



Lighting & Control Systems

LED, Low Voltage, Network-Based

by PMMI Lighting, LLC

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LED, Low Voltage DC, Network-Based

Powered & Controlled with Cat5 Cable

Revolutionary Approach to Lighting

Offering

- Simplicity
- Savings
- Automation

Ideal for

- New Construction
- Remodels/Upgrades
- Residential
- Commercial

Power

- Can be installed in solar, grid, or off grid builds
- Operates on 12, 24, 36, or 48V DC

Features

- LED
- Low Voltage DC Lighting
- Powered w/Cat5 Cable
- Controlled w/Cat5 Cable
- Allows the ability to modify the system configuration without wiring changes

Software Features

- Network based automation
- Programmable
- Easily Modifiable
- Remote Access



Economic Benefits

PMMI Lighting Systems recurring maintenance and energy costs are reduced through:

- Centralized driver and control electronics isolated from fixtures, switches and motion sensors
 - Driverless fixtures operate at lower temperature improving life expectancy and efficiency
 - Reduced unit costs of fixtures and switches
 - Less ambient heat generation in the living space
- Unique LED circuit design results in 86% efficiency improvement over incandescent lighting, and 20% efficiency improvement over conventional LED
- Use of low voltage cable throughout eliminates the need for conduit and reduces use of expensive copper Romex
- Software configuration of switch behavior and lighting control virtually eliminates the need for downstream cabling changes

