



ENERGY EFFICIENCY, COMFORT, DIGITALIZATION

Rethinking the smart building differently

Enlighted represents the building to meet the new challenges of energy conservation, occupant comfort, and digitalization of the building.

더 알아보기



SIEMENS

Siemens Smart Infrastructure combines the real and digital worlds across energy systems, buildings and industries, enhancing the way people live and work and significantly improving efficiency and sustainability



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The Enlighted One

enlighted[™]
A Siemens Company



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.

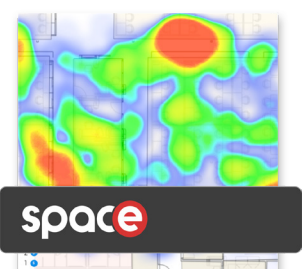
Code Compliant & Rebate Qualified: Out-of-box building code compliant and qualified for energy rebates.

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.

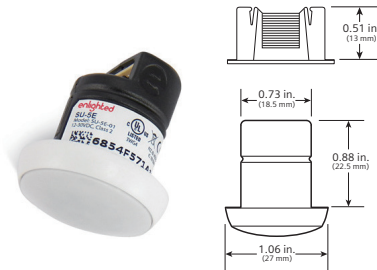
UPGRADABLE TO IOT CAPABILITIES

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.





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

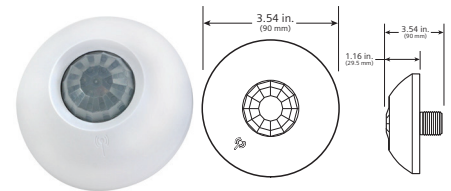
SURFACE MOUNT SENSOR



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 1/2 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: 4
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.

The Enlighted Space Application



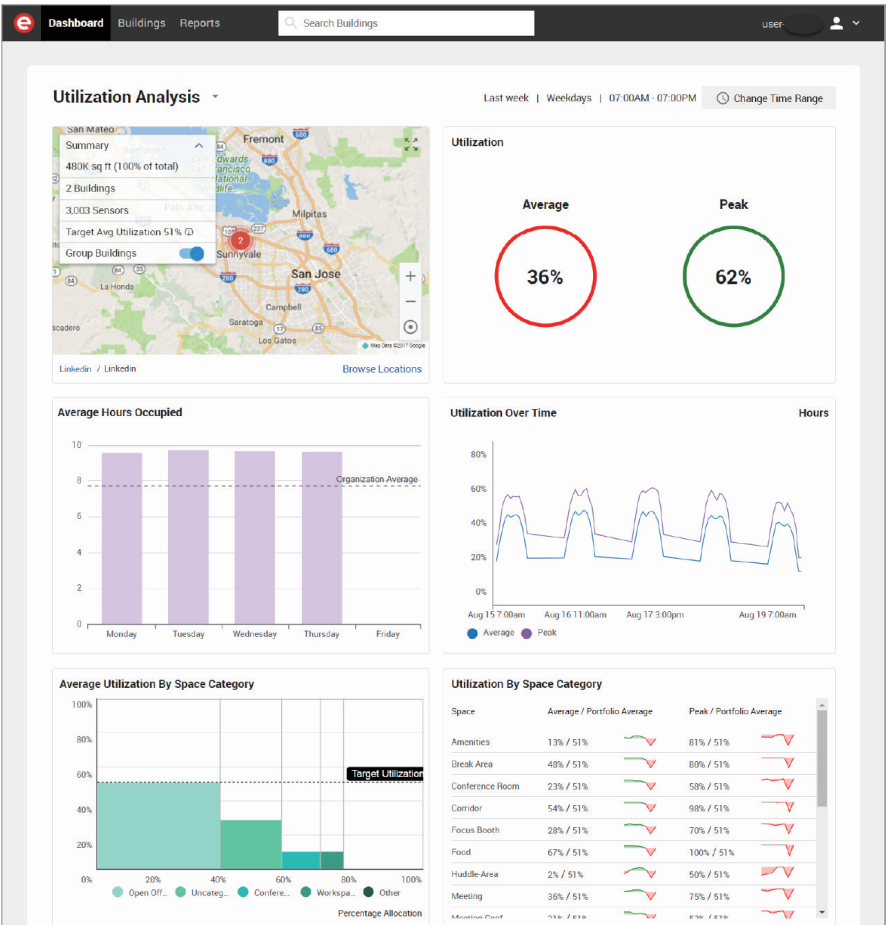
Occupancy-based Utilization

The Enlighted Space application, powered with the data collected by Enlighted sensors, enables organizations to understand and optimize their real estate utilization while improving productivity.

Previously, real estate decisions were made with limited data, sometimes relying on expensive research projects with people manually collecting data to capture a snapshot of building usage. This data would quickly become stale, limiting the ability of decision-makers to act on up-to-date information.

The Enlighted IoT platform, together with the Space application, digitizes and automates data collection and analysis. The Enlighted's dense sensor network of one sensor per light fixture collects data continuously across buildings and campuses. Data is analyzed and presented in comprehensive reports.

Analysis of real estate usage and occupancy patterns is now possible using real-time data collected 24/7, 365 days a year, across entire buildings and portfolios.



The Enlighted Space Advantage

- Make decisions based on robust occupancy data
- Optimize workspaces
- Reduce real estate expenses
- Avoid unneeded office expansion
- Identify trends signaling the need for expanded workspace



How Enlighted Space Works

Enlighted smart sensors collect occupancy data, and proprietary tracking algorithms monitor the patterns of motion caused by people walking or staying still. The Enlighted Space application then analyzes and reports on space occupancy and movement over specified time intervals.

Data is displayed in dashboards, charts, and graphs that identify trends in the occupancy rates and space usage, giving building operators unprecedented access to detailed occupancy information and motion patterns for any time period. Enlighted Space also non-intrusively measures usage rates of workspaces, helping flag problems like underutilized or inefficiently used areas.

Features

- Easy to deploy cloud-hosted SaaS-based application
- Key utilization metrics and conference room dashboards
- Detailed occupancy analysis
- Data-driven visual analysis of occupant movement
- Customizable reports and graphs

The Enlighted IoT Platform

Enlighted brings the Internet of Things to buildings by deploying cloud-connected sensors, advanced networking, and big data analytics applications. The infrastructure pays for itself through energy savings of up to 90%. Enlighted's dense sensor network of one sensor per light fixture and ceiling-mounted positioning captures the most robust data in the industry. This data powers Enlighted's solutions for building space management, real-time location services, occupancy-based HVAC, lighting control, and more.

Data Privacy

The Enlighted Space application collects and stores occupancy data captured by the Enlighted sensors and saved in the Enlighted Energy Manager platform. For information specific to the sensors or platform, refer to the corresponding specification sheet.

The Space application stores the organization name, occupancy data, floor maps, and organizational facility information for providing services. The application tracks user login, logout events, user IP address, and application pages accessed by the users.

Gain Visibility

- Configurable reports
- Executive dashboards
- Visual analysis of actual motion trails
- After-hours activities audits and video forensic support

Improve Problem Areas

- Daily building monitoring
- Comparative benchmarking
- Causal analysis

Product Codes

SPC-SWC: License Subscription Pricing

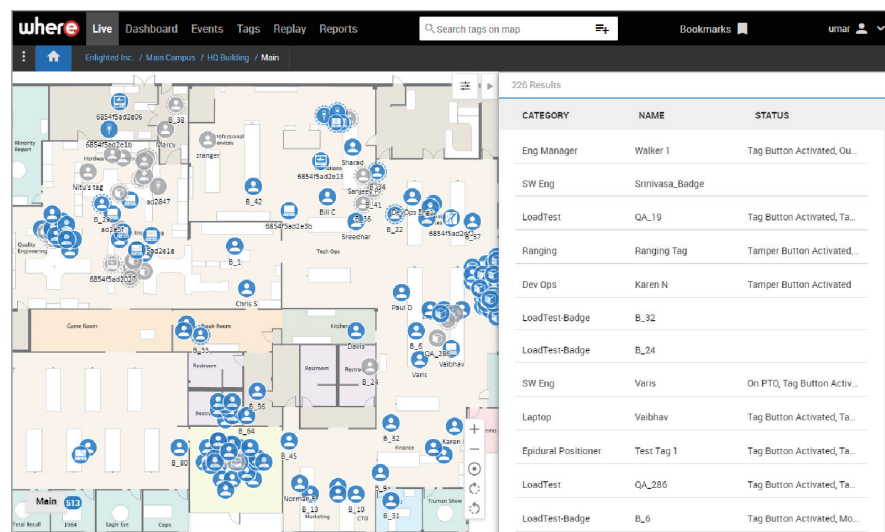
The Enlighted Where Accurate Indoor Location Mapping



The Enlighted Where application reliably tracks assets and locates people in real-time in a building or across buildings in an enterprise. The Where application component, integrated into the Enlighted IoT platform, provides a unified solution leveraging data from the Enlighted sensors.

