# Classroom Spaces Guide

**Featuring** HPR-SL, HP-4 D & HP-2 WW

Comprehensive instructions for incorporating Finelite HPR-SL, HP-4 D, and HP-2 WW luminaires seamlessly with Wattstopper lighting controls.
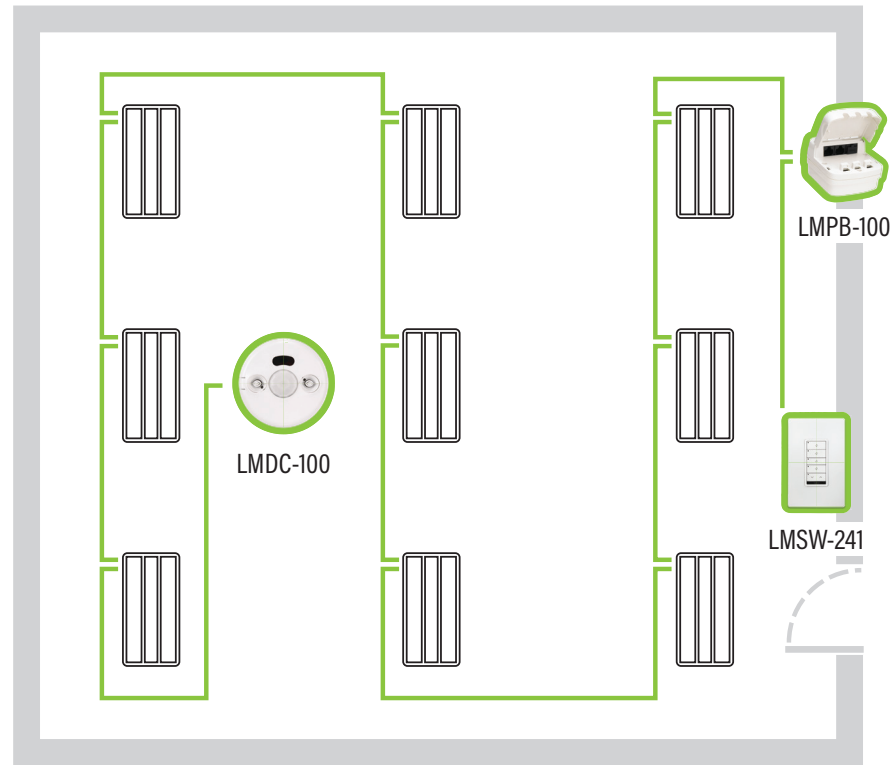
*The goal of this guide is to equip you to design effective lighting solutions for various K-12 classroom projects. Inside, you'll find clear lighting and control diagrams that showcase control integration possibilities.*

# Wired - Stand Alone
## Occupancy, Manual Control

**Design Scenario:**

- Each fixture is equipped with an LMFC-011 DLM in-fixture control device to provide luminaire-level lighting control in the space

- LMPB-100 provides power to in-fixture controls and other DLM devices.

- LMDC-100 provides occupancy sensing to automatically

- Turn any lighting on or off.

- LMSW-241 provides manual on, off, and dimming control with scene control for quick adjustments to certain room states.

Classroom | HPR-SL 2x4

LMPB-100

LMDC-100

LMSW-241

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## Finelite Luminaire Details

**HPR-SL 2x4**
High powered recessed streamline

**+**

**Wattstopper LMFC-011 + LMFC-2RJ**
Load controller

| ORDER GUIDE EXAMPLE |
|---|
| **Control Options** |
| ⦿ **W011** - Wattstopper LMFC-011 & LMFC-2RJ |
| ◯ **W601** - Wattstopper LMFS-601 Wireless Sensor |