LED, PoE, Low Voltage DC Lighting & Control



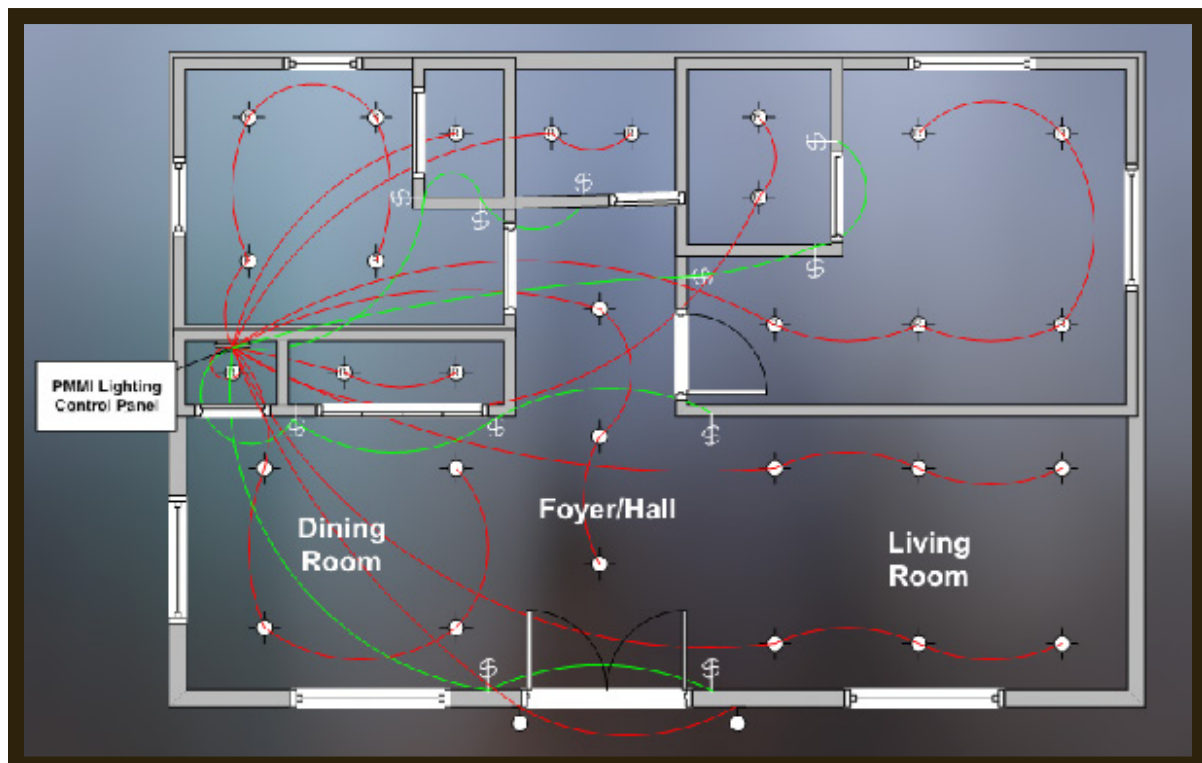
Planning

The transition to LED, low voltage, smart lighting can be confusing. There are new opportunities to explore and yes, some pitfalls to avoid. Don't worry, we are here to help every step of the way.

Projects begin with a discussion between you and one of our team members about the design blueprints and electrical plan.

Provide the design team a list of any special lighting dreams and goals for the build.

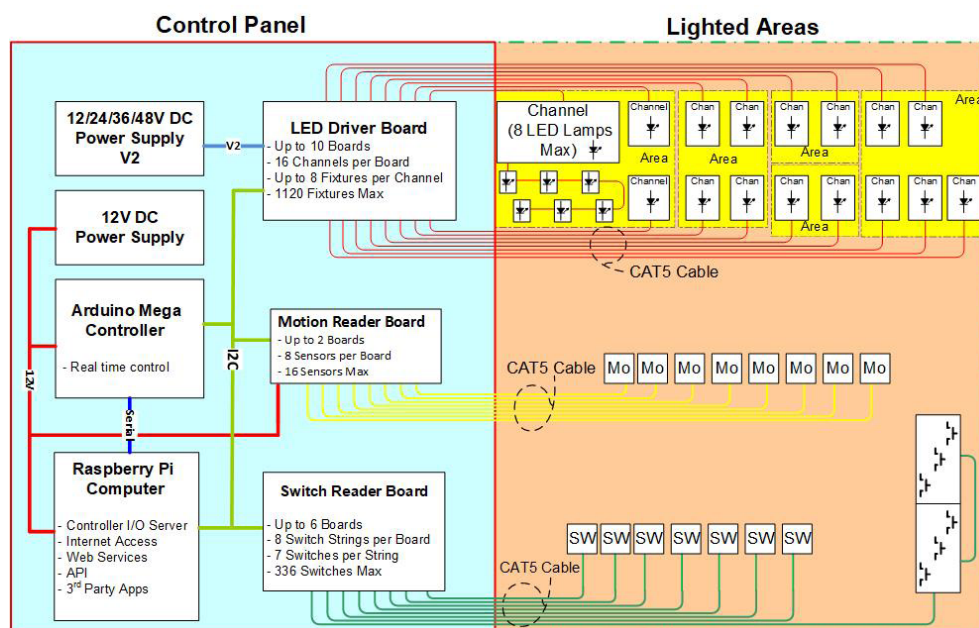
Before spending a dime, our design team will layout a lighting plan including fixtures, switches, and motion detectors. Along with this, a customized PMMI Lighting System will be recommended.



System Architecture

Totally customizable to fit the needs of the space, following are the components that make up the PMMI Lighting LED, Low Voltage Lighting System.

- PMMI Lighting HUB
- PMMI Lighting Controller
- PMMI Lighting Driver Boards
 - Multiple PMMI Lighting LED Light Fixtures
- PMMI Lighting Switch Boards
 - Multiple PMMI Lighting Switches
- PMMI Lighting Motion Reader Boards
 - Multiple PMMI Lighting Motion Detectors
- PMMI Lighting AC Interface
- Customer Supplied
 - Cat5, Cat5e, or Cat6 Cabling
 - Internet Connectivity
- Power Supply (PMMI or customer supplied)



Configuration

This is where it gets fun and where the opportunities and benefits of smart lighting become a reality.

An Excel Spreadsheet is provided that you populate to define your specific lighting system and your desired configuration.

