LEVITON®

Smart Ceiling Mount PIR and Multi-Technology (M/T) Sensors (CMS)
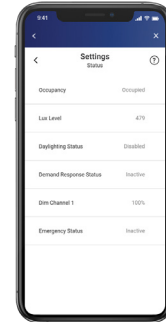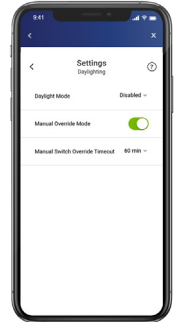

PIR-Only Sensor   Multi-Tech Sensor   Light Pipe   Status Screen   Daylighting Screen

Description

The Leviton Smart Ceiling Mount Sensors (CMS) offer high performance, code compliant, advanced room configuration in one easy-to-install device. Installers can download the Smart Sensor App for quick-and-easy room configuration and testing with any iOS or Android device.

The CMS's features meet advanced design requirements for standalone occupancy/vacancy sensing and ambient light hold-OFF applications offering easy configuration and operational testing for occupancy/vacancy sensing, options for one or two ambient light hold-OFF zones, area control, demand response, plug load or receptacle control, and UL924 emergency lighting.

Easy Room Configuration

CMS allows you to configure the sensor based on how the space is used and to meet energy code requirements. All configuration is done using the Smart Sensor App. The Leviton Smart Sensor App is compatible with both Android and iOS smartphones or tablets. The app is easy to use with simple, intuitive on-screen menu options.

- Ambient Light Hold-OFF Calibration (AutoCal)
- Passive infrared (PIR) and ultrasonic (U/S) sensor sensitivity adjustments to reduce false ONs and false OFFs
- Ability to wirelessly network with other CMS and Smart Room Controllers to expand FOV coverage
- Define inputs as manual control, demand response, or emergency lighting
- PLVSW Low Voltage Keypads and SBK00 Wireless Switch can be used in manual-ON applications

Features

- Can be used to comply with IECC, ASHRAE 90.1. and 2022 Title 24, Part 6 requirements:
  - Occupancy/vacancy sensing
  - Demand response
  - Plug load or receptacle control
- Available in 450 to 2,000 square foot field-of-view units
- All configuration is done using the Smart Sensor App
- For larger spaces, up to five Smart Ceiling Mount Sensors and Smart Ceiling Mount Room Controllers can be connected wirelessly to expand the FOV up to 10,000 sq ft
- Passive infrared (PIR) and multi-tech (PIR + ultrasonic) models available
- Manual area control available for 3-way/multi-way applications with the PLVSW Low Voltage Keypads or SBK00 Wireless Switch (must all be same style)
- For dual relay models (AC205-DMW and AC220-DMW), two keypads can be connected for manual control of each relay/ lighting zone
- UL924 listed for emergency lighting:
  - Can be connected to BMS (Building Management System) or any contact closure to force the lights full ON in case of emergency
- Ambient light hold-OFF
- AutoCal feature—Digital Daylighting Level automatically calibrates photocell to specified lighting design
- Two light pipes are included for both open (angled) and closed loop (flat and angled) ambient light hold-OFF
  - The angled light pipe provides directional fine tuning and alignment to natural light source for closed loop applications
- Includes two interchangeable lenses for 8-12' mounting heights and 13-20' mounting heights as well as aisleway masks

Features (Cont'd)

- Ladderless Commissioning™ and programming through Bluetooth-enabled iOS or Android smart devices
- Visual RGB LED indicator for status and troubleshooting
- Scheduling:
  - Change level, operating mode, daylighting mode (based on day of week and/or time of day)
- Easily test room configuration using a smart device as a calibration, measurement and testing tool
- Connect an OPP20 Power Pack to a two circuit room controller for a plug load control solution
- Industry-exclusive H.I.S. (High Inrush Stability) technology
  - Tested to 1.2 million switching cycles under standard loads
  - Zero-crossing circuitry for extended life of the relay
  - Latching relay provides dependability and robust performance for all load types
- Industry-exclusive "fail safe" circuitry: in the event of product failure, return-to-close feature causes the relay to default ON which eliminates life safety concerns

App Features

Download the Smart Sensor App to an iOS or Android smart device and pair to the CMS using Bluetooth technology.

