

DUAL LOOP SWITCHING AND DIMMING PHOTOSENSOR

LMLS-600

Single zone photosensor for top-lit switching and dimming applications

Combines strengths of open loop and closed loop daylighting control in one product

Selectable 30° or 70° closed loop spatial response, 60° open loop spatial response for optimal detection of light levels



Closed loop view

Open loop view

Automatic calibration and configuration

Shown to save 52% more energy than open loop daylighting control system

Photodiodes corrected to match the photopic response of the human eye



DESCRIPTION

The LMLS-600 is a dual loop photosensor that automatically switches or dims one zone of lighting based on ambient light and daylight levels. It has two silicon photodiodes with an extended range of 1-10,000 footcandles (fc) and features photopic correction to mimic the human eye's perception of daylight. The LMLS-600 is part of a Digital Lighting Management (DLM) system and sends light level signals to control loads connected to DLM on/off or dimming room controllers.

OPERATION

The LMLS-600 operates on Class 2 power supplied to a DLM local network by one or more DLM room controllers. Following an automatic setup process it works with the room controller(s) to maintain the designed lighting level regardless of changes in the daylight contribution. Wattstopper's exclusive control algorithm uses both open and closed loop technologies. During normal operation, the closed loop photosensor provides control based on the ambient light level. However, if the LMLS-600 detects occupant interference the open loop sensor takes control for the remainder of the day. Following automatic overnight recalibration, the closed loop sensor resumes control.

AUTOMATIC SETUP

After installation, the LMLS-600 measures the daylight and electric light levels in order to automatically calibrate itself and establish setpoints. Setup may be initiated from the photosensor or a handheld LMCT-100 wireless configuration tool. The LMLS-600 recalibrates every night to account for reflectance changes (furniture layout, retail display, interior colors, etc.) or lamp lumen depreciation. The LMCT-100 is also used to adjust setpoints and other parameters, if desired. Adjustable switching parameters include on and off setpoints and time delays. The off setpoint can be adjusted to a value of 25, 50 (default), 75, or 100 percent above the on setpoint. Adjustable dimming parameters include day and night setpoints, ramp up and down rates, and a cut-off time delay. Electric lights can be turned off (default) or dimmed to minimum level when daylight contribution is abundant.

APPLICATIONS

The LMLS-600 Photosensor is recommended for spaces with skylights, including warehouses and big box retail stores. It is designed to sense both daylight and electric light, and is typically mounted under a skylight. The LMLS-600 can be used for on/off switching, bi-level or tri-level switching (step dimming) or continuous dimming.

FEATURES

- Can be calibrated in any daylight condition
- Test Mode override of programmed time delay allows easy verification of selected settings
- Infrared (IR) transceiver for wireless configuration and control
- Recalibrates every night to account for reflectance changes within the space
- LED status indicators
- Compatible with DLM wall switches for manual override, if desired
- RJ45 jack for connection to free-topology Cat 5e DLM local network
- Complies with California Title 24, Section 119 requirements
- The product meets the materials restrictions of RoHS

PROJECT

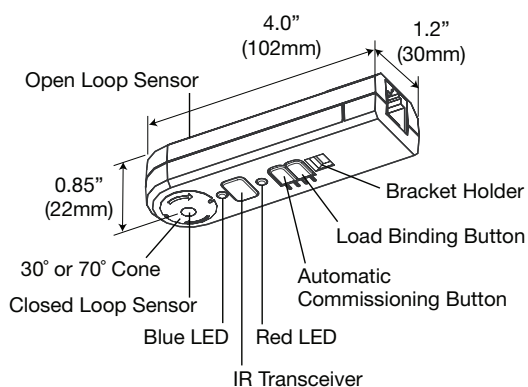
LOCATION/
TYPE

SPECIFICATIONS

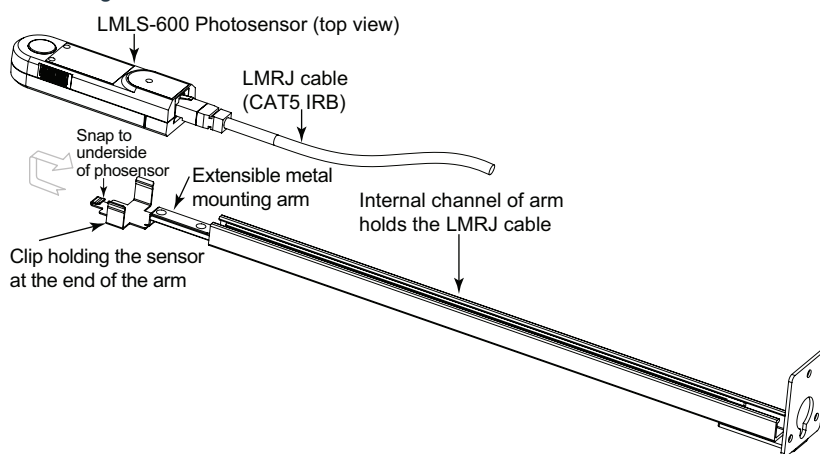
- Input voltage: 24 VDC from DLM local network
- Current consumption: 7 mA
- DLM local network connection: 1 RJ45 port
- Digital multi-band photosensor range: 1–10,000 fc (10–107,000 lux)
- Spatial response:
 - Closed loop, selectable 70° or 30°
 - Open loop, 60°
- LED status and configuration indicators
- Infrared (IR) transceiver
- Weight: 1.1 oz (31 g)
- Operating conditions: for indoor use only; 32–131°F (0–55°C); less than 90% RH, non-condensing
- UL and cUL listed
- FCC part 15 compliant
- Five year warranty