## Wattstopper Control Details

**LMPB-100**
Power Supply for all devices
150mA limit per

**LMSW-241**
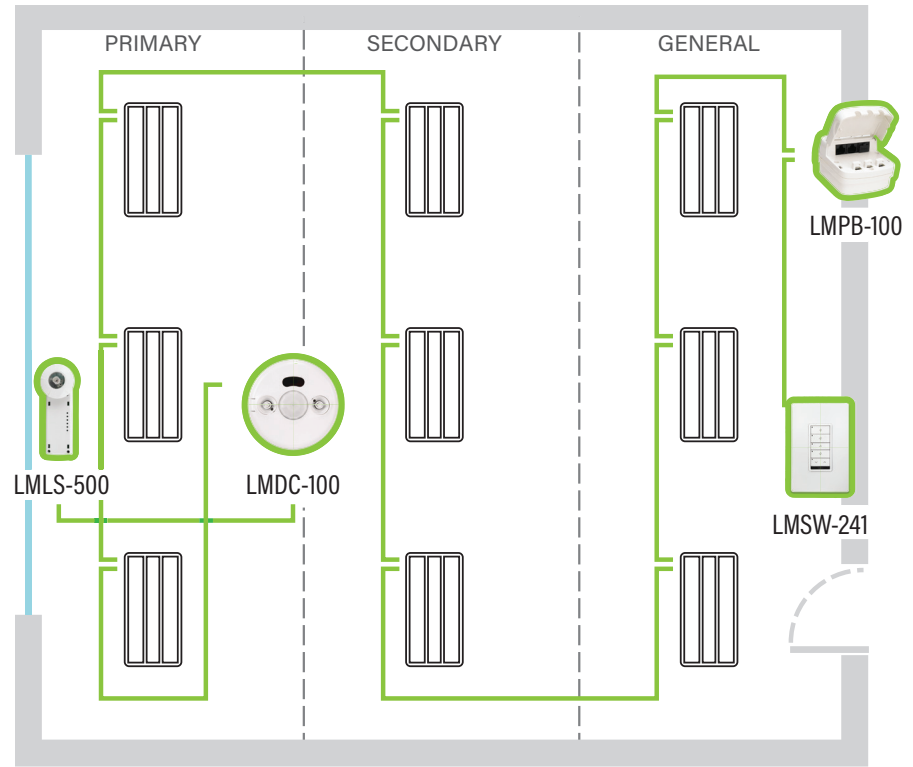Dimmer to control all zones
Current consumption 7mA

**LMCT-100-2**
DLM Hand Held Programmer

FINELITE®
*Better Lighting*

# Wired - Stand Alone
## Occupancy, Daylight, Manual Control

**Design Scenario:**

- LMLS-500 provides daylight reactive control by establishing up to three lighting zones using daylight harvesting. The example shown utilizes two zones (primary, secondary), with a third non-daylit zone.

- LMSW-241 provides a single-zone control experience while the LMLS-500 automates zone-based daylight harvesting without user interactions.

Classroom | HPR-SL 2x4



PRIMARY    SECONDARY    GENERAL

LMPB-100

LMLS-500    LMDC-100

LMSW-241

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## Finelite Luminaire Details



**HPR-SL 2x4**
High powered recessed streamline

**+**

**Wattstopper LMFC-011 + LMFC-2RJ**
Load controller
Current consumption: 7mA ea.

| ORDER GUIDE EXAMPLE | | |
|---|---|---|
| **Control Options** | | |
| ● **W011** - Wattstopper LMFC-011 & LMFC-2RJ | | |
| ○ **W601** - Wattstopper LMFS-601 Wireless Sensor | | |

