



Transformative Lighting

A Flexible Path From Building Automation to IoT Integration

In an era where investments in the IoT ecosystem are anticipated to surpass \$1 trillion by 2026, the shift toward smart buildings has transformed from a mere advancement to an essential move for maintaining competitiveness. The integration of optimized building and operational automation fosters a powerful synergy that not only reduces operational costs but also significantly enhances energy efficiency, elevates employee productivity, and strengthens security measures. Regardless of where an organization is on this journey, Enlighted offers flexible solutions that provides a path to smart buildings, meeting the unique needs of each organization.

IoT Infrastructure

Enlighted's IoT infrastructure not only elevates operational efficiency to new heights but also opens the door to future advancements that promise to revolutionize the way spaces are utilized and managed.

Utilizing the advanced capabilities of patented sensors embedded in the Enlighted Connected Lighting Network, the infrastructure achieves unparalleled monitoring of people, movement, and activities throughout any building. These sensors, which gather data 65 times a second, channel insights into a secure database. This database fuels a suite of sophisticated applications, creating an ecosystem that significantly enhances the experience of building occupants and simplifies the complex challenges facility operators face.

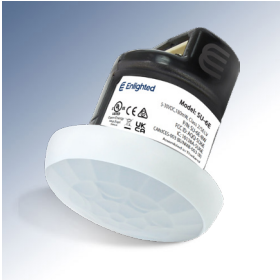
Connected Lighting

Unlock the comprehensive potential of Enlighted Connected Lighting, a state-of-the-art lighting control system that offers energy savings, advanced temperature control, and remains cost-effective and scalable in anticipation of future IoT enhancements. Deployment options are varied, catering to your facility's specific layout, usage, and requirements:

- **Smart Sensors:** Deploying smart sensors alone offers a straightforward, scalable approach to upgrading to full IoT capabilities. These sensors autonomously manage lighting based on occupancy and ambient light, optimizing energy usage and reducing costs. This option is particularly suited for new construction or spaces where simplicity and future scalability are priorities.
- **NEW! Radio Modules and Smart Sensors:** This setup pairs smart sensors with radio modules to create a robust wireless network throughout the building, making it an ideal choice for situations demanding flexible installations and minimal disturbances. Strategic grouping of sensors and radio modules ensures network effectiveness.
- **Value Engineering:** This approach combines traditional wiring with smart sensors for an advanced lighting system responsive to occupancy and environment. This hybrid method is designed with the intent to enhance energy efficiency and reduce overall cost of system implementation.

Enlighted Indoor Advanced Sensors

Enlighted Sensors are the key to transforming light fixtures into wireless IoT-enabled building intelligence solutions. By measuring ambient light, motion (PIR), energy consumption, and temperature, along with providing Bluetooth® capabilities and wireless connectivity, Enlighted Sensors continuously capture robust, real-time data in the building.



Micro Sensor

The Enlighted Micro Sensor, in either a 2-wire adaptor or 8-pin configuration, is our fifth-generation sensor. This lighting sensor advances lighting automation, with integrated wireless communications for data transmission and remote configuration, as well as autonomous fixture-level control.



NEW! Radio Module

The Enlighted Radio Module integrates with its sensor network wirelessly, facilitating distributed control. Equipped with advanced processing capabilities and a dual-radio system. Offers increased flexibility in system design and deployment – a marked enhancement over traditional field wiring.



Surface Sensor

The Surface Sensor is designed for quick and easy installation directly on workplace surfaces, such as conference room ceilings or under desks, and is powered by a standard USB interface, making the deployment completely independent of lighting systems.



High Bay Sensor

The High Bay Sensor, available in either an 8-pin or 2-wire configuration, is designed for indoor applications with high ceilings, such as warehouses, atriums, and manufacturing facilities.

A Single Sensor, Multiple Dimensions



Temperature

Separate ambient sensing detects shifts in temperature.



Motion

A digital passive Infrared (PIR) sensor supports precise motion identification while minimizing false detection.



Light

Light-level schedules, preferences, and behavior profiles are locally stored to ensure continuous operation.