- Create custom templates for quick multi-room replication of sensor settings
- Select between auto-ON/auto-OFF and manual-ON/auto-OFF
- Set occupancy sensor time-out
- Enable/disable receptacle/HVAC control for secondary relay
- Initiate field-of-view walk test
- Select sensing technology for either PIR, U/S or multi-tech (PIR and U/S)
  - Set PIR or U/S sensitivity independently
- Monitor status of all inputs
  - Integrated occupancy sensor(s)
  - Integrated photocell
  - Local wall keypad
  - Plug load
  - Emergency UL924
  - Demand response
- Enable 24 hour automatic calibration
- Set the offset of the secondary daylighting zone based off the primary daylighting zone
- Daylighting adjustments: open loop, closed loop, increase/decrease DDL
- Manually adjust DDL set point to fine tune for room type after auto-configuration
- Over-the-Air (OTA) updates: allows user to update SRC firmware in the field via the App
- Reset to factory defaults
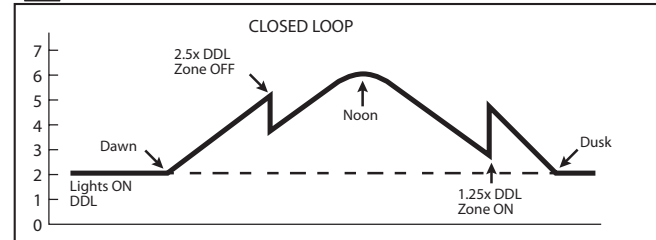
Photocell Operation
Open Loop - Angled Light Pipe
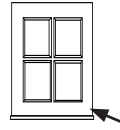
Note: Long side of angled light pipe must face toward natural light source (window)
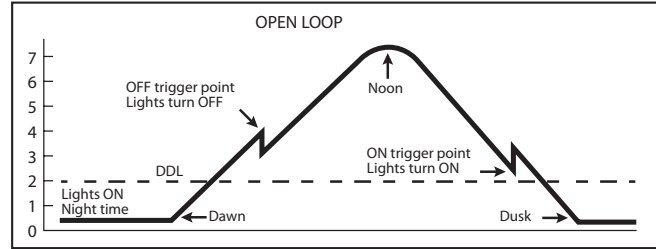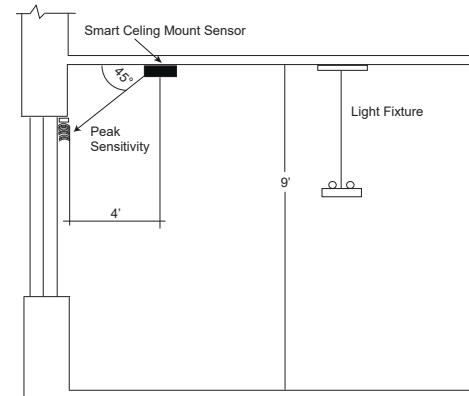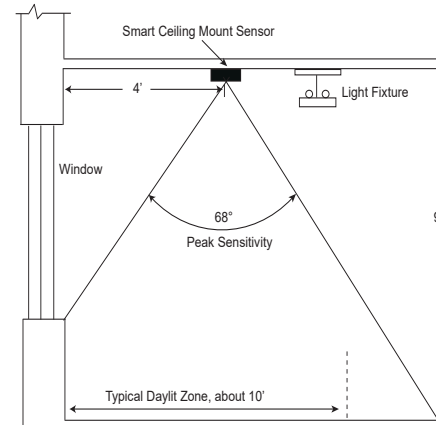