Enlighted tags are attached physically to equipment or worn as staff badges. Using the tag location data, the Where application provides a live view of current tag locations within a facility by floor or department, and category, allowing for precise search and real-time alerts. The tag location data may be replayed on demand, or in generated reports. Aggregate tag location information can also be displayed in various dashboards.

The Enlighted Where application is a global enterprise-wide real-time location system showing live and replayed movement of tags in buildings. The dashboard displays asset metrics based on live data for monitoring and managing assets. Reports provide insights to both Live and Historical data.



Real-time motion or replayed motion of tagged items on the map.

The Enlighted IoT Platform

Enlighted brings the Internet of Things to buildings by deploying cloud-connected sensors, advanced networking, and big data analytics applications. The infrastructure pays for itself through energy savings of up to 90%. Enlighted's dense sensor network of one sensor per light fixture and ceiling-mounted positioning captures the most robust data in the industry. This data powers Enlighted's solutions for building space management, real-time location services, occupancy-based HVAC, lighting control, and more.

The Enlighted IoT Platform Advantage

- High density sensor layout in the building yields reliable location information
- Sensors powered via lighting fixtures
- Network infrastructure paid for by energy savings



- Supported web browsers: Chrome 78 or later
- Supported mobile apps: iOS 12.0 or later/Android 12 or later



How Enlighted Where Works

Each Enlighted tag broadcasts Bluetooth messages, which are received by the Enlighted sensors embedded in the fixtures. Using the tag location data captured by the sensors mounted in the ceiling and other information from the tag, the Where application tracks and records each tag's location as it moves through the building using advanced algorithms.

Interactive Dashboard Capabilities: When you need to make decisions based on detailed insights, the dashboard provides interactive charts and tables, allowing you to focus on staff and asset distribution by floors and departments, further filtered by category and tag status. View distribution by percentage to understand asset distribution patterns for determining how effectively assets are being utilized. View tag count by location to locate assets and redistribute staff where they might be needed, reducing the time lost in searching for equipment and staff.

Asset Categories and Tag Statuses: Manage assets by grouping them into categories and assigning tag statuses to equipment for easier organization and management. Apply filters dynamically based on category or tag status to search for equipment or staff and view them on floor maps.

Custom Fields: Allows administrators to select from a collection of available data fields and add it onto the tag details to capture as much information as possible about the tagged object.

Real-time Alerts: Real-time alerts can be configured to notify staff when an asset enters or leaves geofence areas, which are virtual boundaries around a physical area marked in the map. Alerts can also be generated based on category counts and duration of stay in the geofence area. Notifications can be sent directly to mobile devices or via email to help users stay up-to-the-minute on the asset activity in the building.

Replay Movement of Tags: The application also stores location data by date and time, which can be replayed on-demand on the map with several options for playback. The tag location data is also accessible via APIs, which can be used to drive operational insights and analytics.

Report Generation: Reports provide insights to both Live and Historical data based on filters such as departments, room types, tag category, tag status with options to customize, share, schedule reports to run at selected intervals, save, and view reports.

Data Privacy: The Where application stores the organization name, occupancy data, floor maps, real-time location of tags within the proximity of the sensors, and organizational facility information for providing services. The application tracks user login, logout events, user IP address, and application pages accessed by the users.

The Enlighted Where Advantage

- Spend less time searching for equipment and people
- Reduce loss of high-value assets
- Reduce unnecessary equipment purchases
- Optimize processes using location history
- Reduce capital expenditures
- Increase staff productivity

Features

- Precise live asset location and movement
- Configurable asset categories and tags statuses
- Powerful search across facilities
- Advanced dynamic filtering with custom tag statuses

Product Codes

WHR-LSP: License Subscription Pricing

Energy Manager

SPECIFICATION

The Enlighted Energy Manager provides a secure web-based interface to monitor, manage, and analyze energy savings and other data collected by the Enlighted Smart Sensor network. The Energy Manager translates data from the sensor network into detailed energy, temperature, and occupancy insights around the clock.

OVERVIEW

The Energy Manager (EM) stores, performs analysis, and provides visual reporting of sensor data. In addition to being the collection point for energy, occupancy, and environmental data captured by the Enlighted Smart Sensors, the Energy Manager provides a web-based user interface for lighting system management and optimizing building system performance.

The EM manages up to 1500 individual sensors. It can also manage and control up to 3,500 BACnet points, which are available for purchase through the Lighting BACnet software license.

FEATURES

Simplified Lighting Control Management: The EM configures and manages lighting behavior by adjusting software profiles while retaining lighting data for up to 36 months. It generates reports on lamp and fixture outages, carbon reduction, energy and financial savings.

Power Metering: By deploying various control strategies at individual fixture level, direct power metering provides data for comprehensive savings analysis.

Comprehensive Insight into Building System Performance: Automatic Demand Response (ADR) and Demand Response (DR) optimize operating costs and comply with energy efficiency and sustainability goals. Measure and identify under-utilized spaces by gaining insight into building usage patterns.

Standards-Based Communications Protocols: Industry standard communication protocols provide robust and mature capabilities. REST-based APIs support GET and POST requests and XML, JSON responses. BACnet/IP enables integration between the Enlighted lighting network and Building Management System (BMS). The EM can turn on or off the Bluetooth radio.

Data Security: AES 128-bit encryption for wireless data transmission and TLS encryption for TCP/IP along with the use of a 2048-bit certificate and SHA-256 Cipher enable the highest standards of Corporate Data Security requirements.

Data Privacy: The EM collects and stores occupancy data captured by the Enlighted sensors. The sensors cannot directly reference, distinguish or identify any natural person. The EM stores user's login and contact information including user name, email address, optional first and last names, tracks login and logout events, IP addresses, and application pages accessed by users. The EM also stores the organization's name, occupancy data, and floor plans.

Flexible Deployment: The server can be installed on an IT Corporate Network, dedicated Gateway Network, or as a stand-alone system. The intuitive graphical user interface is accessible via standard secure web browser, thus eliminating software downloading.

Title 24 Compliance: The Energy Manager simplifies the code compliance process by automatically setting profile parameter limits and automating certain tests that Title 24 requires. The software generates Title 24 compliance documents as the tests are evaluated and certified.



The Enlighted Energy Manager

Width	7.80"	198 mm
Height	1.65"	42 mm
Depth	5.71"	145 mm
Weight	2.64 lb	1.2 kg

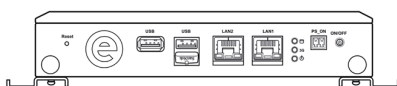
ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

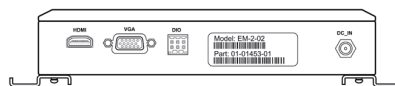
Job Number:

Product Codes:

- | | |
|--------------------------|--|
| <input type="checkbox"/> | EM-2-02:
EM with up to 1500 Sensors |
| <input type="checkbox"/> | EM-ZNS-01:
Add-on Single Zone Occ. |
| <input type="checkbox"/> | ENCL-EM/FAN:
EM and PoE Enclosure |

