



## OVERVIEW

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

This device not only controls the connected lighting in the programmed mode when any OS-NET sensor of the group detects the presence of an occupant/vehicle, but also acts as a network node to broadcast OS-NET commands for group control wirelessly. Each controller can be assigned to be member of maximum 4 groups for coordinated control. All control settings, including burn-in duration, delay time, ambient light level, grouping/regrouping, dimming control mode, can be configured in individual or group basis via a 2-way handheld remote programmer from the floor.

Numerous design innovations allow the controller to be flexibly integrated with an OEM luminaire, or mounted on the ceiling in a variety of options. By grouping the ON-LCD-509 together with OS-NET sensor, 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

- Digital data control ambient light sensor built-in
- Line voltage operation with wireless connectivity
- 2-way remote programmable device/group setup
- One controller can be members of multiple groups
- Hybrid switching control with 0-10V dimming
- SmartDIM or high/low multi-level StepDIM control
- Exceptionally long remote programming range
- Flexible fixture integration or ceiling mount options

## APPLICATION

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

The ON-LCD-509 sensor can be flexibly integrated with OEM luminaire or mounted on the ceiling in a variety of options to provide multi-mode bi-level or continuous dimming control to the connected lighting and the assigned groups together with the OS-NET sensor via wireless communication.

# ON-LCD-509 series

## Line Voltage OS-NET Sensor



### OPERATION

The ON-LCD-509 is an alternative network device of OS-NET, which contains all control functionalities of an OS-NET sensor but without occupancy sensing capability. An OS-NET module built-in makes the device as a node of wireless lighting control network. The controller can be easily programmed to control the connected light with associated OS-NET sensor in one of the following modes. For more details of specific control, 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
<b>ON/OFF</b>	Vac: OFF Occ: ON/OFF*	Vac: OFF Occ: ON	For non-dimmable lighting *ALS enabled
<b>OSO</b>	Vac: LD Occ: SD/HD	Vac: LD Occ: SD/HD	LD: Low Dim, HD: High Dim SD: SmartDIM
<b>OSLA</b>	Vac: OFF Occ: OFF/SD	Vac: LD Occ: SD/HD	
<b>OSLATO</b>	Vac: OFF Occ: OFF/SD	Vac: OFF Occ: HD/SD-LD*	Low dim during Time Off (TO) delay
<b>DSVM</b>	Vac: OFF Occ: OFF	Vac: HD-LD Occ: HD-LD	Dusk - Virtual midnight : High Dim Virtual midnight - Dawn : Low Dim
<b>DSC</b>	Vac: OFF Occ: OFF	Vac: HD/SD Occ: HD/SD	Occupancy sensing disabled, Daylight sensing control only
<b>VSC</b>	Vac: OFF Occ: Manual	Vac: OFF Occ: Manual	Require pressing OS-NET Button to turn on the light, automatic shut-off
<b>OFF</b>	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

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

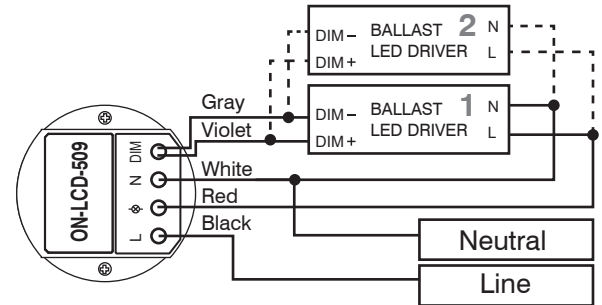
<sup>2</sup> While ambient light level is lower than the threshold.

### Mounting Options

The ON-LRD-509NX 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
<b>F</b>	Fixture Integrated	---
<b>W</b>	IP-66 Fixture Integrated	---
<b>E</b>	Fixture External	<b>EMB-500</b>
<b>P</b>	IP-66 Fixture External	<b>PMB-500</b>
<b>S</b>	Ceiling Surface	<b>SMB-500</b>
<b>C</b>	Junction Box	<b>CMB-500</b>

### Wiring Diagram



NOTE: Associated OS-NET sensor is required to achieve the ON/OFF, OSO, OSLA, OSLATO, or VSC mode.

### 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
Dim control	0-10V, non-isolated, max 25mA
HIC protection	Max. 80A for 16.7msec.
Wireless protocol	Modified Zigbee Light Link (ZLL)
Radio frequency	2.4 GHz
Radio range	50/300 ft @indoor/outdoor, open space
Remote range	Typ. 33 ft (10 m), indoor with no backlight
Op. humidity	Max. 95% RH
Op. temperature	-40°F~149°F (-40°C~65°C)
Dimensions	Ø2.36" x H1.45" (Ø60 x H37mm)