

DESCRIPTION

LumaWatt Pro powered by Enlighted is an integrated system of luminaires, digital sensors, and application-based software for any size project. The strengths of LumaWatt Pro powered by Enlighted are based on the independent, secure operation of individual sensors in every lighting fixture, combined with wireless communication to the powerful Energy Manager.

SPECIFICATION FEATURES

Overview

The LumaWatt Pro system provides dense, data-rich sensing within the footprint of the luminaire. The system aggregates input from the project to provide visibility to entire aspects of environmental data, putting it into easy-to-read dashboards of analytic detail. The dashboards enable you to take additional action with the system to improve energy savings, master the use of the space, interact with heating, ventilation, and air-conditioning (HVAC) systems, and report on system modes to reduce maintenance. By collecting granular, real-time data from our state-of-the-art integrated sensors for smart building solutions, you are in control. The LumaWatt Pro system enables commercial building owners to drive down energy costs, improve occupant comfort and health, and establish a unified solution for energy management and building automation. The system provides more than 70 percent savings on lighting energy costs through presence sensing, task tuning, daylight harvesting, time of day control, and more.

Wireless Sensors

LumaWatt Pro sensors are integrated in every light fixture (one-to-one) to collect activity data. Sensor technology moves beyond analog, into digitizing the signal. This enables them to understand a wider variety of heat signatures focusing completely on people. The sensor constantly monitors its area for the slightest changes in ambient light levels to maintain the desired level of total lighting. And because system sensors communicate over a wireless network, no fixture-to-fixture wiring is required.

System Server

Central to the LumaWatt Pro system is the Energy Manager, which works closely with the advanced sensors to push data for usage analysis. Important data about how a building is used by its occupants allows adjustment to increase efficiency. The Energy Manager also provides information about how much the lighting system is saving. This real-time data stream makes it easy to project the annual ROI that will be realized from the LumaWatt Pro advanced lighting system. With no software to install, the Energy Manager provides browser based user interfaces with password-protected security.

Code Compliant

LumaWatt Pro has you covered by meeting stringent energy codes. For instance, when California made adaptive, multi-level control a requirement in Title 24, LumaWatt Pro met the challenge with comprehensive advanced control strategies. The LumaWatt Pro advanced lighting system meets the adaptive requirements fully now and in the future – without having to upgrade any hardware components.

Title 24

Code compliance includes:

- Section 130.1(b) – Multi-level controls that support continuous dimming and shut off when spaces are unoccupied.
- Section 130.1(d) – Automatic Daylighting controls that adjust lighting according to ambient light levels.
- Section 130.1(e) – Demand response controls to automatically reduce lighting energy use by at least 15 percent.
- Section 130.5(a) – Service metering to report on total electrical use.

Catalog #		Type
Project		
Comments		Date
Prepared by		

System Structure

- Luminaires are factory wired to sensors, which provide control based on digital occupancy and daylight dimming as independent, fault-proof, resilient networks of end-points.
- Sensors communicate to each other, and gateways using easy wireless installation with secure set up.
- Gateways communicate using industry-standard wired technology to the Energy Manager, for powerful, familiar dashboards of useful information tailored for easy use on a connected computer.
- Energy Managers connect to cloud-based applications, maximizing the dense, data-rich sensing within the footprint of the luminaire for management of the building environment.



LUMAWATT PRO POWERED BY ENLIGHTED SYSTEM

LumaWatt Pro

Connected Lighting | Powered by
Wireless System | **enlighted**

SHIPPING DATA

Approximate Net Weight:
LumaWatt Pro Energy Manager: 2.3 lbs.
 (1.04 kgs.)
Gateway: 0.3 lbs. (0.13 kgs.)
Router: 1.7 lbs. (0.77 kgs.)
ENC-3 Enclosure: 38 lbs. (17.3 kgs.)

CERTIFICATION DATA

FCC Part 15 Class A
 RoHS
 UL and cUL Listed
 CE Certified
 IEEE 802.15.4 Compliant

TECHNICAL FEATURES

The Energy Manager configures and manages sensor and luminaire behavior by adjusting software profiles stored at the sensor. The system retains reported data for up to 36 months. The Energy Manager generates reports on system availability, carbon reduction, energy and financial savings.

Power Metering: Direct power metering for each luminaire to deploy comprehensive control strategies of actual usage and savings.

Building System Integration: Automatic Demand Response (ADR) and Demand Response (DR) lower energy operating costs and comply with codes, efficiency and sustainability goals.

BACnet/IP enables integration between the LumaWatt Pro with Enlighted lighting network and Building Management System (BMS).