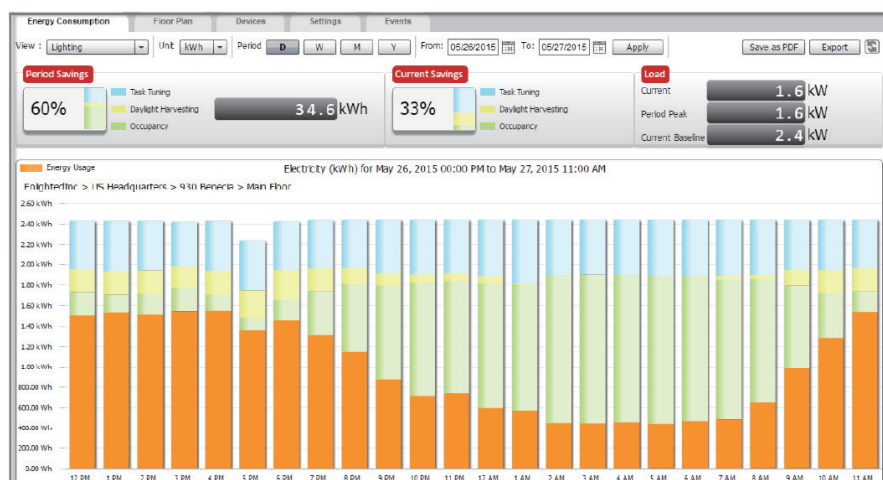


Front Panel



Rear Panel

ENERGY SAVINGS



MOUNTING

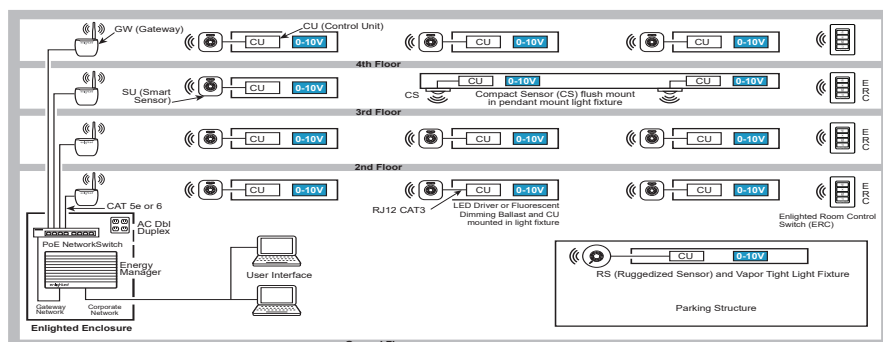
The Energy Manager is usually mounted in an electrical or telecom room in the Enlighted Enclosure with the PoE and a double duplex receptacle. RJ-45 connectors are included for the Enlighted system to connect to the Corporate and Gateway Network.

The Enlighted Enclosure

Width	20.18"	512 mm
Height	24.18"	614 mm
Depth	6.06"	154 mm

WIRING & OPERATIONS

The Energy Manager has two Ethernet ports: Eth0 and Eth1. The Gateway Network is connected to one of the Ethernet ports on the PoE Switch. The Corporate Network is connected to the client's IT network or the client's local computer. The software that resides in the Energy Manager can be accessed securely via a web browser, thus eliminating the need for clients to download any software.



TECHNICAL SPECIFICATIONS

Operating System: Linux-based
Web Client: Chrome, Firefox, IE 10+
Security: TCP/IP Standards-based
BACnet: BACnet/IP
Operating: 32° to 131° F / -0° to 55° C
Enclosure: Ruggedized aluminum
Power Supply input: 120/240V 60W
Power Supply output to EM: DC 12V, 19W

ORDERING INFORMATION

EM-2-02	Energy Manager with up to 1500 Sensors
EM-ZNS-01	Add-on License for a Single Zone Sensor for Occupancy
ENCL-EM/FAN	Enclosure for EM and POE

COMPLIANCE

Europe



United States



Canada



WARRANTY

5 years

View www.enlightedinc.com/limited-warranty-terms for complete terms and conditions

Enlighted Room Control

SPECIFICATION

The Enlighted Room Control (ERC) enables manual control of light fixtures through Enlighted's intelligent lighting control system.

OVERVIEW

The Enlighted Room Control provides the basic control functions of a standard wall switch with preset dimming capabilities without any additional wiring. The Enlighted Room Control enables you to select preset scenes so that groups of light fixtures behave in concert to achieve a lighting objective. The Enlighted Room Control gives you the flexibility to predefine up to six different scenes and many combinations of light levels that can be accessed at the push of a button.

FEATURES AND BENEFITS

Localized Microprocessor Control: Each Enlighted Room Control is a fully-fledged computing and communications device. The control communicates with Enlighted Smart Sensors wirelessly, enabling the sensor to make local decisions regardless of the network status.

Programmable: Scene configurations are defined for each Enlighted Room Control and are saved in the Enlighted Smart Sensor's memory during control commissioning. Scenes are easily configured and changed through the browser-accessible Enlighted Energy Manager™.

Code Compliant: For regions where building codes require that a manual-on/ auto-off switch be located in any enclosed space, the Enlighted Room Control fulfills this requirement.

Simple and Low-cost Installation: Designed to fit on a standard wall plate, the Enlighted Room Control can replace a standard wall switch, yet does not require any external power or special low voltage wiring. In locations without an existing switch, the Enlighted Room Control can be installed directly on the wall or over existing junction boxes.

Effortless Operation: Intuitive buttons enable occupants to brighten and dim lights, as well as cycle through lighting scenes and return to original settings. When a space has been unoccupied for a predetermined period of time, the Enlighted system reestablishes automatic control.

Standards-Based Networking and Security: The 802.15.4 compatible radio transmits messages in the 2.4GHz band while avoiding interference with any Wi-Fi or other networks. All messages are AES-128 encrypted to provide network security.

Minimal Air-time: The Enlighted Room Control transmits its messages in short bursts to Enlighted sensors, utilizing very little of the channel capacity and minimizing collisions with other network traffic.

Minimal Maintenance: With an expected battery life of more than five years, the Enlighted Room Control has minimal maintenance requirements.



The Enlighted Room Control (ERC)

L	2.61"	66.4 mm
W	1.29"	32.7 mm
H	.45"	11.5 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

<input type="checkbox"/>	WS-2-00
<input type="checkbox"/>	WS-2-00-IL



BRIGHT

Tap to turn lights on
Press and hold to gradually brighten

DIM

Tap to turn lights off
Press and hold to gradually dim

SCENES

Press for customized room scenes

AUTO

Press to reset lights to original levels

INSTRUCTIONS FOR WALL MOUNTING

1. Align the Enlighted Room Control within the back plate, with top button arrow pointing up. Affix to the control by firmly tightening both captive screws.
2. Align spacers to the control. Place spacers against the back of the control—one at the top and one at the bottom—and align the spacers with the oval screw hole of the mounting plate. Ensure flush side of the spacers face the wall. Hold in place against desired wall location.
3. Screw on back plate using tapping screws provided.
4. Snap on wall plate with arrow pointing up.

TECHNICAL SPECIFICATIONS

Action: Four push buttons;
Up to six software-configurable scenes
Actuations: Rated for 50,000 actuations
Power: Battery-powered: CR2032
Battery Life: 5 years based on average usage
Max Fixtures Per Control: 100
Interoperability: Enlighted Sensors and Gateways
Operating Temp.: 32° to 122° F / 0° to 50° C
Enclosure: Recyclable ABS
Wireless Standards: IEEE 802.15.4
Radio Frequency: 2400-2483.5 MHz
Wireless Range: 150 ft. (46 m) radius open range
Encryption: AES-128

ORDERING INFORMATION

WS-2-00	Enlighted Room Control
WS-2-00-IL	Enlighted Room Control for Independent Lighting/Enlighted One

WARRANTY

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

COMPLIANCE

Europe



United States



Canada



Midrange Energy Manager

SPECIFICATION

The Enlighted Midrange Energy Manager, sourced from Lanner and certified by Enlighted, provides a secure web-based interface to monitor, manage, and analyze energy savings and other data collected by the Enlighted Smart Sensor network. The Energy Manager translates data from the sensor network into detailed energy, temperature, and occupancy insights around the clock.

OVERVIEW

The Midrange Energy Manager stores, performs analysis, and provides visual reporting of sensor data. In addition to being the collection point for energy, occupancy, and environmental data captured by the Enlighted Smart Sensors, the Energy Manager provides a web-based user interface for lighting system management and optimizing building system performance.

The Midrange Energy Manager (EM) manages up to 5000 individual sensors. It can also manage and control up to 7000 BACnet points, which are available for purchase through the Lighting BACnet software license.