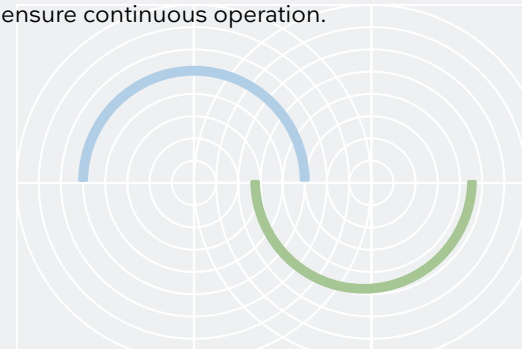
Power

Enlighted Control Units, via the serial interface, capture energy consumption data.



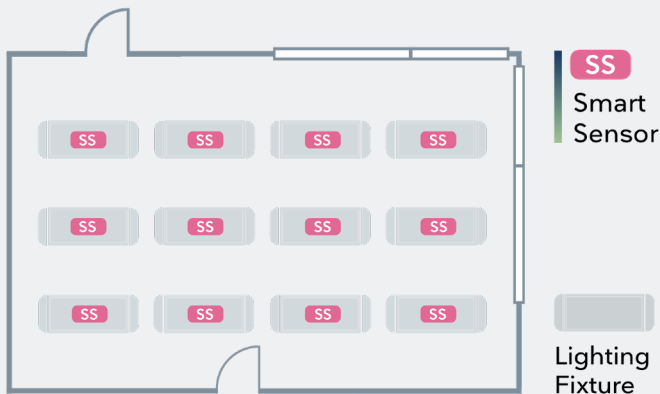
Bluetooth® LE

A BLE radio allows the sensor to receive and transmit beacons with lighting control devices and other sensors.



Multiple Ways to Deploy

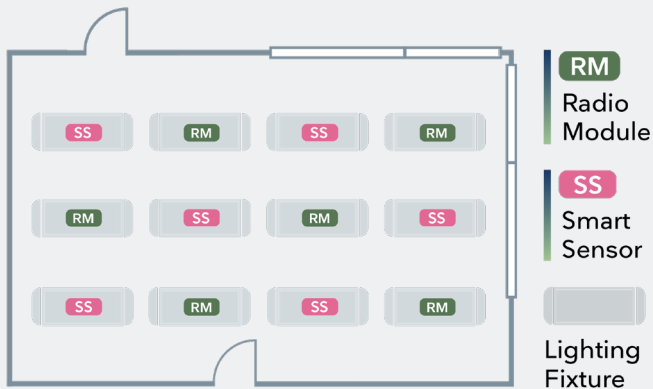
Enlighted’s cutting-edge technologies are customizable to meet the specific layout, usage, and requirements of any facility. The diagrams below illustrate three distinct deployment strategies for a hypothetical office, detailing how the bill of materials varies with each configuration.



Smart Sensors

Bill of Materials

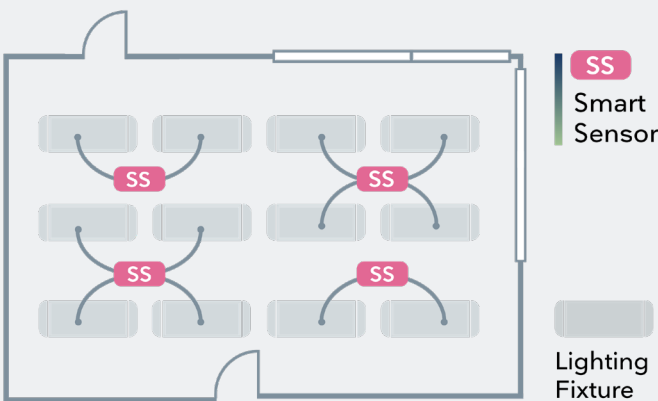
- 12 Smart Sensors
- 12 Control Units
- 1 Wall Switch
- 1 Gateway
- 0 Contractor installed control wiring



Radio Modules and Smart Sensors

Bill of Materials

- 6 Smart Sensors
- 6 Radio Modules
- 12 Control Units
- 1 Wall Switch
- 1 Gateway
- 0 Contractor installed control wiring



Value Engineering

Bill of Materials

- 4 Smart Sensors
- 4 Control Units
- 1 Wall Switch
- 1 Gateway
- 12 Contractor installed low-voltage wiring runs

Advantages of Smart Sensors + Radio Modules Over Value Engineering

Initial Labor Cost Reduction: Integrating sensor suites into light fixtures during installation cuts labor expenses and streamlines setup.