Closed Loop - Flat Light Pipe

Photocell Placement*

Open Loop Application - Angled Light Pipe

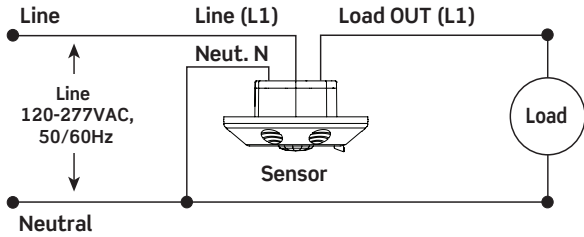*May require more than one occupancy sensor for total room coverage

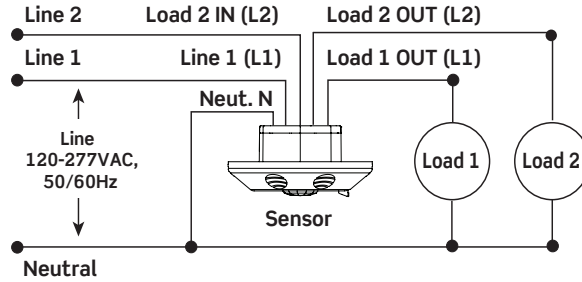### Closed Loop Application - Flat Light Pipe

Wiring Diagrams

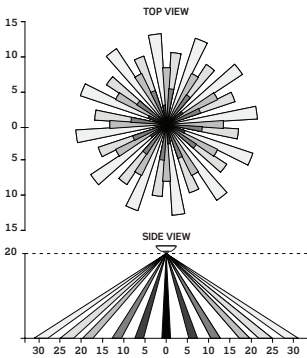### Single Relay Models

Line Voltage

Line

Line (L1)

Load OUT (L1)

Neut. N

Line
120-277VAC,
50/60Hz

Sensor

Load

Neutral

Dual Relay Models

Line Voltage (both lines MUST be fed from the same phase)

Line 2

Load 2 IN (L2)

Load 2 OUT (L2)

Line 1

Line 1 (L1)

Load 1 OUT (L1)

Neut. N

Line
120-277VAC,
50/60Hz
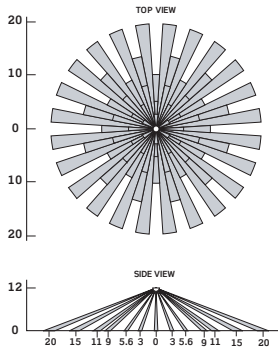
Sensor

Load 1

Load 2

Neutral

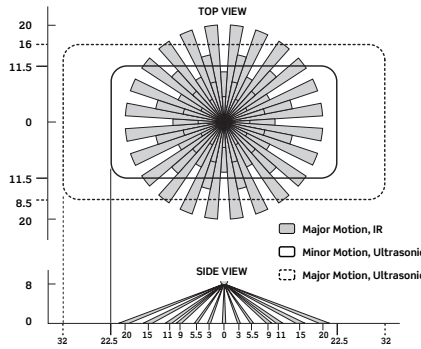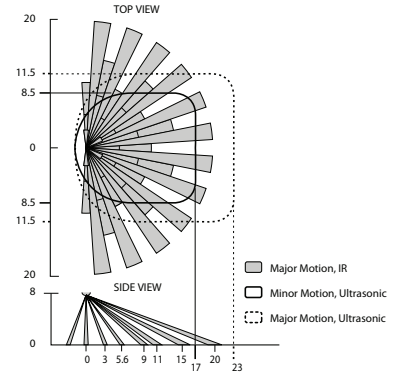**0-10V runs CLASS 1 or CLASS 2 per NEC standards**