FEATURES

Simplified Lighting Control Management: The EM configures and manages lighting behavior by adjusting software profiles while retaining lighting data for up to 36 months. It generates reports on lamp and fixture outages, carbon reduction, energy and financial savings.

Power Metering: By deploying various control strategies at individual fixture level, direct power metering provides data for comprehensive savings analysis.

Comprehensive Insight into Building System Performance: Automatic Demand Response (ADR) and Demand Response (DR) optimize operating costs and comply with energy efficiency and sustainability goals. Measure and identify under-utilized spaces by gaining insight into building usage patterns.

Standards-Based Communications Protocols: Industry standard communication protocols provide robust and mature capabilities. REST-based APIs support GET and POST requests and XML, JSON responses. BACnet/IP enables integration between the Enlighted lighting network and Building Management System (BMS). The EM can turn on or off the Bluetooth radio.

Data Security: AES 128-bit encryption for wireless data transmission and TLS encryption for TCP/IP along with the use of a 2048-bit certificate and SHA-256 Cipher enable the highest standards of Corporate Data Security requirements.

Data Privacy: The EM collects and stores occupancy data captured by the Enlighted sensors. The sensors cannot directly reference, distinguish or identify any natural person. The EM stores user's login and contact information including user name, email address, optional first and last names, tracks login and logout events, IP addresses, and application pages accessed by users. The EM also stores the organization's name, occupancy data, and floor plans.

Flexible Deployment: The server can be installed on an IT Corporate Network, dedicated Gateway Network, or as a stand-alone system. The intuitive graphical user interface is accessible via standard secure web browser, thus eliminating software downloading.

Title 24 Compliance: The Midrange Energy Manager simplifies the code compliance process by automatically setting profile parameter limits and automating certain tests that Title 24 requires. The software generates Title 24 compliance documents as the tests are evaluated and certified.



The Midrange Energy Manager

Width	7.80"	198 mm
Height	1.65"	42 mm
Depth	5.71"	145 mm
Weight	2.64 lb	1.2 kg

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

☐ EM-2-03:EM with up to 5000 Sensors

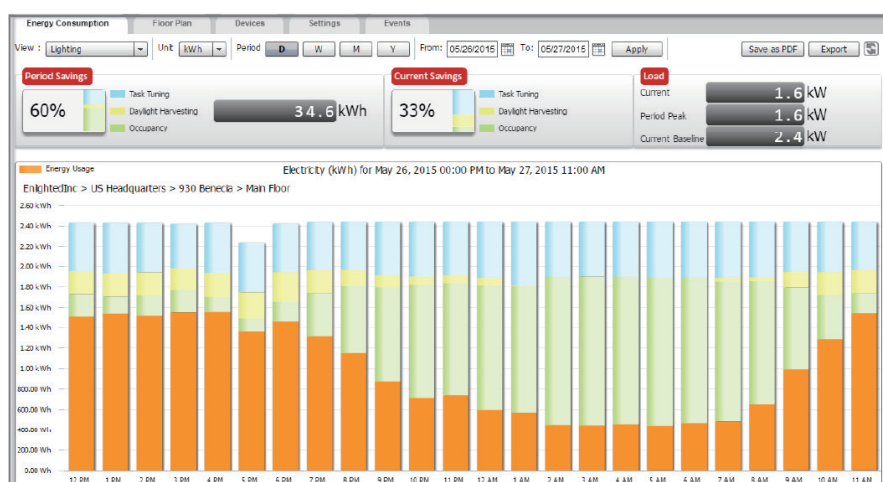
☐ EM-SW-1000: Add-on 1000 Sensors

☐ EM-SW-1: Add-on one Sensor

☐ EM-ZNS-01: Add-on Single Zone Occ.

☐

ENERGY SAVINGS



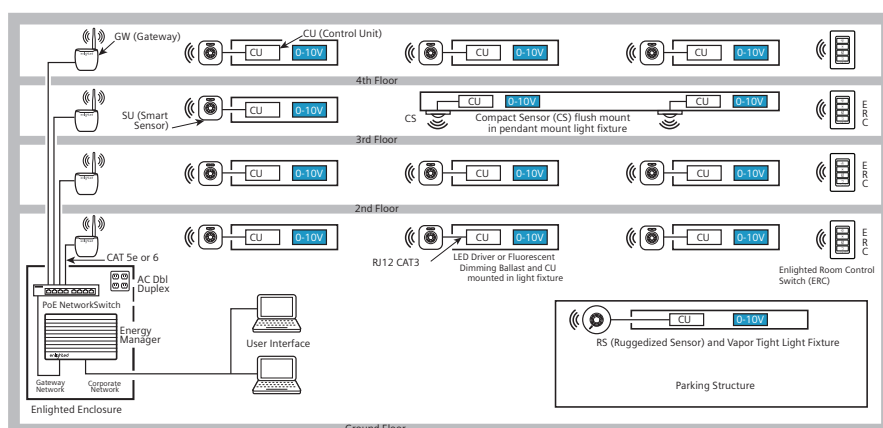
Midrange Energy Manager

MOUNTING

The Midrange Energy Manager is usually mounted in an electrical or telecom room in an Enlighted Enclosure with the PoE and a double duplex receptacle. RJ-45 connectors are included for the Enlighted system to connect to the Corporate and Gateway Network.

WIRING & OPERATIONS

The Midrange Energy Manager has two Ethernet ports: Eth0 and Eth1. The Gateway Network is connected to one of the Ethernet ports on the PoE Switch. The Corporate Network is connected to the client's IT network or the client's local computer. The software that resides in the Energy Manager can be accessed securely via a web browser, thus eliminating the need for clients to download any software.



TECHNICAL SPECIFICATIONS

Operating System: Linux-based
Web Client: Chrome, Firefox, IE 10+
Security: TCP/IP, Standards-based
BACnet: BACnet/IP
Operating: 32° to 131° F / -0° to 55° C
Enclosure: Ruggedized aluminum
Power Supply input: 120/240V 60W
Power Supply output to EM: DC 12V, 19W

ORDERING INFORMATION

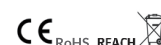
EM-2-03	Midrange EM with up to 5000 Sensors
EM-SW-1000	Add-on License for 1000 Sensors
EM-SW-1	Add-on License for one Sensor
EM-ZNS-01	Add-on License for a Single Zone Sensor for Occupancy

COMPLIANCE

Europe

United States

Canada



WARRANTY

1 year

Fixture Mount Control Unit

SPECIFICATION

The Enlighted Fixture Mount Control Unit interfaces with Enlighted sensors and a ballast or LED driver to intelligently control light behavior. The Control Unit also contains a power metering chip that enables the Enlighted control network to measure power in real time as well as energy consumption over time.



OVERVIEW

The Enlighted Fixture Mount Control Unit is typically wired to the fixture's LED driver or dimming ballast to control light levels with high reliability and security. It also connects to the Enlighted sensor units which contain microprocessors and sensor arrays that integrate occupancy, daylight, and temperature sensing. Customizable software profiles that drive each sensor unit support both energy efficiency and occupant comfort goals. The sensor unit continuously takes occupancy, vacancy and light readings; it also interprets this data and instructs the Enlighted Control Unit to adjust illumination levels accordingly.

FEATURES AND BENEFITS

Real-Time Measurement and Verification of Energy Savings: Measures baseline wattage and energy consumption per fixture.

Simple and Low-Cost Installation: Securely fits within a light fixture cavity for quick installation at the factory or in the field, enabling streamlined project installation.

Flexible Configuration: Allows control of multiple low-wattage fixtures with a single unit. Maximum output current is 5.0A, subject to inrush current peak maximum.

Compatibility with Control Unit (CU-3E): With compatible mechanical footprint, the Fixture Mount Control Unit provides backward-compatibility with the CU-3E Control Unit.

Latching Relay to Reduce Standby Power: Minimizes the standby power consumption of each unit to less than 1W.

Fixture Outage Reports: Captures performance data via an embedded power metering chip. The Enlighted control network generates fixture outage reports to reduce maintenance costs and increase occupant safety and comfort.