Reduced Implementation Errors: Pre-integrated systems enhance accuracy, reducing installation mistakes for smoother implementation.

Maintenance Cost and Disruption Reduction: Remote troubleshooting capabilities minimize maintenance costs and operational interruptions.

Wireless Control Enhancement: Wireless remote control of lighting fixtures provides greater flexibility and efficiency, leading to energy savings.

Enlighted Lighting Solutions Feature Comparison

| System Functionality | Connected Lighting | | | IoT |
|--|-----------------------|----------------|-----|-----|
| | Value Engineering | SS + RM | SS | SS |
| Robust scalable wireless network for communication | ✗ | ✓ | ✓ | ✓ |
| Manage Support - On-prem and Cloud | ✓ | ✓ | ✓ | ✓ |
| Bluetooth enabled | ✓ ^{***} | ✓ | ✓ | ✓ |
| Soft energy metering | ✓ | ✓ | ✓ | ✓ |
| Intelligent energy management | Limited ^{**} | ✓ | ✓ | ✓ |
| Occupancy sensing | ✓ ^{**} | ✓ [*] | ✓ | ✓ |
| Ambient light sensing | ✓ ^{**} | ✓ [*] | ✓ | ✓ |
| Day light harvesting | ✓ ^{**} | ✓ [*] | ✓ | ✓ |
| Temperature sensing | ✗ | ✗ | ✓ | ✓ |
| Space | ✗ | ✗ | ✗ | ✓ |
| Location service | ✗ | ✗ | ✗ | ✓ |
| Data API | ✗ | ✗ | ✗ | ✓ |
| Access to Premium Support | ✓ | ✓ | ✓ | ✓ |
| Compatibility with Edge (add-on function) | YES | YES | YES | YES |
| BACnet integration with BMS (add-on function) | YES | YES | YES | YES |

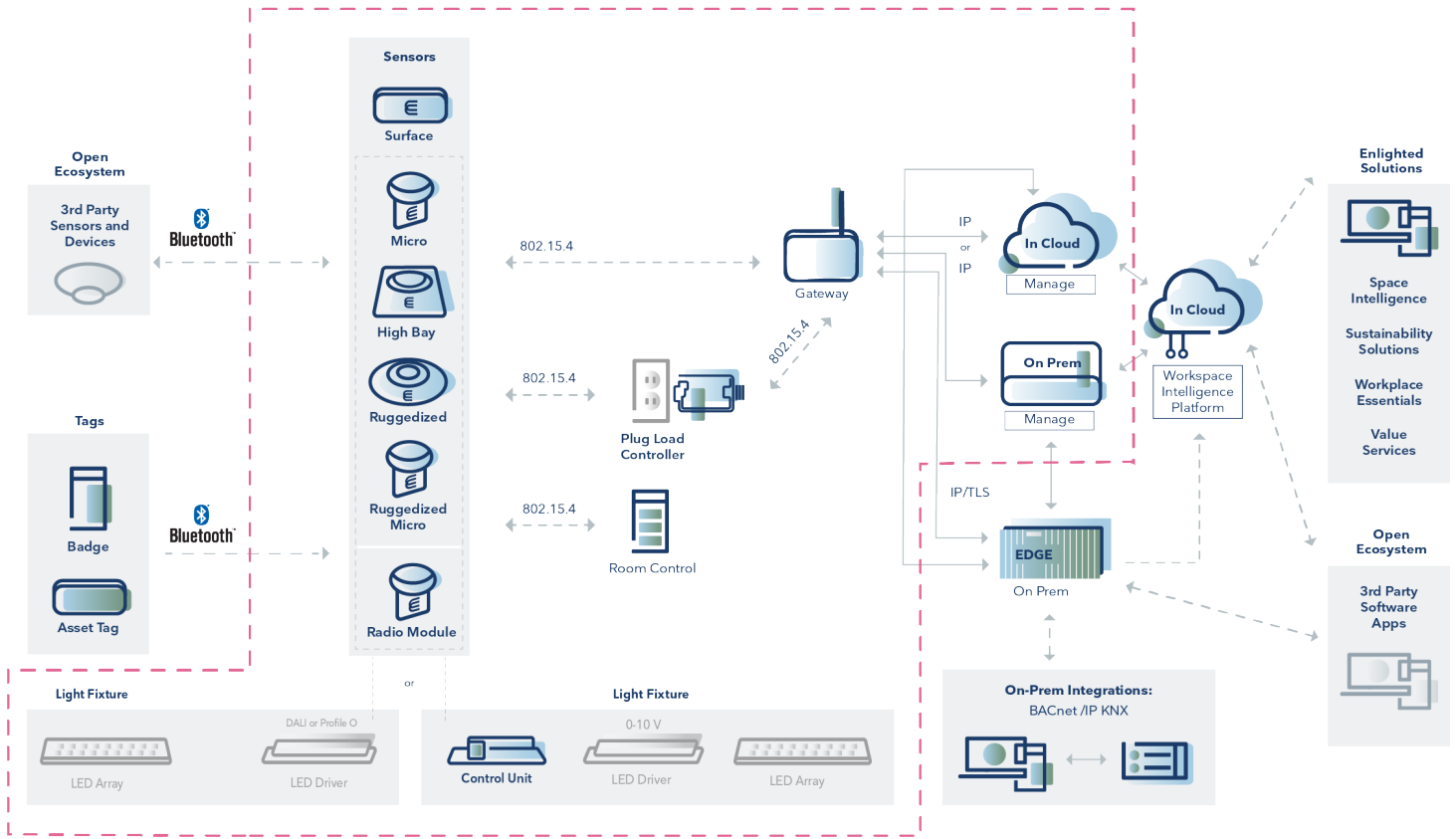
* Effectiveness dependent on wireless grouping via Manage software application. Each group must contain a Smart Sensor.