## Wattstopper Control Details



**LMPB-100**
Power Supply for all devices
150mA limit per

**LMDC-100**
Dual Tech Occupancy
Sensor (1,000 sqft)
Current consumption: 20mA

**LMSW-241**
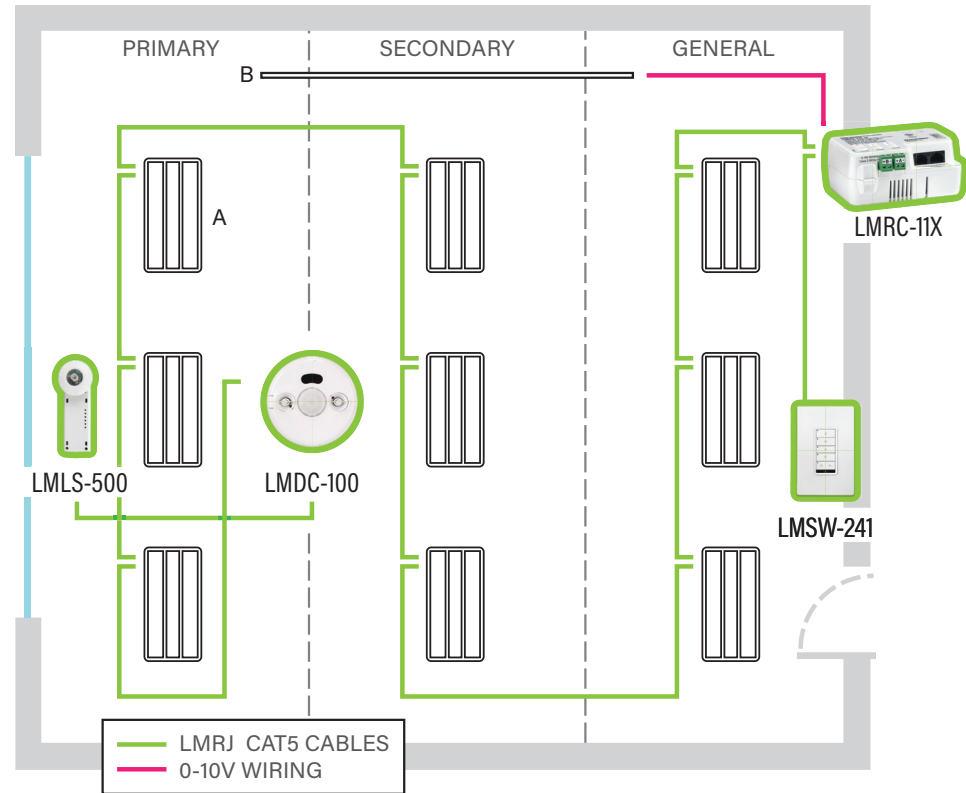Dimmer to control all zones
Current consumption 7mA

**LMLS-500**
Open loop daylight sensor

A brand of **legrand®**    4

# Wired - Stand Alone
## Occupancy, Daylight, Manual Control

**Design Scenario:**

- When fixtures without LMFC-011 integrated controls are required, the LMPB-100 Power Booster may be substituted with an LMRC-11X Room Controller in order to integrate control of the fixture in the room.

- Any fixtures connected to an LMRC-11X Room Controller operate at the same output level and may be programmed to operate identically or differently than the LMFC-011 enabled fixtures in the space.

Classroom | HPR-SL 2x4, HP-2 WW

PRIMARY    SECONDARY    GENERAL

LMRC-11X

LMLS-500    LMDC-100

LMSW-241

—— LMRJ  CAT5 CABLES
—— 0-10V WIRING

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## Finelite Luminaire Details

**HPR-SL 2x4**
High powered recessed streamline

**HP-2 WW**
High Powered 2" Wall Wash

**+**

**Wattstopper LMFC-011 + LMFC-2RJ**
Load controller
Current consumption: 7mA ea.

| ORDER GUIDE EXAMPLE |
|---|
| **Control Options** |
| ◉ **W011** - Wattstopper LMFC-011 & LMFC-2RJ |
| ○ **W601** - Wattstopper LMFS-601 Wireless Sensor |