The Enlighted Enclosure

L	6.3"	160 mm (with tab)
L	4.8"	124 mm (without tab)
W	1.18"	30 mm
H	0.98"	25 mm
Weight	2.3 oz	65 grams

Product Codes

Job Name:

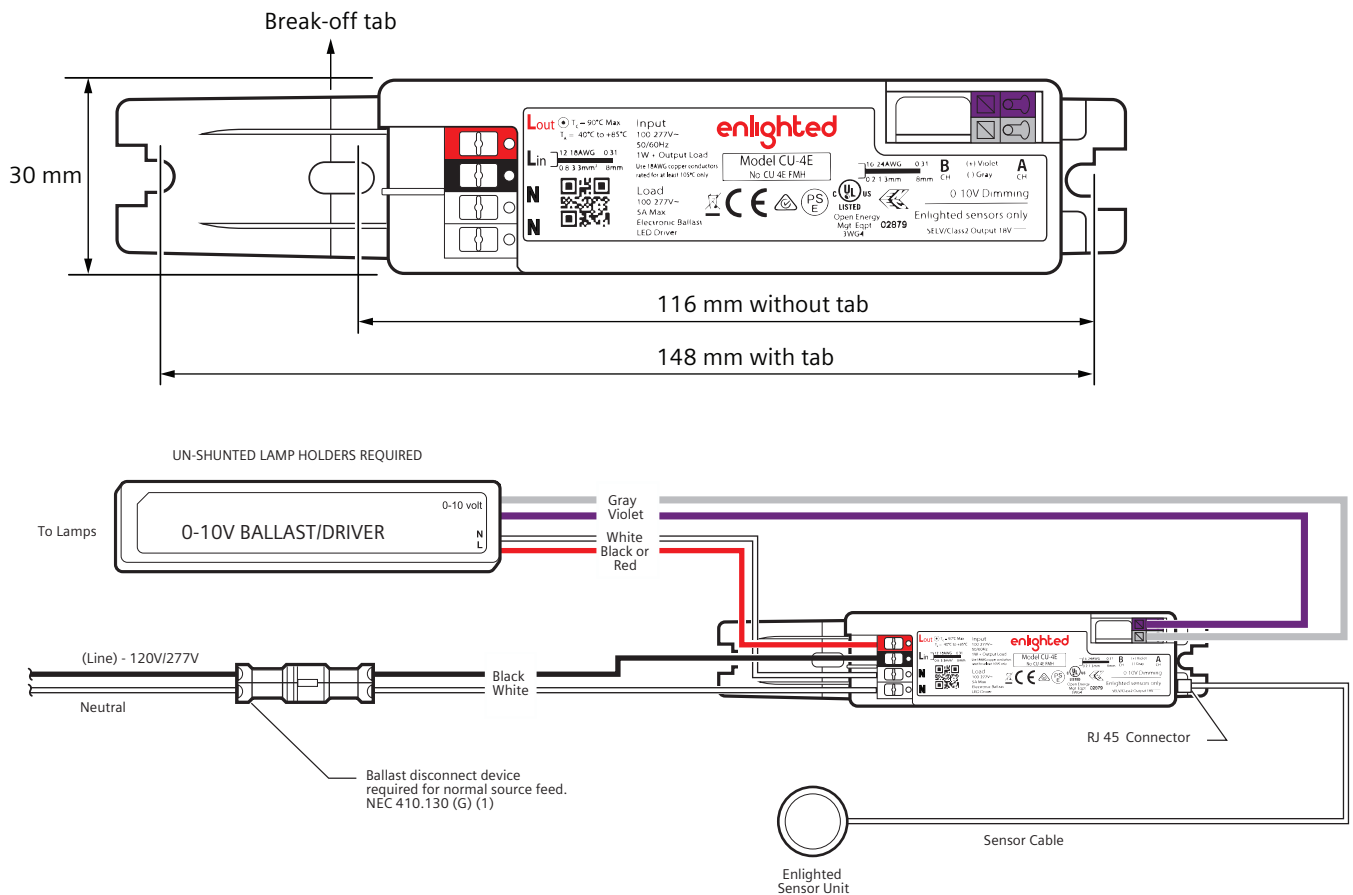
Job Number:

Product Codes:

<input type="checkbox"/>	CU-4E-FMH
<input type="checkbox"/>	CBL-5E-CU4-30N
<input type="checkbox"/>	CBL-5E-CU4-7F
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

MOUNTING

The Fixture Mount Control Unit (CU-4E-FMH) is designed to be mounted inside fixtures and NEMA rated enclosures. Sheet metal screws are typically used to mount the Control Unit in these environments. The dimensions for screw hole mounting are shown below. The full-length CU-4E-FMH can be mounted in place of the CU-3E, or the break-off tab can be removed to create a smaller form factor for a reduced footprint.



TECHNICAL SPECIFICATIONS

Operating: -40° to 185° F
-40° to 85° C ambient

Enclosure: Polycarbonate

Input Voltage: 100 to 277 VAC

Input Frequency: 50/60 Hz

Power Wires: Push-in style 12–18 AWG solid/stranded

Dimmer Control Output: Push-in style 16–24 AWG solid/stranded

Power Output Specifications:

5.0 A maximum continuous:

5.0 A @ 120 V = 600 Watts

5.0 A @ 277 V = 1385 Watts

Load Inrush current not to exceed

NEMA-410 limits:

192 A peak @ 120 V

320 A peak @ 277 V

ORDERING INFORMATION

CU-4E-FMH	Fixture Mount
CBL-5E-CU4-30N	Control Unit 30 inch Sensor Cable for CU-4 and IoT Ready™ drivers
CBL-5E-CU4-7F	7 foot Sensor Cable for CU-4 and IoT Ready™ drivers

Consult your Enlighted Sales Representative for a complete list of compatible cables

ENVIRONMENT

For dry conditions only

COMPLIANCE

United States



Canada



Europe



WARRANTY

5 years

View www.enlightedinc.com/limited-warranty-terms for complete terms and conditions

Fixture Mount Control Unit for DALI Drivers



SPECIFICATION

The Fixture Mount Control Unit for DALI drivers interfaces with an Enlighted sensor and a DALI ballast or LED driver to intelligently control light behavior. The Control Unit also contains a power metering subsystem that enables the Enlighted control network to measure power in real time as well as energy consumption over time.

OVERVIEW

The Fixture Mount Control Unit for DALI drivers is typically wired to the fixture’s LED driver or dimming ballast to control light levels with high reliability and security. It also connects to an Enlighted Sensor Unit (SU) via the Enlighted Sensor Interface. The SU integrates occupancy, daylight, temperature sensing, and implements customizable software profiles that support both energy efficiency and occupant comfort goals. The SU continuously takes occupancy, vacancy and light readings; it also interprets this data and instructs the Fixture Mount Control Unit for DALI drivers to adjust illumination levels accordingly.

FEATURES AND BENEFITS

Real-Time Measurement and Verification of Energy Savings: Measures baseline wattage and energy consumption per fixture.

Simple and Low-Cost Installation: Securely fits within a light fixture cavity for quick installation at the factory or in the field, enabling streamlined project installation.

Flexible Configuration: Allows control of multiple low-wattage fixtures with a single unit. The maximum output current is 4.5A, subject to inrush current peak maximum.

Integrated DALI Power Supply: Enables simple luminaire wiring and reduces space requirements.

Compatible DALI Interface: Compatible with DALI-certified drivers and ballasts, the Fixture Mount Control Unit for DALI supports up to four DALI drivers with single channel dimming control. The product is subject to continuous current and inrush currents.

Fixture Outage Reports: Captures performance data via an embedded power metering chip. The Enlighted control network generates fixture outage reports to reduce maintenance costs and increase occupant safety and comfort.



Fixture Mount Control Unit for DALI Drivers

L	5.31"	135 mm
W	2.16"	55 mm
H	1.06"	27 mm
Weight	4 oz	113 grams

SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

☐ CU-4D-FM

☐ CBL-5E-CU4-30N

☐ CBL-5E-CU4-7F

☐

☐

☐

Gateway

SPECIFICATION

The Enlighted Gateway is the intermediary device between the Enlighted Energy Manager and the Enlighted control network. The Gateway relays energy, environmental and occupancy data captured by the Enlighted Smart Sensors to the Energy Manager for analysis and reporting. It also communicates configuration changes from the Energy Manager to sensors and other network devices.