We'll guide you through this process with advice on your configuration.

If your system is Internet connected via Ethernet, we can even login and assist with diagnostics.

Configuration can be modified at any time, during installation, a week later, a year later to accommodate changes in usage of the space.

Create stunning effects
with motion triggers,
timed events, and scenes



Single & Multi-Board Series

Single-Board Series

- Designed to accommodate small residential (cottages, tiny-homes, RVs, mobile homes) or renovations or garages, hangers, workshops and barns.
- Accommodates up to 96 LED fixtures, 14 wall switches, and 2 motion detectors.
- Light fixtures, switches, and motion detectors connect using Cat5, Cat5e or Cat6 cable into the Single Board Controller.

Multi-Board Series

- Designed to accommodate residential, and small to medium commercial applications.
- Employs an expandable approach that accommodates up to 1,280 LED light fixtures, 336 wall switches, and 16 motion detectors.
- Light fixtures, switches, and motion detectors connect using Cat5, Cat5e or Cat6 cable into a cluster of LED Driver Boards, Switch Reader Boards, and Motion Reader Boards.



Power

PMMI Lighting Circuit boards, the PMMI Lighting Controller, the PMMI Lighting HUB, and motion detectors are powered using 12V DC.

Fixtures are powered with 12V, 24V, 36V or 48V DC.

The different DC voltages determine the number of LED light fixtures that can be daisy chained on a single Cat5 cable.

AC/DC power supplies are readily available that accommodate standard 120V AC and 240V AC line voltage.

Power supplies are used as stand alone, or in combination with battery packs that provide backup power in the event of a grid power failure.

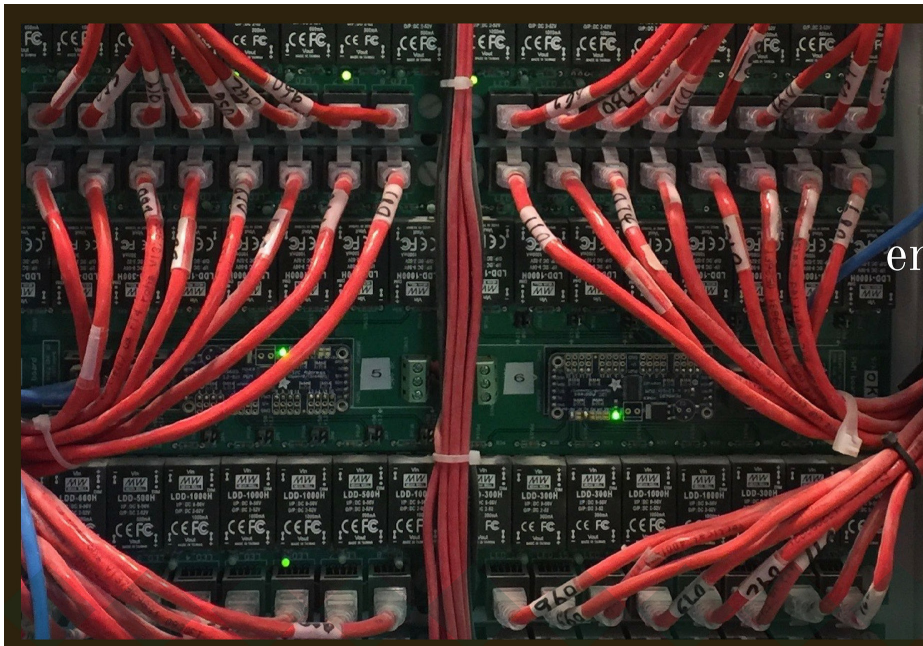
Cabling

PMMI Lighting uses Cat5/6 cable with RJ45 connectors for **power and control** between PMMI Lighting fixtures, switches, detectors and inter board connections.

Connectivity

The PMMI Lighting HUB provides internet connectivity to the lighting system through Ethernet.

