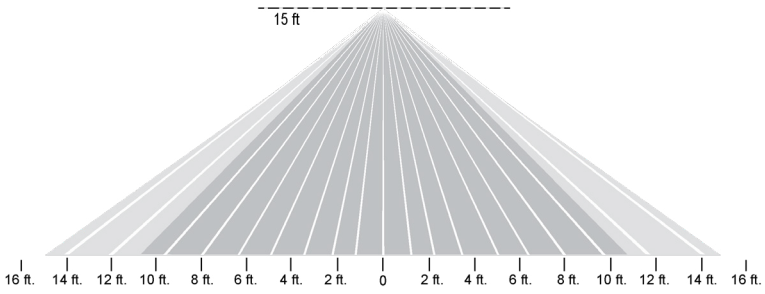




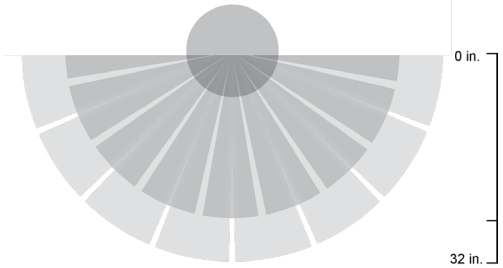
Height	Minor Motion (Radius)	Major Motion (Radius)
Ceiling 8.5 ft/2.6 m	7.2 ft/2.2 m	8.9 ft/2.7 m
Ceiling 10 ft/3.0 m	8.4 ft/2.5 m	10.5 ft/3.2 m
Ceiling 15 ft/4.6 m	11 ft/3.3 m	14.5 ft/4.4 m
Desk 27" or 50 inches		32 inches

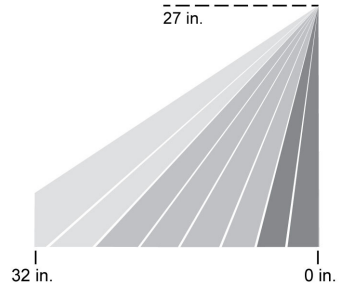
Ceiling Top and Side View





Desk Top and Side View





Major Motion

Minor Motion

TECHNICAL SPECIFICATIONS

Mount Adhesive: One VHB Adhesive Strip
Mount Bracket: Polycarbonate Polymer, ~5 grams weight, Two #4 0.5" wood screws
Maximum Input Power:
USB Port: ~120mW
Maximum RF Output Power:
RF Output IEEE 802.15.4: 3-4dBm
BLE: 0 dBm
Wireless Standards: IEEE 802.15.4
Bluetooth 4.0 Low Energy (BLE)
Radio Frequency: 2400-2483.5 MHz
Wireless Range: 150 ft. (46 m) radius open range
Encryption: AES-128

ORDERING INFORMATION

SU-5i-USB-IoT	Surface Sensor, USB
BRKT-SU5I-50*	Mount Bracket
API-RTO-DSK-A-01	Desk Occupancy API
API-RT0-AREA-A-01	Area Occupancy API

COMPLIANCE

Europe
United States
Canada

WARRANTY: 5 years
View www.enlightedinc.com/limited-warranty-terms for complete terms and conditions

*Optional 50-pack of the brackets with screws sold separately.

one

The **Enlighted One** combines brilliant independent lighting with easy setup. **Energy optimization, task-tuned lighting behavior, and code compliance** — all in the One solution.

The Enlighted One "room-by-room" solution can be configured to different profiles and task tuned to optimize occupant comfort and energy efficiency. Configure the sensors to turn on with the Enlighted Room Control (ERC) switch or when motion is detected by any sensor in the room. Lights dim with daylight harvesting and occupants can quickly choose from preset dim levels.

Set up rooms with a few button pushes on the ERC and reconfigure the grouping or lighting behavior without wiring changes. No gateways, no servers, no mobile applications, and no wiring to the ERC is required.

FEATURES

Autonomous Lighting Behavior: Sensors adjust light levels based on occupancy, task tuning, daylight harvesting, and configurable lighting profiles.

Manual Lighting Behavior: The ERC switch turns lights on/off or to preset dim levels.

Daylight Harvesting: Fixture lights are dimmed or turned off in response to daylight. Calibrate with the press of a button.

Occupancy or Vacancy Behavior: Configure sensors in a room for manual-on (vacancy switch) or auto-on (occupancy switch).

Energy Savings: Depending on occupancy patterns and available natural light, savings may be as high as 65 percent.

Group Sensors to ERC: Press a few buttons on an ERC, then group sensors by strobing them with an off-the-shelf laser pointer, choose lighting behavior, and setup is complete.

Multiple ERCs per Room: Add ERCs at each room entry point to control room lights.

Personalize and Reconfigure: Customize individual light levels and easily add or remove sensors from a group anytime.

