



OVERVIEW

The ON-LRD-509 series is a standard device of IR-TEC's OS-NET wireless mesh network solution packed with multiple functionalities including occupancy/vacancy sensing, daylight harvesting, bi-level StepDIM or continuous SmartDIM, and wireless network communication for top-notch intelligent lighting control.

The sensor not only controls the connected lighting in the programmed mode independently, but also acts as a network node to broadcast OS-NET commands for group control wirelessly. Each sensor can be assigned to be member of maximum 4 groups for coordinated control. All sensor setting, including sensitivity, burn-in duration, delay time, ambient light level, sensing control mode, grouping/regrouping, can be configured in individual or group basis via a 2-way handheld remote programmer from the floor.

Numerous design innovations allow the sensor to be flexibly integrated with an OEM luminaire, or mounted on the ceiling in a variety of options. Interchangeable lenses allow the sensor to be mounted at various heights with different detection patterns for all applications. With ON-LRD-509, you can effortlessly achieve an energy efficient, code-compliant smart lighting control through a state-of-the-art wireless sensor mesh network established by installing OS-NET enabled lighting.

FEATURES

- Omni-directional digital quad element sensor
- Digital data control ambient light sensor built-in
- Line voltage operation with wireless connectivity
- 2-way remote programmable sensor/group setup
- One sensor can be members of multiple groups
- Hybrid switching technology with 0-10V control
- SmartDIM or high/low multi-level StepDIM control
- Exceptionally long remote programming range
- Flexible fixture integration or ceiling mount options
- Interchangeable lens options for all applications

APPLICATION

- ☒ **Multiple Sensing Controls with 0-10V Continuous Dimming**
- ☒ **Multiple Sensing Controls with 0-10V Multi-level Dimming**

The ON-LRD-509 sensor can be provide multi-mode 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-509 series

Line Voltage OS-NET Sensor



OPERATION

The ON-LRD-509 employs a top-notch digital passive infrared (PIR) sensor with interchangeable lens to detect the presence and movements of human/vehicle within detection range. An OS-NET module built-in enables the sensor as a node of wireless lighting control network. The sensor can be easily programmed to control the connected light in one of the following modes. For more details of specific control, please visit www.irtec.com or contact an IR-TEC team member directly.

Mode	Day ¹	Night ²	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: OFF/SD	Vac: LD Occ: SD/HD	
OSLATO	Vac: OFF Occ: OFF/SD	Vac: OFF Occ: HD/SD-LD*	Low dim during Time Off (TO) delay
DSVM	Vac: OFF Occ: OFF	Vac: HD-LD Occ: HD-LD	Dusk - Virtual midnight : High Dim Virtual midnight - Dawn : Low Dim
DSC	Vac: OFF Occ: OFF	Vac: HD/SD Occ: HD/SD	Occupancy sensing disabled, Daylight sensing control only
VSC	Vac: OFF Occ: Manual	Vac: OFF Occ: Manual	Require pressing OS-NET Button to turn on the light, automatic shut-off
OFF	Vac: OFF Occ: OFF	Vac: OFF Occ: OFF	Occupancy sensing enabled, Light stays off

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 **OFF** : Light off all the time

¹ While ambient light level is higher than the threshold.

² While ambient light level is lower than the threshold.

Mounting Options

The ON-LRD-509xX series can be mounted into the ceiling or integrated with an OEM luminaire. The mounting options are available by combining a specific mounting bracket from the table below. The bracket will be shipped with the device when ordered with the respective code.

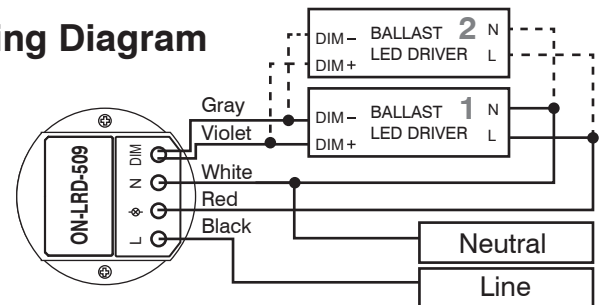
Code	Mounting Option	Mounting Bracket
F	Fixture Integrated	---
W	IP-66 Fixture Integrated	---
E	Fixture External	EMB-500
P	IP-66 Fixture External	PMB-500
S	Ceiling Surface	SMB-500
C	Junction Box	CMB-500

Lens Options

The ON-LRD-509xX 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	8~50 ft.	2.4~15.0m	1X height

Wiring Diagram



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~149°F (55°C~65°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
◆Dim control	0-10V, 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~158°F (-40°C~70°C)
Dimensions	Ø2.36" x H1.45" (Ø60 x H37mm)

*Max load for operating temperature at 131°F~158°F(55°C~70°C)

◆Dim voltage tolerance is ±5%

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