OVERVIEW

The Enlighted Gateway (GW-2-01) aggregates wireless traffic between the network of Enlighted Smart Sensors and the Energy Manager. Each Gateway sends and receives data for up to 125 individual sensors. It uses the IEEE 802.15.4 protocol for wireless communication with the sensors and a wired TCP/IP network for communication with the Enlighted Energy Manager if it is located on premise.

FEATURES

Data Security: AES 128-bit encryption for wireless data transmission and SSL encryption for TCP/IP data transmission enabled for data security.

Data Privacy: Data is transferred from the Enlighted sensors to the Energy Manager and is not stored in the Gateway.

Scalability: Each Gateway can individually support up to 125 individual sensors. System architecture enables effective scalability to very large applications.

Standards-based Communication Protocols: Use of industry standard communication protocols provides robust and mature capabilities.

Operating Range: Each Gateway can operate at 150 ft. radius (46 m) open range in open ceiling installation, and individual sensor units can function as repeaters to extend operating range.



The Enlighted Gateway

L	3.01"	76.5 mm
W	4.01"	101.9 mm
H	1.38"	35.0 mm
Weight	4.23 oz	120 grams

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

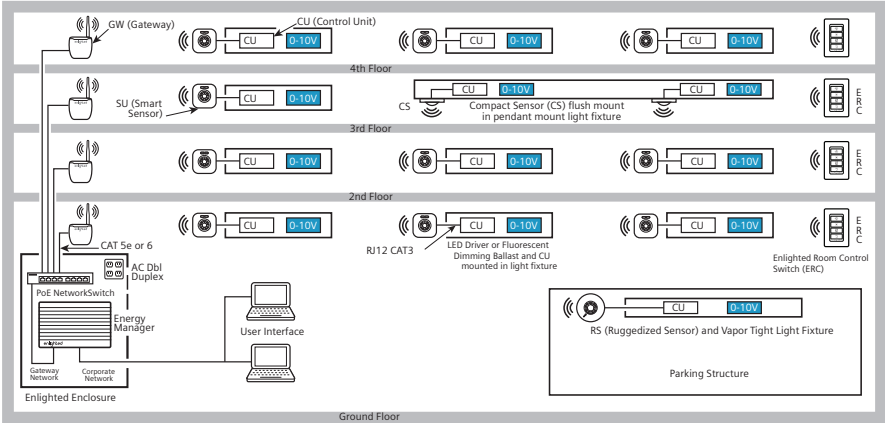
Job Number:

Product Codes:

☐ GW-2-01

WIRING AND OPERATIONS

One or more gateways may be deployed on each floor to relay information between the sensors and the Enlighted Energy Manager. The Gateway device mounts to the ceiling at the same height as an individual sensor device. The antenna is then pointed down. CAT5e cable is run from the Enlighted Gateway to the Enlighted PoE switch (RJ-45 connector not shown).



TECHNICAL SPECIFICATIONS

Radio Frequency: 2400–2483.5 MHz
RF TX Output Power: 0 dBm (average)
Wireless Protocol: IEEE 802.15.4 compliant
Wireless Range: 150 ft. radius (46 m)
open range
Operating: 32° to 122° F / 0° to 50° C
Connector Type: RJ-45
Enclosure: Recyclable ABS
Input Voltage: PoE / 48 V

ORDERING INFORMATION

GW-2-01 Enlighted Gateway

WARRANTY

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

COMPLIANCE

Europe



United States



Canada



Micro Sensor

SPECIFICATION

The Enlighted Micro Sensor 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 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 in LED and fluorescent light fixtures.



The Enlighted Micro Sensor

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:

<input type="checkbox"/>	SU-5E-[IoT/CL/IL
<input type="checkbox"/>	SU-CL-IoT-UPG
<input type="checkbox"/>	SU-IL-IoT-UPG
<input type="checkbox"/>	TMC-SU-5E
<input type="checkbox"/>	CPL-RJ45
<input type="checkbox"/>	CBL-5E-CU4-30N
<input type="checkbox"/>	CBL-5E-CU4-7F
<input type="checkbox"/>	CBL-5E-CU4-12N
<input type="checkbox"/>	CBL-5E-5W-30N
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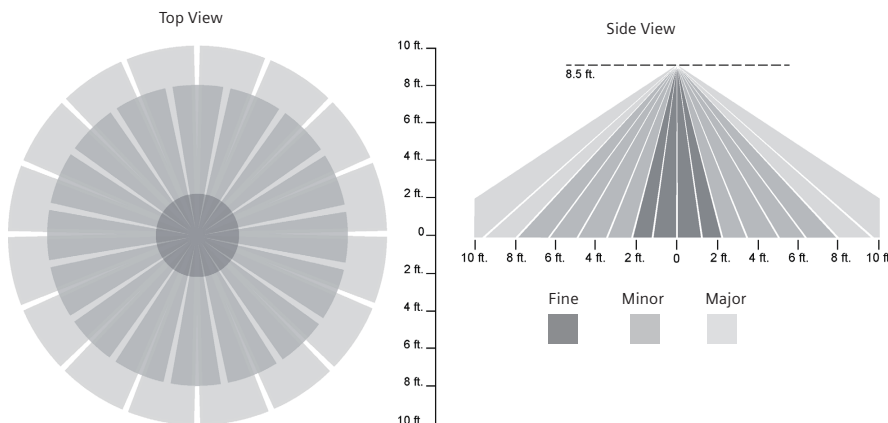
MOUNTING

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.

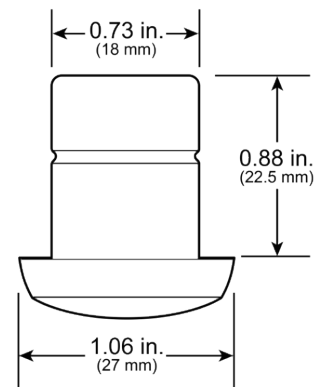
SENSOR COVERAGE PATTERNS

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.

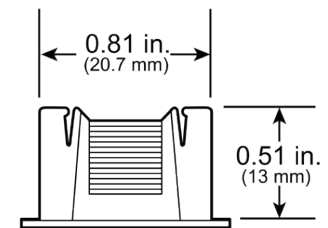
Ceiling Height	Fine Motion (Radius)	Minor Motion (Radius)	Major Motion (Radius)
8.5 ft/2.6 m	2.3 ft/0.7 m	8 ft/2.4 m	10 ft/3.0 m
15 ft/4.6 m	4.0 ft/1.2 m	10 ft/3.0 m	18 ft/5.5 m



Micro Sensor



Carrier



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
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-5E-xxx*	Micro Sensor (*see Product codes)
SU-CL-IoT-UPG	Connected Lighting to IoT Sensor Upgrade
SU-IL-IoT-UPG	Independent Lighting to IoT Sensor Upgrade
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



United States



Canada



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

Bluetooth: The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Enlighted Inc. is under license. Other trademarks and trade names are those of their respective owners.

Enterprise Energy Manager

SPECIFICATION

The Enlighted Enterprise Energy Manager (EEM), sourced from Dell and certified by Enlighted, provides a secure web-based interface to monitor, manage, and analyze energy savings and other data collected by the Enlighted Smart Sensor network. The EEM translates data from the sensor network into detailed energy, temperature, and occupancy insights around the clock.

OVERVIEW

The Enterprise Energy Manager provides the data analysis for all data harvested by the Enlighted network devices, such as sensors. In addition to being the collection point for the energy, occupancy, and environmental data captured by Enlighted Smart Sensors, the EEM provides a web-based user interface for lighting system management and optimizing building system performance.

The EEM manages up to 10,000 sensors with BACnet and 18,000 sensors without BACnet. With the Lighting BACnet software license available for purchase, the EEM can manage and control up to 35,000 BACnet points.

FEATURES

Simplified Lighting Control Management: The EEM configures and manages lighting behavior by adjusting software profiles while retaining lighting data for up to 36 months. It generates reports on lamp and fixture outages, carbon reduction, energy and financial savings.

Power Metering: By deploying various control strategies at individual fixture level, direct power metering provides data for comprehensive savings analysis.