## Wattstopper Control Details

**LMRC-11X**
Power Supply for all devices

**LMLS-500**
Open loop daylight sensor
Current consumption: 20mA

**LMDC-100**
Dual Tech Occupancy
Sensor (1,000 sqft)
Current consumption: 20mA

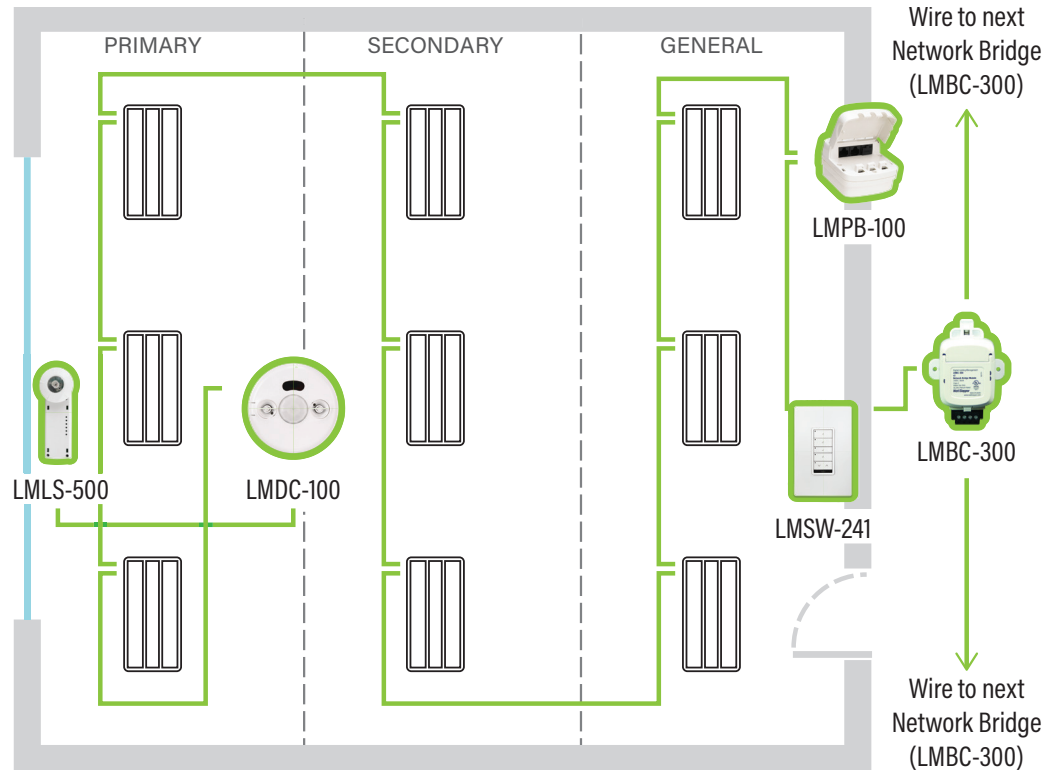**LMSW-241**
Dimmer to control all zones
Current consumption: 7mA

# FINELITE
## Better Lighting

# Wired - Networked
## Occupancy, Daylight, Manual Control

**Design Scenario:**

- When rooms of LMFC-011 enabled fixtures require more advanced functionality such as time clock or demand responsive control, rooms may be networked to each other and to a system manager device (LMJA-8000-SM) by adding an LMBC-300 Bridge Controller to each room.

- LMBC-300 bridges connect to each other via an RS-485 MS/TP daisy chain which ultimately connects to the LMJA-8000-SM for system network communications.

Classroom | HPR-SL 2x4



PRIMARY    SECONDARY    GENERAL

Wire to next
Network Bridge
(LMBC-300)

LMPB-100

LMBC-300

LMSW-241

LMLS-500    LMDC-100

Wire to next
Network Bridge
(LMBC-300)

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## Finelite Luminaire Details



**HPR-SL 2x4**
High powered recessed streamline

**+**

**Wattstopper LMFC-011 + LMFC-2RJ**
Load controller
Current consumption: 7mA ea.

| ORDER GUIDE EXAMPLE |
| --- |
| **Control Options** |
| ⦿ **W011** - Wattstopper LMFC-011 & LMFC-2RJ |
| ◯ **W601** - Wattstopper LMFS-601 Wireless Sensor |

## Wattstopper Control Details

**LMPB-100**
Power Supply for all devices
150mA limit per

**LMSW-241**
Dimmer to control all zones
Current consumption: 7mA

**LMBC-300**
Wired Network Bridge
Current consumption: 20mA

**LMDC-100**
Dual Tech Occupancy
Sensor (1,000 sqft)

**LMJA-8000-SM**
Segment Manager (supports up to 300 rooms)

**LMLS-500**
Open loop daylight sensor
Current consumption: 20mA

# Wireless - Stand Alone
## Occupancy, Daylight, Manual Control

**Design Scenario:**

- Each fixture is equipped with an LMFS-601 DLM in-fixture control and sensor device to provide luminaire-level lighting control in the space.

