



## OVERVIEW

The ON-LRD-609SA series is an OS-NET Sensor (ONS) packed with multiple sensing control functionalities including occupancy/vacancy sensing, daylight harvesting, bi-level StepDIM or continuous SmartDIM, and wireless mesh networking capability for top-notch intelligent lighting control.

The sensor not only controls the connected lighting in the programmed mode independently when it detects the presence of an occupant/vehicle or change of ambient light level, but also acts as a network node to broadcast the OS-NET command for group lighting activation wirelessly. All network setup, sensor grouping and setting; including sensing control scheme, delay times, ambient light level threshold, ramp up/fade down speed, sensitivity, burn-in duration...etc. can be configured via a 2-way handheld remote programmer from the floor.

The sensor comes with a universal mounting design which provides complete installation flexibility. Changeable lens options allow the sensor to be mounted at various heights with different detection patterns for all applications. With ON-LRD-609SA, you can effortlessly achieve energy efficient, code-compliant smart lighting control through a wireless sensor mesh network effortlessly deployed while installing the OS-NET enabled lighting.

## FEATURES

- Omni-directional pyroelectric infrared sensor
- Line voltage operation with wireless connectivity
- All functionalities in one and one for all controls
- 2-way IR remote programming tool for all settings
- Single device can be members of multiple groups
- Hybrid switching protects from high inrush current
- SmartDIM or high/low multi-level StepDIM control
- Exceptionally long range of remote programming
- IP-66 rating universal mounting design
- Multiple lens options allow broadest applications

## APPLICATION

- Multiple Sensing Controls with 0-10V SmartDIM or Bi-level StepDIM**

The ON-LRD-609SA sensor can be flexibly integrated with OEM luminaire to provide multi-scheme occupancy/vacancy/daylight sensing, with continuous or multi-level dimming control to the connected lighting and the assigned groups via OS-NET wireless communication.

# ON-LRD-609SA series

## Line Voltage OS-NET Sensor



### SENSING CONTROL SCHEMES

The ON-LRD-609SA employs a top-notch digital passive infrared (PIR) sensor to detect the occupancy status within its range and control the connected light in one of the following schemes, while also transmits wireless command for lighting group activation control through mesh network. For more details of specific control, please visit [www.irtec.com](http://www.irtec.com) or contact an IR-TEC team member directly.

Mode	Status	Day*	Night*	Remarks
ON/OFF	Vacant	OFF	OFF	For non-dimmable lighting
	Occupied	ON/OFF <sup>1</sup>	ON	'ALS enabled
OSO	Vacant	LD	LD	LD : Low Dim, HD : High Dim
	Occupied	SD/HD	SD/HD	SD : SmartDIM
OSLA	Vacant	OFF	LD	Automatic low dim during vacant nighttime
	Occupied	SD/OFF	SD/HD	
OSLATO	Vacant	OFF	LD-OFF	Low dim during Time Off (TO) delay
	Occupied	SD/OFF	SD/HD	
DSVM	Vacant	OFF	HD-LD	Dusk - Virtual midnight : High Dim
	Occupied	OFF	HD-LD	Virtual midnight - Dawn : Low Dim
DSC	Vacant	OFF	SD/HD	Occupancy sensing is disabled, Daylight sensing control only
	Occupied	OFF	SD/HD	
VSC	Vacant	OFF	OFF	Press OS-NET Button to turn on the light, automatic shut-off
	Occupied	Manual	Manual	
OSB	Vacant	OFF	OFF/LD <sup>2</sup>	<sup>2</sup> As background lighting before the entire group area is vacant
	Occupied	OFF	SD/HD	
OFF	Vacant	OFF	OFF	Occupancy sensing enabled, but the light stays off all the time
	Occupied	OFF	OFF	

\*Day/Night: While ambient light level is higher/lower than the threshold set

- ON/OFF : On-Off Switching
- OSO : Occupancy Sensing Only
- OSLA : Occupancy Sensing at Low Ambient
- OSLATO : Occupancy Sensing at Low Ambient with Time-Off
- DSVM: Daylight Sensing with Virtual Midnight
- DSC: Daylight Sensing Control
- VSC: Vacancy Sensing Control
- OSB: Occupancy Sensing with Background
- OFF: Light off all the time

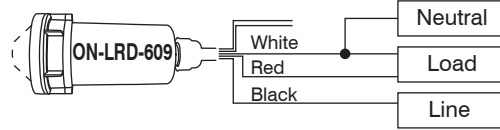
### LENS OPTIONS

The ON-LRD-609SAX series is available with following lens options which provide different coverage at different mounting height (H). When adding the lens code, the lens is then automatically shipped with the sensor.

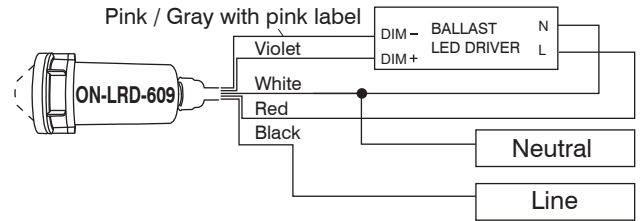
Lens	Shape	Mounting Height	Coverage
A	Standard	Cone	8~15 ft. 2.4~4.5m 2X height
B	Extra wide	Cone	8~10 ft. 2.4~3.0m 6X height
C	High bay	Cone	15~30 ft. 4.5~9.0m 3X height
D	Standard	Round	8~20 ft. 2.4~6.0m 2X height
F	Extra wide	Dome	8~20 ft. 2.4~6.0m 4X height
G	Aisle way	Arch	8~40 ft. 2.4~12.0m 3X height
H	High bay	Dome	30~50 ft. 9.0~15.0m 1X height
L	Long aisle	Arch	8~10 ft. 2.4~3.0m 6X height

### WIRING DIAGRAM

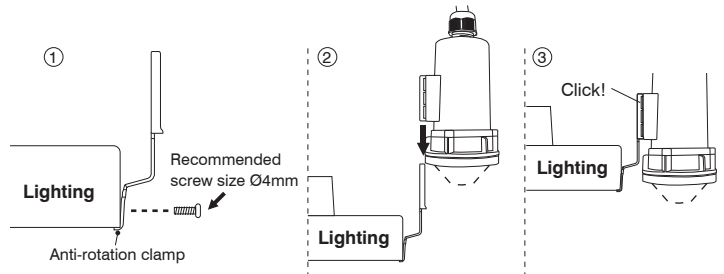
#### Non-dimmable Lighting (ON/OFF Switching only)



#### 0-10V Dimmable Lighting



### SENSOR MOUNTING



### 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~140°F (55°C~60°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 pyroelectric sensor
Dim control	0-10V, ±5%, isolated, max 25mA
HIC protection	Max. 80A for 16.7msec.
Wireless protocol	Modified Zigbee Light Link (ZLL)
Radio frequency	2405~2480MHz
Number of channel	16ch
Radio range	*50/300 ft. @indoor/outdoor, open space
Radio power output	6.98dBm
Detectable speed	0.5~10 ft./sec. (0.15 ~ 3 m/sec.)
Mounting height	Subject to the lens applied
Detection range	As per lens applied and mounting height
Remote range	Typ. 33 ft (10 m), indoor with no backlight
Op. humidity	Max. 95% RH
Op. temperature	-40°F~140°F (-40°C~60°C)
Dimensions	L2.56" x W2.87" x H5.16" (L65 x W73 x H131mm)

\*Actual radio range may differ depending on environmental conditions.

[www.irtec.com](http://www.irtec.com)

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