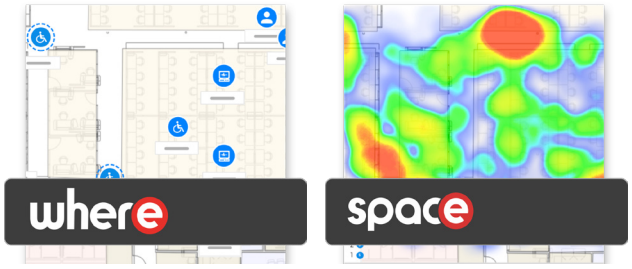
Code Compliant & Rebate Qualified: Out-of-box building code compliant and qualified for energy rebates.

Easy Install: Less labor cost compared to wired lighting solutions due to wireless communications between the ERC and sensors.

Driver Compatibility: Dimming and on/off control signaling for 0-10V or 2-wire DALI drivers in LED and fluorescent fixtures.

UPGRADABLE TO IoT CAPABILITIES

The One uses the same sensors that power Enlighted's IoT applications. Facility owners can upgrade to IoT capabilities to unleash energy reporting with hard metering, indoor location using Bluetooth, real estate analytics from occupancy sensing, Building Management System integration, BACnet and API communications, connected lighting, and more.



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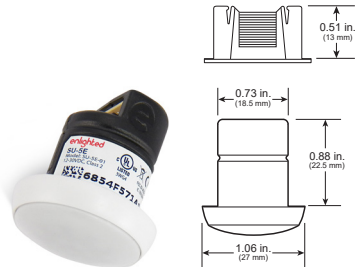
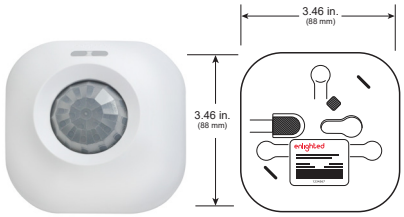
MICRO SENSOR



Ideal for offices, medical buildings, dry labs, etc., the Micro sensor comes integrated into lighting fixtures or it can be installed in the field. A sleeve for installing into ceiling tiles is included. Mounting options for drywall ceilings and other surfaces are available separately.

Max. Install Height:
15 ft/4.6m

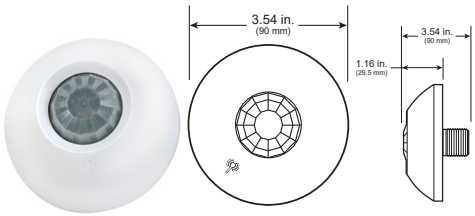
SURFACE MOUNT SENSOR



Designed for indoors with high ceilings such as warehouses, atriums, and manufacturing facilities. A nylon threaded screw for ceiling tile or drywall mounting is included. Button and flat metal bracket mounting options are available separately.

Max. Install Height:
50 ft/15.25m

RUGGEDIZED SENSOR



Designed for outdoor applications such as parking structures and damp or wet locations requiring an IP65 rating. Installs into a standard ½ inch knockout opening. Options include bronze or white colors for standard or high bay heights.

Max. Install Height: Standard 18 ft/5.4m
High Bay 50 ft/15.25m

Suitable for 0-10V drivers or 2-wire DALI drivers. See sensor specifications for additional details.

MOUNTING ENLIGHTED ROOM CONTROL (ERC)

The ERC may be mounted directly on the wall or screwed into a gang box. A snap-on face plate is provided or third party face plates may be attached with screws. No wires are used. An ERC is needed for programming, but can then be reset and the fixtures will continue to function automatically.

BRIGHT
Tap to turn lights on
Press and hold to gradually brighten

DIM
Tap to turn lights off
Press and hold to gradually dim

PRESET DIM LEVELS
Tap to cycle through different dim levels

AUTO
Tap to cancel switch override

TECHNICAL SPECIFICATIONS

Maximum Fixtures per Group: 75
Maximum ERCs per Group: 4
Maximum Groups per Facility: Unlimited
Number of Task Tune Levels: 4
Number of Lighting Profiles: 4
Number of Preset Dim Levels: 3
Supported Sensors: All SU-5 sensors
Supported ERC: WS-2-00-IL

Wireless Standards: IEEE 802.15.4
Radio Frequency: 2400-2483.5 MHz
Wireless open range from ERC to the closest sensor:
Micro sensor (SU-5E): 50 ft/15m
Surface Mount/Ruggedized sensor (SU-5S): 75ft/22m
Wireless open range between sensors:
Micro sensor (SU-5E): 75 ft/22m
Surface Mount/Ruggedized sensor (SU-5S): 150 ft/45m
Encryption: AES-128

ORDERING INFORMATION

Sensors: Refer to SU-5 sensor specifications. Specify "-IL" (Independent lighting) for the Enlighted One solution.
ERCs: Specify at least one WS-2-00-IL for programming, refer to ERC specification.
Laser Pointer: Use an off-the-shelf Class II green laser for programming. Order LP-1-00.

Warranty and Compliance: Refer to sensor and ERC specifications.

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