- The LMFS-601's built-in occupancy sensor provides occupant sensing to automatically turn any lighting on or off at either an indiviDual-fixture or group level.

- The LMFS-601's built-in daylight sensor provides daylight reactive control for each LMFS-equipped fixture within the same daylight zone.

- LMSW-641-S provides manual on, off, and dimming control with scene control for quick adjustments to certain room states while the LMFS-601 daylight sensor automates zone-based daylight harvesting without user interactions.
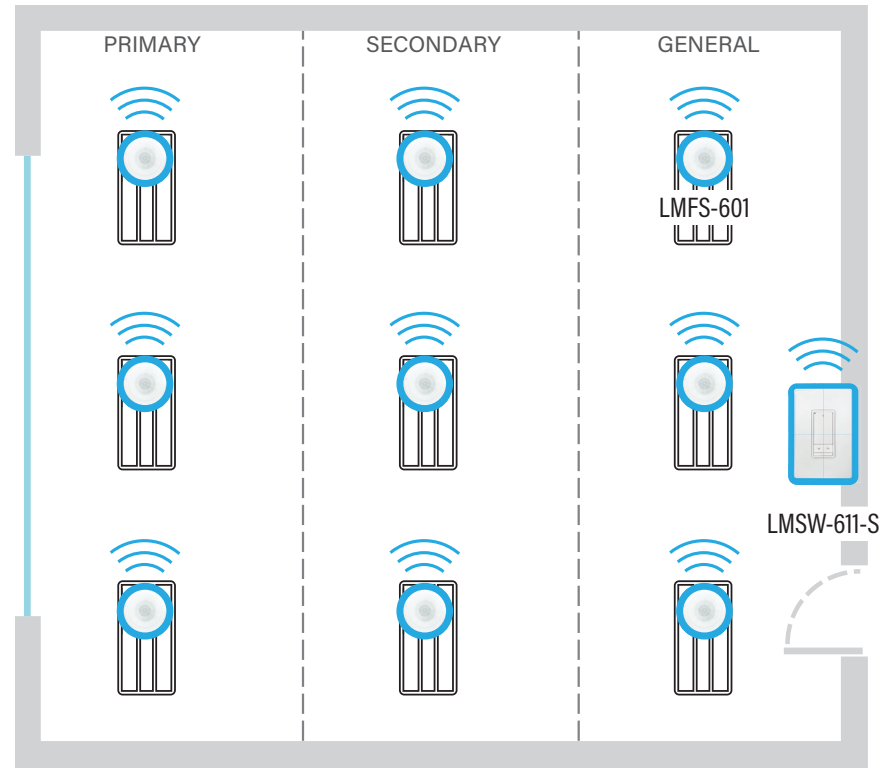
Classroom | HPR-SL 2x4



PRIMARY     SECONDARY     GENERAL

LMFS-601

LMSW-611-S

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## Finelite Luminaire Details



**HPR-SL 2x4**
High powered recessed streamline

**+**

**Wattstopper LMFS-601**
Wireless Sensor

ORDER GUIDE EXAMPLE

**Control Options**

- ○ **W011** - Wattstopper LMFC-011 & LMFC-2RJ
- ◉ **W601** - Wattstopper LMFS-601 Wireless Sensor