** Effectiveness dependent on wired grouping. Each group must contain a Smart Sensor.

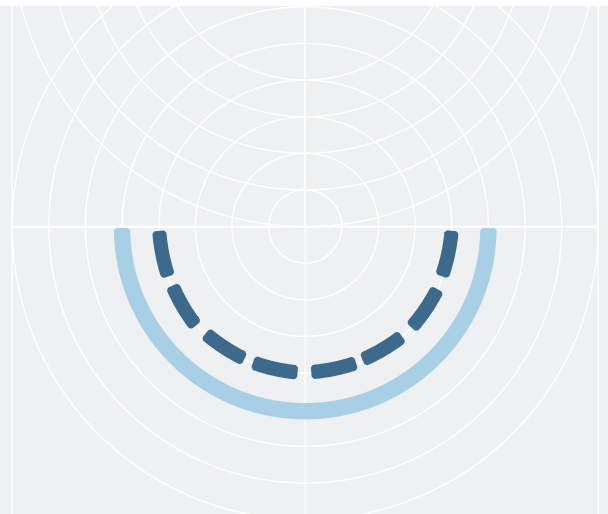
*** Bluetooth available only through Smart Sensors.

The Sensor Network

The combination of the Enlighted Connected Lighting system and our IoT infrastructure is capable of managing over 18,000 sensors per building. Each node connects to one or more neighboring nodes instead of directly to the central hub. Therefore, the hub does not overload with connections from different devices. This purpose-built design uses mesh networking technology combined with robust security for a unique delivery mechanism of sensor information.



Connected Lighting



A Superior Solution for Building Retrofits

Enlighted offers a comprehensive retrofit solution with an industrial, secured wireless network, smart sensors, and radio modules, facilitating streamlined control of luminaires via the Enlighted Manage interface for optimal lighting configuration and energy savings.

Key benefits include:

- **Significant Energy Savings:** Achieve considerable energy reduction at lower labor and material costs.
- **Utility Rebates and Compliance:** Meet eligibility criteria for utility rebates, where applicable, and compliance with standards.
- **Factory-Ready Luminaires:** Simplify installation with pre-configured lighting solutions.
- **Immediate Financial and ESG Impact:** Quickly realize cost savings and advance your Environmental, Social, and Governance goals.
- **Minimal Operational Disruption:** Ensure business continuity with non-intrusive installation and upgrades.
- **Reduced Maintenance Costs:** Lower ongoing expenses, particularly beneficial during remodeling phases.