Field of View Diagrams

Mid-Range Lens
for PIR & Multi-Tech Models at
20' Mounting Heights
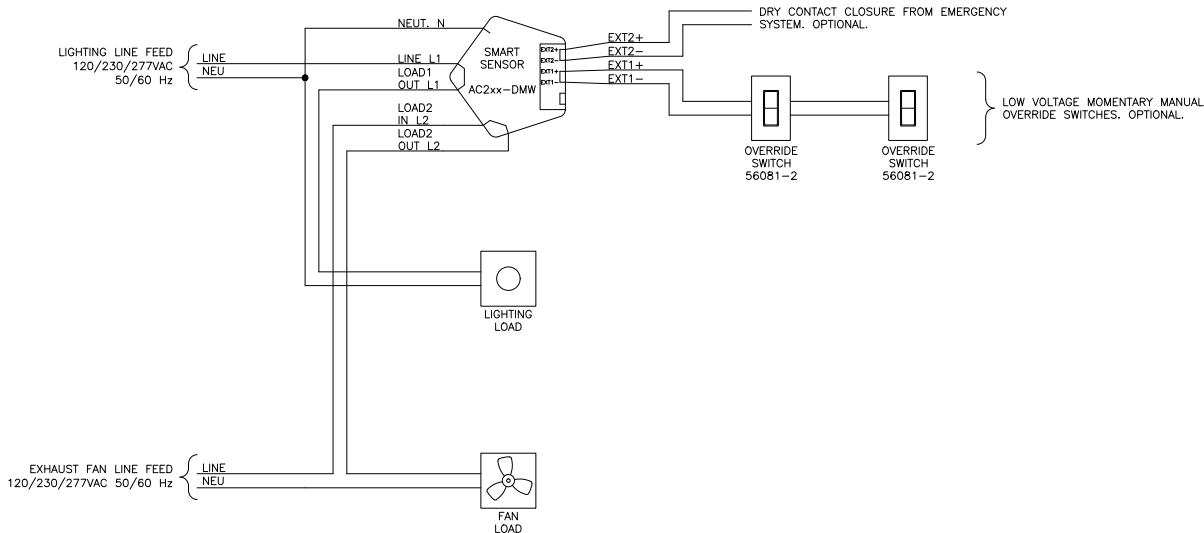(Red)

Extended Range Lens
for PIR Models
(Black)

Extended Range Lens
for Multi-Tech Models
(Black)

■ Major Motion, IR
□ Minor Motion, Ultrasonic
⬚ Major Motion, Ultrasonic

Extended Range Lens
for Multi-Tech Models
with 180° Mask
(Black)

■ Major Motion, IR
□ Minor Motion, Ultrasonic
⬚ Major Motion, Ultrasonic

Application Diagrams

Dual Relay CMS With Override Switch and UL924 Connection

LIGHTING LINE FEED
120/230/277VAC
50/60 Hz

LINE
NEU

NEUT. N

LINE L1

LOAD1
OUT L1

LOAD2
IN L2

LOAD2
OUT L2

SMART
SENSOR
AC2xx-DMW

EXT2+
EXT2-
EXT1+
EXT1-

DRY CONTACT CLOSURE FROM EMERGENCY
SYSTEM. OPTIONAL.

LOW VOLTAGE MOMENTARY MANUAL
OVERRIDE SWITCHES. OPTIONAL.

OVERRIDE
SWITCH
56081-2

OVERRIDE
SWITCH
56081-2

LIGHTING
LOAD

EXHAUST FAN LINE FEED
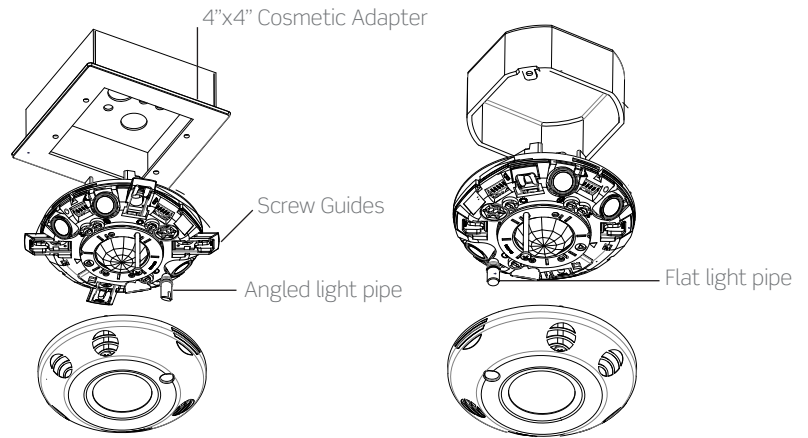120/230/277VAC 50/60 Hz