**Top coverage pattern @8ft.**

Major Motion
Minor Motion



**Side coverage pattern**
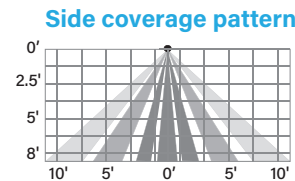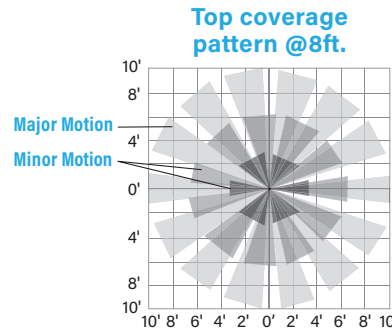


## Wattstopper Control Details



**LMSW-6XX-S**
Dimmer to control all zones
Battery powered

**LMFS-601 W**
PIR Occupancy Sensor (300 sqft)
Daylight Sensor



**DLM Configuration App**

# Wireless - Networked
## Occupancy, Daylight, Manual Control

**Design Scenario:**

- Primary & General fixtures are equipped with CLM and SensiLUM in-fixture controls to provide luminaire-level lighting control in the space.

- The SensiLUM built-in occupancy sensor provides occupant sensing to automatically turn any lighting on or off at either an indiviDual-fixture or group level.

- The SensiLUM built-in daylight sensor provides daylight reactive control for each LMFS-equipped fixture within the same daylight zone.

- EN-WS-SC3-ZB-WH provides manual on, off, and dimming control with scene control for quick adjustments to certain room states while the daylight sensor automates zone-based daylight harvesting without user interactions.
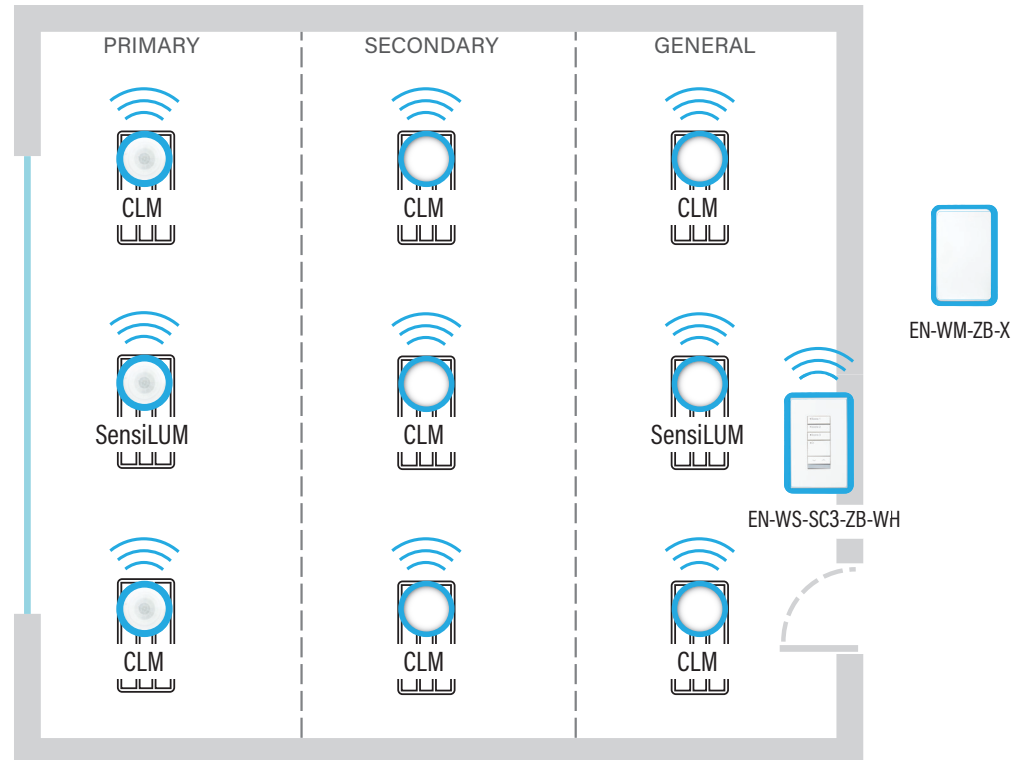
One Wireless manager (EN-WM-ZB-X) is required to control up to 100 devices across multiple classrooms.