Comprehensive Insight into Building System Performance: Automatic Demand Response (ADR) and Demand Response (DR) optimize operating costs and comply with energy efficiency and sustainability goals. Measure and identify under-utilized spaces by gaining insight into building usage patterns.

Standards-Based Communications Protocols: Industry standard communication protocols provide robust and mature capabilities. REST-based APIs support GET and POST requests and XML, JSON responses. BACnet/IP enables integration between the Enlighted lighting network and Building Management System (BMS). The EEM can turn on or off Bluetooth 4.0 Low Energy (BLE) beacons.

Data Security: AES 128-bit encryption for wireless data transmission and TLS encryption for TCP/IP along with the use of a 2048-bit certificate and SHA-256 Cipher enable the highest standards of Corporate Data Security requirements.

Data Privacy: The EEM collects and stores occupancy data captured by the Enlighted sensors. The sensors cannot directly reference, distinguish or identify any natural person. The user's details such as login information, login and logout events, IP address, and application pages accessed by users along with the organization's name, occupancy data, and floor plans are all stored in the EEM.

Flexible Deployment: The server can be installed on a Corporate Network, dedicated Gateway Network, or as a stand-alone system. The intuitive graphical user interface is accessible via standard secure web browser, thus eliminating software downloading.

Title 24 Compliance: The EEM simplifies the code compliance process by automatically setting profile parameter limits and automating certain tests that Title 24 requires. The software generates Title 24 compliance documents as the tests are evaluated and certified.



Enterprise Energy Manager

Width	19.00"	482.6 mm
Depth	23.9"	607.1 mm
Height	1.7"	43.2 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

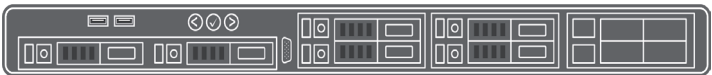
☐ EM-3-01:EEM with up to 5000 Sensors

☐ EM-SW-1000: Add-on 1000 Sensors

☐ EM-SW-1: Add-on one Sensor

☐ EM-ZNS-01: Add-on Single Zone Occ.

☐

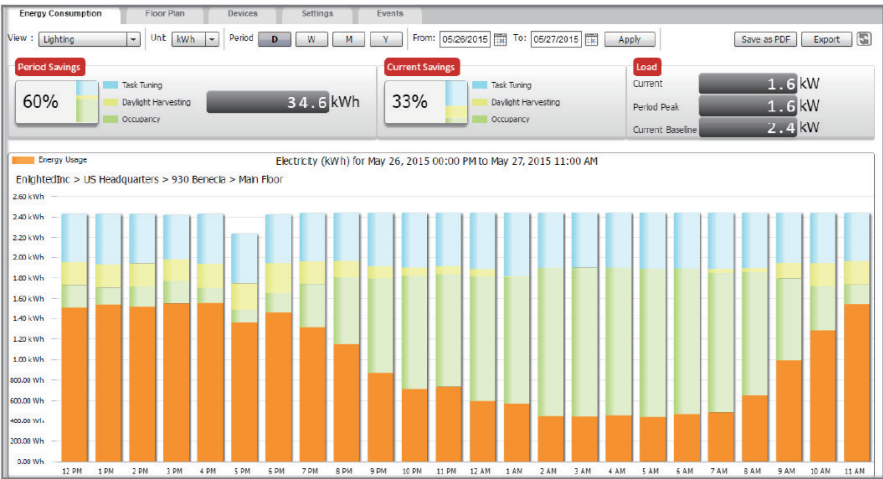


Front View without Bezel



Back View

ENERGY SAVINGS



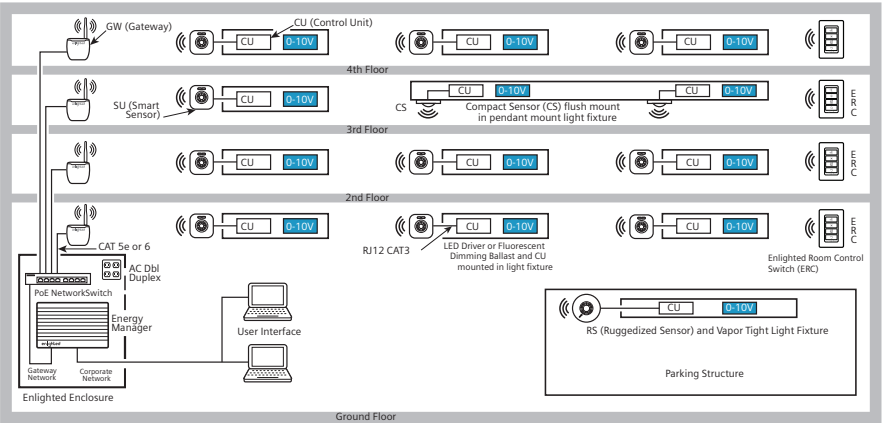
Midrange Energy Manager

MOUNTING

The Enterprise Energy Manager is usually placed in the customer's data center. RJ-45 connectors are included for the Enlighted system to connect to the Corporate network and Gateway network.

WIRING & OPERATIONS

The Enterprise Energy Manager has two Ethernet ports: Eth0 and Eth1. The Gateway network is connected to one of the Ethernet ports on the PoE Switch. The Corporate network from the Ethernet port is connected to the client's IT network or the client's local computer. The software that resides in the Enterprise Energy Manager can be accessed securely via a web browser, thus eliminating the need for clients to download any software.



TECHNICAL SPECIFICATIONS

Operating System: Linux-based
Web Client: Chrome, Firefox, IE 10+
Security: TCP/IP, Standards-based
BACnet: BACnet/IP
Operating: 50° to 95° F / 10° to 35° C
Enclosure: Ruggedized aluminum
Power Supply input: 100-240 VAC/
7.4-3.7A
Power Supply Output: 350W/550W AC

ORDERING INFORMATION

EM-3-01	EEM with up to 5000 Sensors
EM-SW-1000	Add-on License for 1000 Sensors
EM-SW-1	Add-on License for one Sensor
EM-ZNS-01	Add-on License for a Single Zone Sensor Occupancy

COMPLIANCE

Europe
United States
Canada



WARRANTY

1 year

Ruggedized Sensor

SPECIFICATION

The Enlighted Ruggedized Sensor 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. In addition, the sensor supports Bluetooth® Low Energy communication with tags and other BLE devices.

OVERVIEW

The Ruggedized Sensor 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 in LED and fluorescent light fixtures.



The Enlighted Ruggedized Sensor

Dia.	3.54"	90.0 mm
H	1.16"	29.5 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

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<input type="checkbox"/>	SU-5S-LRB-[IoT/CL/IL]
<input type="checkbox"/>	SU-CL-IoT-UPG
<input type="checkbox"/>	SU-IL-IoT-UPG
<input type="checkbox"/>	CPL-RJ45
<input type="checkbox"/>	CBL-RJ45-RJ45-7F
<input type="checkbox"/>	CBL-RJ45-5W-7F
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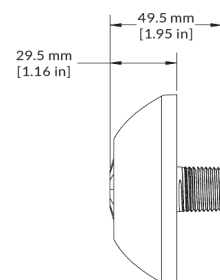
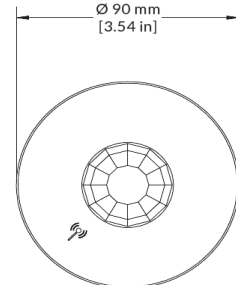
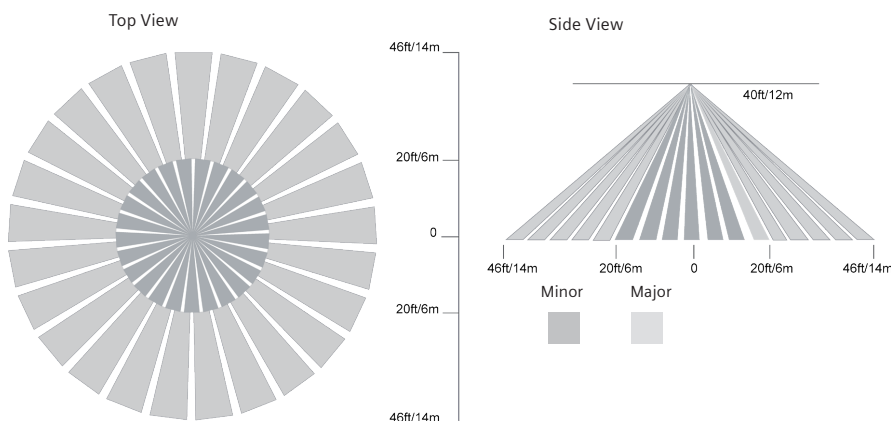
MOUNTING

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



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
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* High Bay Sensor (White)
 SU-5S-HRB-xxx* High Bay Sensor (Bronze)
 SU-5S-LRW-xxx* Standard Sensor (White)
 SU-5S-LRB-xxx* Standard Sensor (Bronze)
 (*see Product codes)
 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 O
 Driver Cable

COMPLIANCE

Europe



United States



Canada



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

Bluetooth: The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Enlighted Inc. is under license. Other trademarks and trade names are those of their respective owners.

