

## LRD-309S

### Line Voltage SmartDIM Occupancy Sensor



#### OVERVIEW

The LRD-309S is a low-profile, fixture integrated occupancy sensor designed to control 0-10V dimmable ballasts and LED drivers. This 2-way, remote-programmable sensor is capable of providing four different occupancy sensing control schemes with fully adjustable multi-level high/low StepDIM or SmartDIM control to the integrated fixtures. SmartDIM is a state-of-the-art automatic dimming control technology developed by IR-TEC, which enables the sensor to maintain the overall ambient light level within the preset range through a smooth, flawless continuous dimming control to the connected lighting. The LRD-309S also employs an exclusive Hybrid Switching technology to allow switching the LED driver with high inrush current, up to 500,000 cycles.

The sensor will turn on the integrated lighting or ramp up to the programmed high dim or SmartDIM level when it detects the presence of an occupant or vehicle, and automatically dim the light down to the low level or shut off after the area is vacated for a period of time. The sensor can be operating even in the coldest of environments down to -40°F/°C. A two-way IR handheld remote programmer (SRP-280) allows you to easily configure sensor control schemes and settings, or download the existing settings of the sensor mounted up to 50 ft high from the floor. Four EZ-SET profiles can be stored in the SRP-280 for quick setup and parameter adjustment of multiple sensors.

#### FEATURES

- Omni-directional quad element infrared sensor
- Digital data control ambient light sensor built-in
- 2-way IR remote programmable sensor setting
- Hybrid switching for high inrush current driver
- 4 occupancy sensing control schemes available
- SmartDIM or multi-level high/low dim control
- Remote programmable SmartDIM level setting
- Remote programmable range up to 33 ft high
- Beeping or light flashing acknowledgement
- Available with interchangeable lens options
- Fixture integrated or 1/2" hole nipple mount

#### APPLICATION

##### Occupancy Sensing Control with 0-10V Multi-level or Continuous Dimming

The LRD-309S sensor can be integrated with an OEM lighting fixture to provide multiple occupancy sensing control schemes with multi-level or continuous dimming by sensing the presence and movements of the occupant and the daylight available in the space. A basic wiring diagram is included at next page for reference. Consult with an IR-TEC team member if a more complex control is required.

### SmartDIM

SmartDIM is an exclusive continuous dimming control algorithm developed by IR-TEC to provide smooth and flawless automatic dimming performance. The output of the controlled lighting will be constantly adjusted to maintain the overall ambient light level within the pre-programmed range by sensing the daylight available in the space.

### CONTROL SCHEMES

The LRD-309S can be programmed by the SRP-280 to control the lighting in one of the following control schemes with various conditions as set. For more details about specific control scheme, please visit [www.irtec.com](http://www.irtec.com) or contact an IR-TEC team member directly.

Mode	Day <sup>1</sup>	Night <sup>2</sup>	Remarks
ON/OFF	Vac: OFF Occ: ON/OFF*	Vac: OFF Occ: ON	For non-dimmable lighting *ALS enabled
OSO	Vac: LD Occ: SD/HD	Vac: LD Occ: SD/HD	LD: Low Dim, HD: High Dim SD: SmartDIM
OSLA	Vac: OFF Occ: SD/OFF	Vac: LD Occ: SD/HD	
OSLATO	Vac: OFF Occ: SD/OFF	Vac: LD*-OFF Occ: SD/HD	*Low Dim during Time Off delay

**ON/OFF** : ON-OFF Switching

**OSO** : Occupancy Sensing Only

**OSLA** : Occupancy Sensing at Low Ambient

**OSLATO** : Occupancy Sensing at Low Ambient with Time-Off

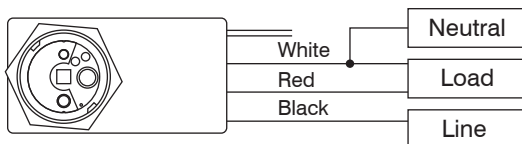
**Vac** : Vacant    **Occ** : Occupied

<sup>1</sup> While ambient light level is higher than the threshold.

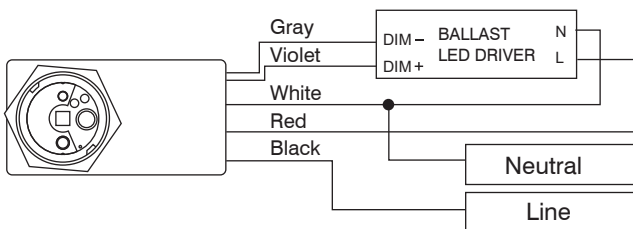
<sup>2</sup> While ambient light level is lower than the threshold.

### WIRING DIAGRAM

#### Non-dimmable Lighting (ON-OFF Switching only)



#### 0-10V Dimmable Lighting

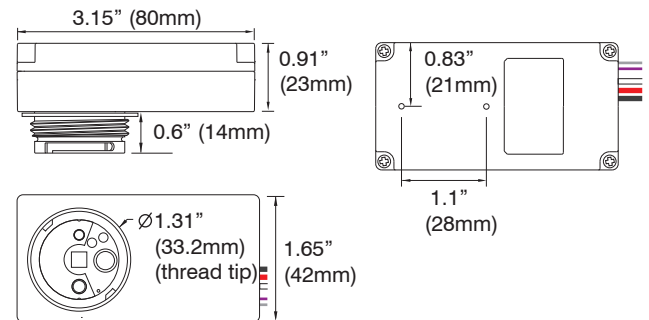


### LENS OPTIONS

The LRD-309S requires lens, following lens options available provide different coverage at different mounting height (H). Please purchase lens separately.

Letter	Lens	Shape	Mounting Height		Coverage
a	Standard	Cone	8~15 ft.	2.4~4.5m	2X height
b	Extra wide	Cone	8~10 ft.	2.4~3.0m	6X height
c	High bay	Cone	15~30 ft.	4.5~9.0m	3X height
d	Standard	Round	8~20 ft.	2.4~6.0m	2X height
f	Extra wide	Dome	8~20 ft.	2.4~6.0m	4X height
g	Aisle way	Arch	8~40 ft.	2.4~12.0m	3X height
h	High bay	Dome	30~50 ft.	9.0~15.0m	1X height
i	Long aisle	Arch	8~10 ft.	2.4~3.0 m	6X height

### DIMENSIONS



### SPECIFICATIONS

Power supply	120/277VAC, 50/60Hz
Maximum load @ -40°F~131°F (-40°C~55°C)	Incandescent/Halogen - 800/1200W(VA)@120/277V
	Fluorescent Ballast/CFL - 800/1200W(VA)@120/277V
	Ballast Electronic (LED) - 540/1200VA@120/277V
Maximum load @ 131°F~158°F (55°C~70°C)	Incandescent/Halogen - 500/750W(VA)@120/277V
	Fluorescent Ballast/CFL - 500/750W(VA)@120/277V
	Ballast Electronic (LED) - 500/750VA@120/277V
Infrared sensor	Digital quad-element pyroelectric sensor
Photo sensor	Digital ambient light sensor
HIC protection	Max. 80A for 16.7msec.
Dim control output	0-10V, ±5%, isolated, max. 25mA
Detectable speed	1~10 ft./sec. (0.3 ~ 3 m/sec.)
Mounting height	Subject to the lens type applied.
Detection range	Subject to the lens type and mounting height
Remote range	33 ft. (10m) indoor, no backlight
Op. humidity	Max. 95% RH
Op. temperature	-40°F~158°F (-40°C~70°C)
Dimensions	3.15"x1.65"x1.46" (80x42x37mm)