PRIMARY | SECONDARY | GENERAL

CLM | CLM | CLM
SensiLUM | CLM | SensiLUM
CLM | CLM | CLM

EN-WM-ZB-X

EN-WS-SC3-ZB-WH

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## Finelite Luminaire Details



**HPR-SL 2x4**
High powered recessed streamline

**+**

**SLM**
SensiLUM Wireless Integrated Sensor

**+**

**CLM**
Connected Lighting Module

| ORDER GUIDE EXAMPLE | | |
|---|---|---|
| **Control Options** | | |
| ○ **W011** - Wattstopper LMFC-011 & LMFC-2RJ | | |
| ○ **W601** - Wattstopper LMFS-601 Wireless Sensor | | |
| ◉ **CLM** - Encelium RF | | |
| ◉ **SLM** - Encelium Sensor | | |

## Wattstopper Control Details



**EN-WS-SC3-ZB-WH**
3-scene control with switching and dimming
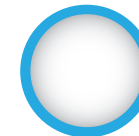
**ZBHA-CLM-DIM**
Connected Lighting Module

**EN-CLM-PIR-DD-ZB**
SensiLUM Wireless Integrated Sensor

**EN-WM-ZB-X**
Encelium Wireless Manager

## Program using Polaris Configuration

# Wired Controls Network Diagram



─ ─ ─ **Cat5 Cable**

**LMBC-300**
Wireled Mesh Border Router
(Not needed for stand-alone rooms)

**LMPB-100**
Plug Load Controller

**LMFC-011**
Fixture Controller

**LMDC-100**
Occupancy Sensor

**LMLS-500**
Daylight Sensor

**LMSW-2XX**
Fixture Controller
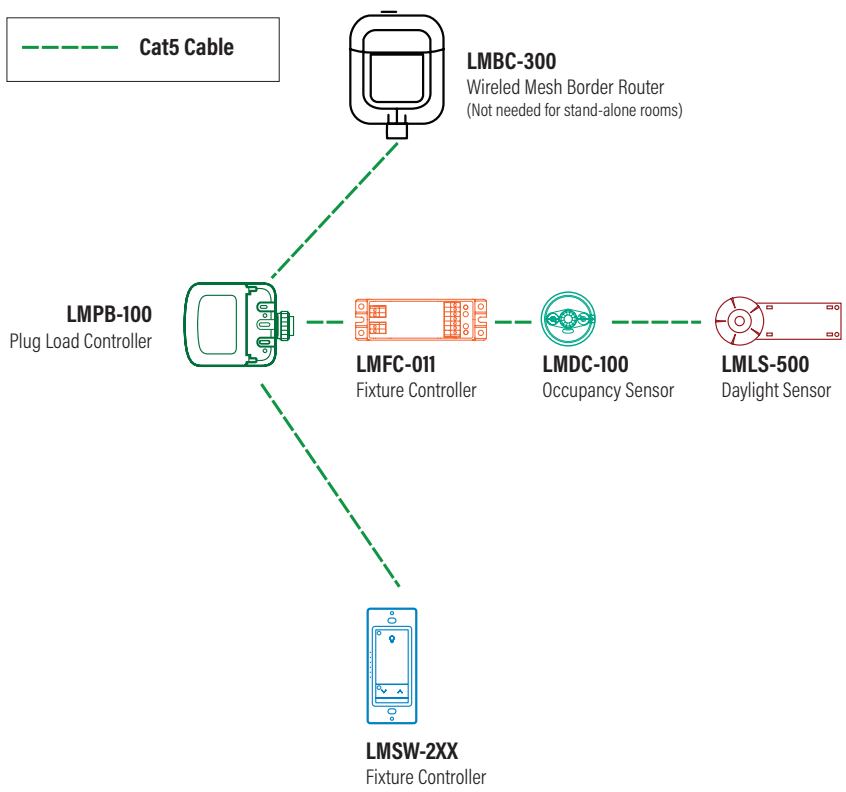
More information on wired DLM networks may be found in LMJA-8000-SM documentation