PMMI support uses internet for installation, diagnostics, configuration, and software updates.



powered &
controlled
entirely over
Cat5 cable

Fixtures

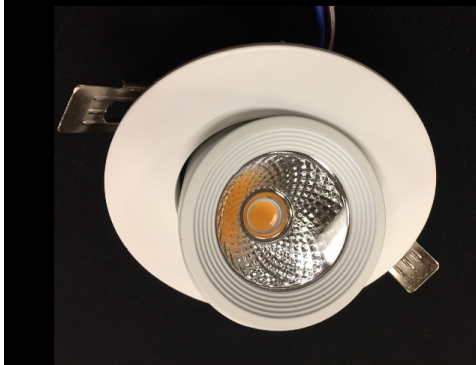
LED Recessed Downlight by PMMI Lighting
6.4 Watt • 2900K (CCT) • White Trim
Part# 8400



LED Low Profile Recessed Downlight by PMMI Lighting
6.4 Watt • 2900K (CCT) • White Trim
Part# 8405



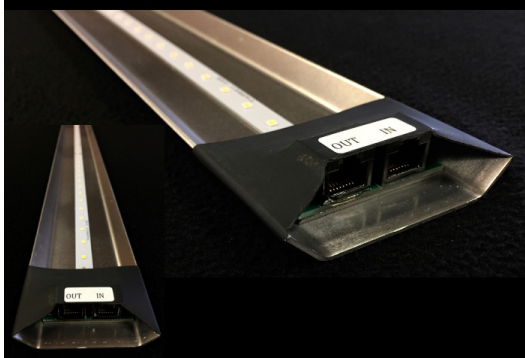
Recessed LED Gimbal Fixture
9 Watt • 3000K (CCT) • White Trim
Part# 8410



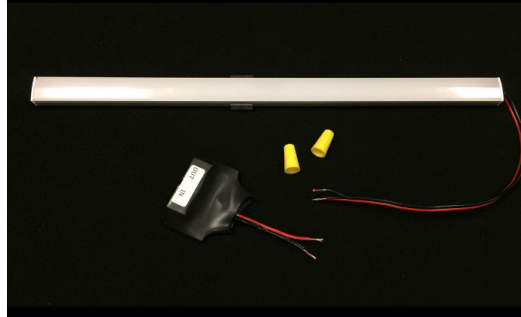
Outdoor LED Double Flood Light
12W each bulb • 24W total
3000K (CCT) • White Trim
Part# 8425

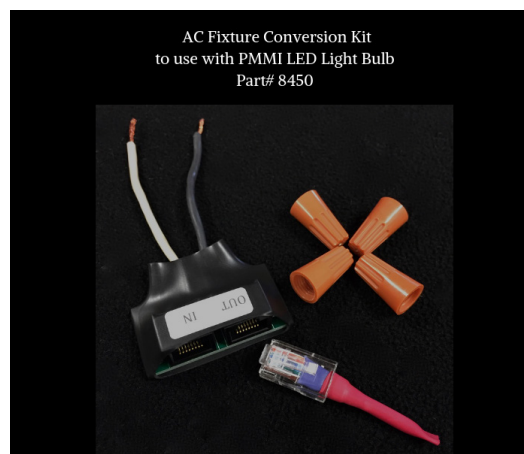


LED Shop Light, 24 Watt
4 foot, 24 Watt • 4000K (CCT)
Part# 8415



PMMI Lighting
LED Strip Light w/diffuser • 3000°K (CCT)
6 Watt • 1 ft • Part# 8500
12 Watt • 2 ft • Part# 8505
18 Watt • 3 ft • Part# 8510