LINE
NEU

FAN
LOAD

Application Diagrams - (Cont'd)

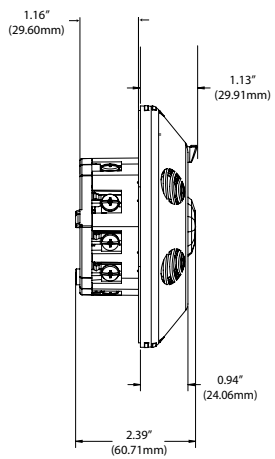### CMS with 3-way Override Switch and UL924 Connection
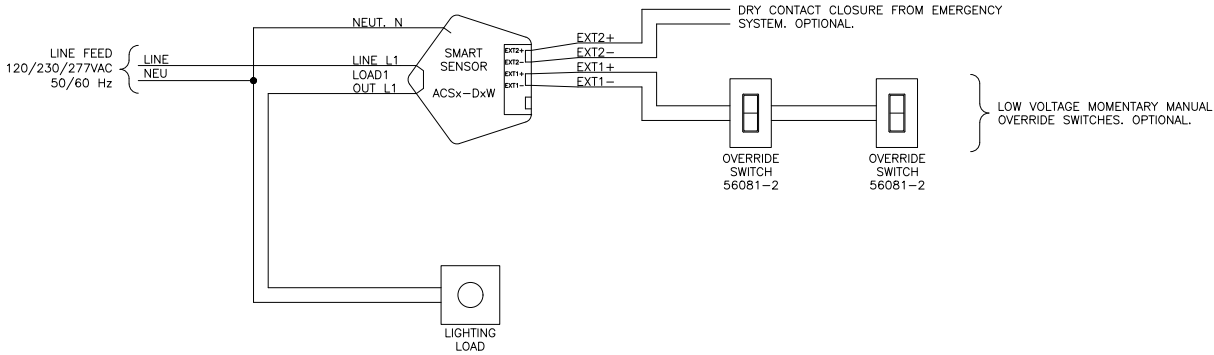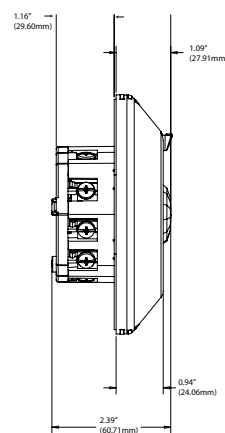

Installation

- Easy installation into junction boxes with Leviton-exclusive screw guides, coasters and terminal blocks
- Front cover snaps on and off for ease of installation
- Sensors conveniently mount to a standard 4" x 4" square or octagon electrical box per NEC standards. The square junction box requires a mud ring
- Color matching via paintable front cover - does not affect warranty as long as the room controller is properly masked

4"x4" Cosmetic Adapter

Screw Guides

Angled light pipe

Flat light pipe

Dimensions

1.16"
(29.60mm)

1.13"
(29.91mm)

4.80"
(121.92mm)

0.94"
(24.06mm)

2.39"
(60.71mm)

Multi-Tech
Occupancy Sensor

1.16"
(29.60mm)

1.09"
(27.91mm)

4.81"
(122.21mm)

0.94"
(24.06mm)

2.39"
(60.71mm)

PIR-Only
Occupancy Sensor

Wireless Companion Switch and Low Voltage Keypads*
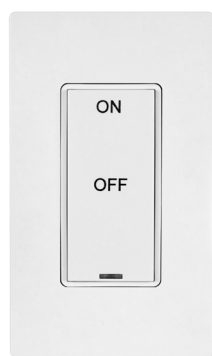
SBK00-CSW	PLVSW-1LW	PLVSW-2LW

*Available in 1 or 2 button options. See ordering information or the Low Voltage Keypads data sheet for more information.