Surface Mount Sensor

SPECIFICATION

The Enlighted Surface Mount Sensor is designed for indoor applications with high ceilings such as warehouses, atriums, and manufacturing facilities. 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 Surface Mount Sensor is a complete sensing and lighting control node powered from its attached light fixture. Sensor information combined with a configurable behavior profile makes the Surface Mount Sensor an integral component of an intelligent lighting control and sensing solution. 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 profiles for each fixture are wirelessly communicated at system setup and stored for 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 ambient and temperature sensing support 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 in LED and fluorescent fixtures.



The Enlighted Surface Mount Sensor

L	3.46"	88 mm
W	3.46"	88 mm
H	1.18"	30 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

<input type="checkbox"/>	SU-5S-H-[IoT/CL/IL]
<input type="checkbox"/>	SU-CL-IoT-UPG
<input type="checkbox"/>	SU-CL-IoT-UPG
<input type="checkbox"/>	CPL-RJ45
<input type="checkbox"/>	CBL-RJ45-RJ45-7F
<input type="checkbox"/>	CBL-RJ45-5W-7F
<input type="checkbox"/>	BTTN-SU-2-00
<input type="checkbox"/>	BRKT-SU-2-00

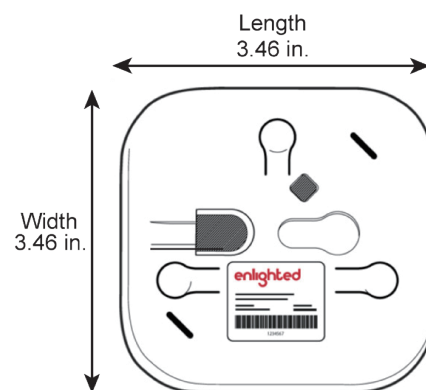
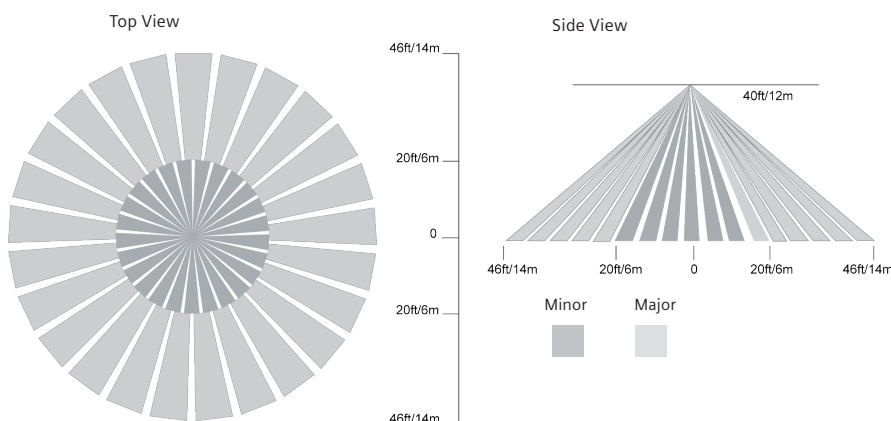
MOUNTING

The Surface Mount Sensor comes with a nylon threaded screw for mounting in acoustical tile or drywall ceilings. Pendant button mount and flat metal bracket mount options are available separately.

SENSOR COVERAGE PATTERNS

The Enlighted Surface Mount 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 Surface Mount 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)
20 ft/6 m	10 ft/3 m	23 ft/7 m
40 ft/12 m	20 ft/6 m	46 ft/14 m



TECHNICAL SPECIFICATIONS

Motion Sensing: Digital Passive IR
Photosensor: Light Pipe/Photosensor Array
Enclosure: Recyclable ABS
Type: Closed Loop Light Sensor
Operating Temp: 32° to 122° F/0° to 50° C
Max. Install Height: 50 ft/15.25 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-H-xxx*	Surface Mount Sensor (*see Product codes)
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
BTTN-SU-2-00	Pendant Button Mount
BRKT-SU-2-00	Bracket Mount

COMPLIANCE

Europe
 United States
 Canada

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

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Surface Sensor USB

SPECIFICATION

The Enlighted Surface Sensor, USB, placed under each open-office workspace, detects when the desk is in use, providing users with real-time desk availability. The Surface Sensor is a new variation of our Gen 5 sensor optimized for easy deployment and tuned for placement under desks in a minimally-sized package.

OVERVIEW

The Surface Sensor, USB, is a complete sensing node powered by a low voltage power source. The sensor incorporates an optical Fresnel lens with a blinder cover that restricts the sensor's field of view to avoid false detection of motion near the desk. An innovative mount-based design or an adhesive strip included in the kit supports easy installation and maintenance.

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
- 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.



Surface Sensor, USB

L	2.0"	52.9 mm
W	0.5"	14.7 mm
Depth	0.4"	10.9 mm

ENLIGHTED SPECIFICATION SUBMITTAL

Job Name:

Job Number:

Product Codes:

☐ SU-5i-USB-IoT

☐ BRKT-SU5i-50

☐ API-RTO-DSK-A-01

☐

☐

☐

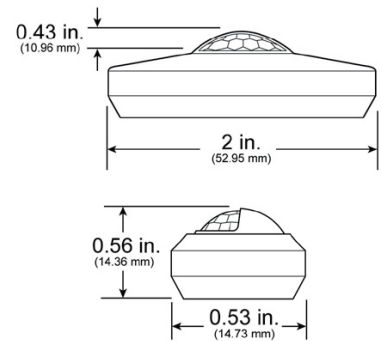
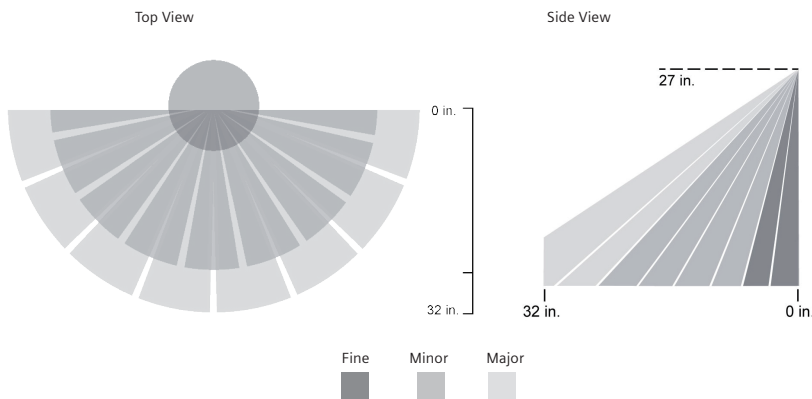
MOUNTING

For a typical 27" height desk, mount the sensor to the underside of the desk 15-26" from the front edge of the desk and at least 5" from the rear edge of the desk. Install the sensor parallel to the front edge of the desk using either the adhesive tape or the mount shipped with the sensor. After installation, the sensor lens must be facing the desk occupant.

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.

Desk Height	Major Motion (Radius)
27"	32"



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
BRKT-SU5I-50*
API-RTO-DSK-A-01

Surface Sensor, USB
Mount Bracket
Desk Occupancy API

COMPLIANCE

Europe

CE RoHS REACH

United States

FC UL LISTED

Canada

UL LISTED

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.

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