DIMENSIONS, CONTROLS, & MOUNTING

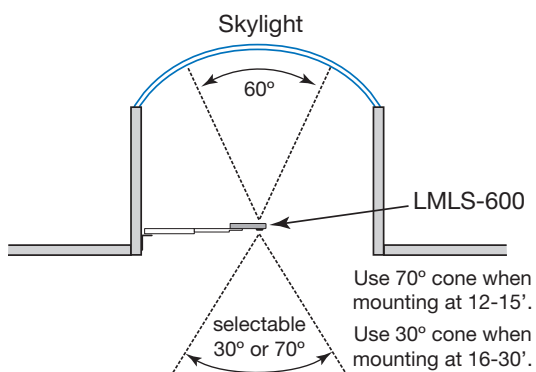
Product Dimensions and Controls



Mounting



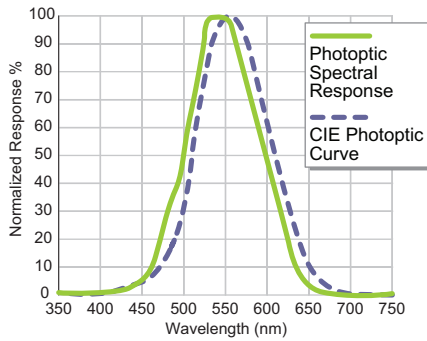
PLACEMENT



PHOTODIODE RESPONSE

Spectral Response

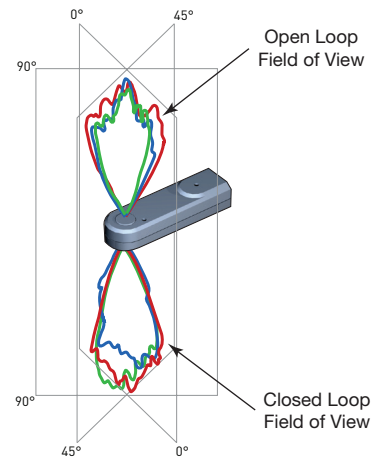
The photodiodes detect just visible light, which ensures accurate lighting control.



Spatial Response

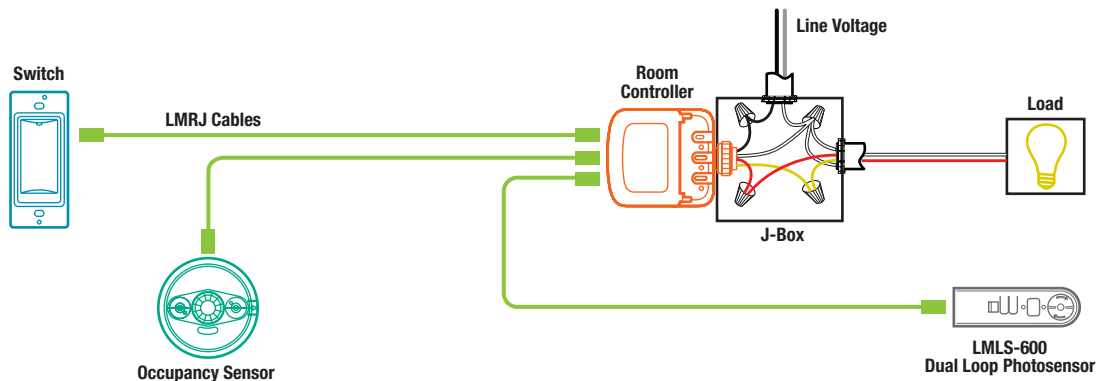
Evenly distributed spatial response of each sensor ensures accurate light level detection.

Shown with 70° cone for closed loop sensor.



CONNECTING

Sample Connection Diagram for On/Off Switching Application



ORDERING INFORMATION

Catalog #	Description
<input type="checkbox"/> MLM-600	Dual Loop Switching and Dimming Photosensor
<input type="checkbox"/> LMCT-100-2	Wireless Configuration Tool