Specifications

Electrical			
Input Voltage	120V, 50/60Hz	230V, 50Hz	277V, 50/60Hz
Load Rating	8A, LED/Electronic Ballast, 800W/VA, Tungsten, Ballast, 1/4 HP Motor	6A/6AX, LED/Electronic Ballast, Magnetic Ballast, 1,200W/VA, 1/3 HP Motor	5A, LED/Electronic Ballast, 1,200VA, 1/3 HP Motor
Current Consumption	60-30mA		
General			
Daylighting Zones	Single and dual zone ambient light hold-OFF available		
Field of View	PIR		MT
	450 sq ft to 1,500 sq ft with included lenses		500 sq ft and 2,000 sq ft
Ultrasonic Frequency	32 Khz		
Photocell	0-200FC (0-2,000 LUX)		
Wireless			
Bluetooth	2.4 Ghz, 50ft max		
Environmental			
Operating Temperature	32 to 104° F (0 to 40° C)		
Storage Temperature	-15 to 160° F (-26 to 71° C)		
Relative Humidity	0-90% non-condensing		
Other			
Energy Codes	Can be used to comply with IECC, ASHRAE 90.1 and 2022 Title 24, Part 6 occupancy/vacancy sensing, demand response and plug load or receptacle control requirements		
Listings	UL773A (Occupancy Standard), UL924 (Emergency Equipment), cUL listed, NOM certified, RoHS compliant, NY LLC48 compliant		
Warranty	5-Year Limited Warranty		

Ordering Information

Smart Ceiling Mount Sensor

Cat. No.	Description
ACS15-DIW	Smart Ceiling Mount Sensor, PIR only, Switching, 1-zone, 450-1,500 sq ft, 120-277VAC
ACS05-DMW	Smart Ceiling Mount Sensor, Multi-tech, Switching, 1-zone, 500 sq ft coverage, 120-277VAC
ACS10-DMW	Smart Ceiling Mount Sensor, Multi-tech, Switching, 1-zone, 1,000 sq ft coverage, 120-277VAC
ACS20-DMW	Smart Ceiling Mount Sensor, Multi-tech, Switching, 1-zone, 2,000 sq ft coverage, 120-277VAC
AC205-DMW	Smart Ceiling Mount Sensor, Multi-tech, Switching, 2-zone, 500 sq ft coverage, 120-277VAC
AC220-DMW	Smart Ceiling Mount Sensor, Multi-tech, Switching, 2-zone, 2,000 sq ft coverage, 120-277VAC

Wireless Companion Switch

Cat. No.	Description
SBK00-CSW	Wireless Companion Switch, Battery powered, White

Low Voltage Keypads

Cat. No.	Description
PLVSW-1LW	Low Voltage Keypad, 1-button ON/OFF controller for use with Smart Ceiling Mount Room Controllers and Smart Ceiling Mount Sensors
PLVSW-2LW	Low Voltage Keypad, 2-button ON/OFF controller for use with Smart Ceiling Mount Room Controllers and Smart Ceiling Mount Sensors
RDGSW-1Ex*	1-button Color Change Kit (blank)
RDGSW-2Ex*	2-button Color Change Kit (blank)
RDGSW-1Fx*	1-button Custom Engraved Color Change Kit
RDGSW-2Fx*	2-button Custom Engraved Color Change Kit

*Replace x to indicate color: White (W), Ivory (I), Light Almond (T), Gray (G), Black (E) and Red (R). Color change kits are blank and available for custom engraving for button markings.

LES-G10711/A24-mm