# Wireless Controls Network Diagram



**LMRC-611**
Wireless Light Controller

**LMFS-601**
Wireless Fixture Sensors

**LMSW-641-S**
Wireless Slim Switch Scene Control

**DLM Configuration App**

············ **IPv6 Non-Mesh**

············ **Bluetooth low energy**
Mobile App communication
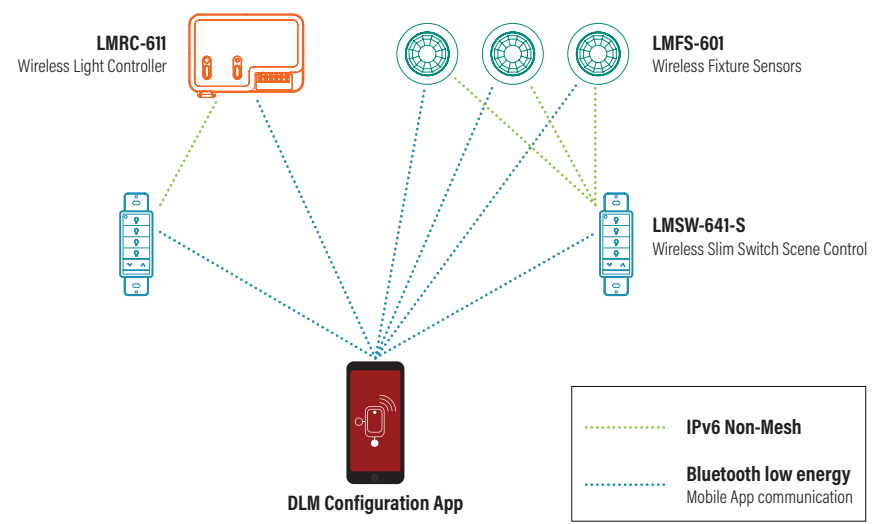
# Ordering Information

## Compatible Luminaires

| Luminaire Family | Style |
|---|---|
| **Wired LMFC-011 Installed** | |
| **HPR-SL** | 2x4, 2x2, 1x4 |
| **Wireless LMFC-601 Installed** | |
| **HPR-SL** | 2x4, 2x2, 1x4 |
| **HPR** | 2x4, 2x2, 1x4, 1x2 |
| **HP2** | D, ID |
| **HP4** | D, ID |
| **HP6** | D, ID |
| **HPX** | D, ID |
| **HPO** | D, ID |
| **S19** | All |
| **S16** | All |
| **S12** | All |

## Wattstopper Wired Controls

| Catalog # | Product |
|---|---|
| **Occupancy Sensors** | |
| **LMDC-100** | Dual Technology Sensor |
| **LMPC-100** | PIR-Only Sensor |
| **Wall Stations** | |
| **LMSW-211** | Single Zone Dimming |
| **LMSW-222** | Dual Zone Dimming |
| **LMSW-241** | Scene Control |
| **Daylight Sensors** | |
| **LMLS-400** | Single Zone Sensor |
| **LMLS-500** | Multi Zone Sensor |
| **Power Supplies** | |
| **LMPB-100** | Wired DLM Power Supply |
| **LMPL-111-20M** | Plug Load Controller |
| **LMRC-111** | Lighting Controller |
| **Pre-terminated Cat5e Cables** | |
| **LMRJ** | LMRJ Series |

## Wattstopper Wireless Controls

| Catalog # | Product |
|---|---|
| **Wall Stations** | |
| **LMSW-611-S** | Single Zone Dimming |
| **LMSW-622-S** | Dual Zone Dimming |
| **LMSW-641-S** | Scene Control |
| **EN-WS-SC3-ZB-WH** | Scene Control |
| **Accessory Controllers** | |
| **LMPL-611-20M** | Plug Load Controller |
| **LMRC-611-16M** | Lighting Controller |
| **Occupancy & Daylight Sensors** | |
| **EN-CLM-PIR-DD-ZB** | SensiLUM Wireless Integrated Sensor |
| **Luminaire Level Lighting Controller** | |
| **ZBHA-CLM-DIM** | Connected Lighting Module |
| **Wireless Manager** | |
| **EN-WM-ZB-X** | Encelium Wireless Manager |

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