Part#	Description
8400	LED Recessed Downlight 6.4 Watt, Color Temp 2900°K, White Trim
8405	LED Recessed Low Profile Downlight 6.4 Watt, Color Temp 2900°K, White Trim
8410	LED Recessed Gimbal 9 Watt, Color Temp 3000°K, White Trim
8415	LED Shop Light, 24 Watt 4', 24 Watt, Color Temp 4000°K, metal backing
8420	LED Shop Light, 48 Watt 4', 48 Watt, Color Temp 4000°K, metal backing
8500	LED Strip Light w/diffuser • 1 ft - 3000°K - 6 Watt (available in 4 lengths) 8505 • 2 ft, 12 Watt 8510 • 3 ft, 18 Watt 8515 • 4 ft, 24 Watt
8425	Outdoor LED Double Flood Light 12W each, 24W total, Color Temp 3000°K, White Trim
8450	AC Fixture Conversion Kit to use with PMMI LED Light Bulb
8460	PMMI Lighting Low Voltage, LED Light Bulb, 6 Watt, E27 Base A18 Shape, 3000K (CCT), 80Ra (CRI), 6V DC Voltage
8465	PMMI Lighting Low Voltage, LED Light Bulb, 3 Watt, E27 Base A15 Shape, 3000K (CCT), 80Ra (CRI), 3V DC Voltage
8470	PMMI Lighting Low Voltage, LED Light Bulb, 3 Watt, E12 Base B12 Shape, 3000K (CCT), 80Ra (CRI), 3V DC Voltage

Switches

- PMMI Lighting System wall switches use momentary closed contacts to control lights.
- Switches are not powered and have only simple on-board logic. The result is an effective yet low cost switch.
- One, two, three, four, and six button configurations are available.
- Mounted in standard single and multi-gang electrical boxes.
- Switches have “IN” and “OUT” RJ45 connectors on the back to accommodate Cat5 cable connections.
- Up to seven switches can be daisy chained using Cat5 jumper cables to form a switch cable.
- Each switch cable connects to the Switch Receiver Board in the Control Center.
- No additional cabling (e.g. power) is required.
- Each switch is configured in software to behave in a variety of different ways depending on usage.
- Options include:
 - On • Off • Toggle • Dimmer
 - Soft On • Soft Off • Soft Toggle
 - Scene • Scene Toggle • Scene Delay



Motion



PMMI motion sensors are mounted using a standard single gang box with Decora cover plates, and are prewired with RJ45 connectors for easy installation. Standard wall and ceiling mount sensors are available for closets and living spaces, and a long distance detection model is available for high ceiling applications.

Detection graphs and additional details are available on the components page of the PMMI Lighting website.



AC Interface

PMMI Lighting's AC Interface enables control of high-voltage AC loads (on/off only) through relays switched using low voltage inputs from the LED drivers over cat5 cable.

Each relay can switch AC loads of up to 10A at either 120 or 240V.

Ceiling and exhaust fans, bathroom heaters are typical appliances controlled through the AC interface.

Available in the following configurations:

Part# 8020
AC Interface 8 Position w/17" Cabinet

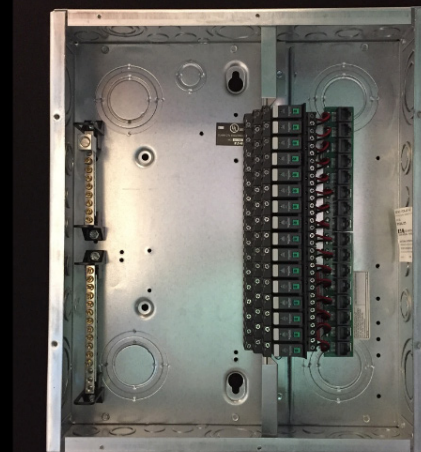
Part# 8021
AC Interface 16 Position w/17" Cabinet (shown)

Part# 8022
AC Interface 24 Position w/23" Cabinet

AC Interface 16 Position w/17" Cabinet
Part# 8021



AC Interface 16 Position w/17" Cabinet
Part# 8021



www.pmmi-lighting.com

Please visit the PMMI Lighting website for more detailed information.

Email floor plan for FREE system estimate.

Thank you for your interest in LED Low Voltage Lighting Systems by PMMI Lighting.





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