Space Management: Measures and identifies under-utilized areas by gaining insight into usage patterns.

Standards-Based Communications:

- System protocols provide robust and mature capabilities.
- 802.15.4 wireless protocol for sensor and gateway connectivity.
- 802.11.x Ethernet and Power over Ethernet communications between gateways and Energy Managers,
- TCP/IP protocol for connection of PC's with browser-based services.
- REST-based APIs support GET and POST requests and XML, JSON responses.

Beaconing and positioning:

- Bluetooth 4.0 Low Energy (BLE) systems in each sensor provide a continuous grid of beacons for gathering location and position data in cloud-based applications.
- The BLE system can be disabled using the Energy Manager.
- Data Security:**
- AES 128-bit encryption for wireless data transmission and SSL encryption for TCP/IP data transmission enabled for data security.

Flexible Deployment:

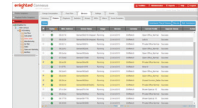
- The Energy Manager can be installed on an IT corporate network, dedicated lighting control network, or as a stand-alone system.

Configuration and Management:

- The intuitive graphical user interface is accessible via standard web browsers with password protection.
- The system allows secure access where needed, and eliminates software downloads.



Energy Manager Software



Energy Dashboard

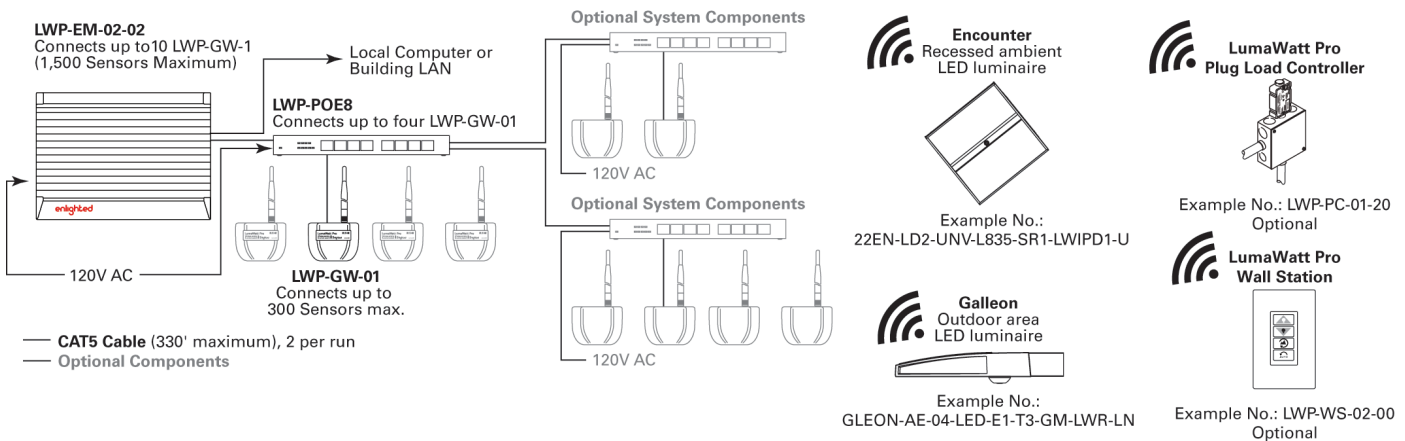


Space Analysis Application



AIR E Integration Application

SYSTEM CONFIGURATIONS



Note: The minimum system requires at least one luminaire, one Gateway, a Power over Ethernet (POE) network, and one Energy Manager. Other components are optional, and the system is expandable. See www.eaton.com/lumawattpro. Consult the System Planning and Extents table for more details.

SYSTEM PLANNING AND EXTENTS

Category	Best Practice	Maximum
Sensor to Gateway Communication	150'-180' (45m-55m)	300' (90m)
Gateway- 1st "Hopper" Communication	150' (45m)	150' (45m)
Sensor Hopper to Sensor Communication	250'-300' (75m-90m)	300' (90m)
Hopper to Hopper Communication	250' (75m)	250' (75m)
Number of Hops for LWR Sensors	15	15
Number of Hops for LWI, LWT Sensors	3	3
Gateway to Energy Manager distance (wired)	328' (100m)	328' (100m)
Gateway to Energy Manager network switch (additive)	328' (100m)	328' (100m)
Gateway per network switch (Power over Ethernet)	4	4
Gateways per Energy Manager	10	10
Sensors per Energy Manager	1000	1000
Sensors per Enterprise Energy Manager Pro	18000	18000
Sensors per Wall Station	100	100
Sensors to Wall Station Communication	150' (45m)	150' (45m)

