

OVERVIEW

The nLight® AIR rES7 sensor is an in-fixture, low voltage, digital sensor providing embedded wireless lighting control, analog or digital dimming, occupancy detection and daylight harvesting capabilities. The rES7 is designed for mounting heights up to 20 ft in indoor luminaires. The rES7 sensor provides Passive Infrared (PIR) occupancy detection over a 15-20 ft (4.57 - 6.10 m) radial coverage pattern and photocell light level detection in one compact low profile design with optional Dual Technology, which adds Microphonics™ to PIR detection. The rES7 sensor is ideal for occupancy and daylighting control in suspended or recessed luminaires.

SMART SENSOR FEATURES

- 100% digital PIR detection with optional Dual Technology featuring Microphonics
- Combined daylight and occupancy sensor
- Fully dimmable via digital or analog dimming protocols, providing the right amount of light for the application and to optimize energy savings
- Optional UL 924 emergency functionality via EM option, which eliminates wiring for sensing normal power¹

INSTALLATION FEATURES

- Wireless communication enables simple retrofits - no communication wires to pull between devices
- Integrated at the factory, no onsite wiring required
- Optional external 900MHz antenna for unique applications
- Simple app-based configuration of space behaviors

ADVANCED WIRELESS FEATURES

- Devices intercommunicate to provide grouped-response to motion and on/off and dimming response to daylight conditions
- Flexible sensor time delays and light levels in responding to motion and daylight conditions
- Fully compatible with other nLight AIR devices on the site
- Easy to integrate with the nLight ECLYPSE™, which provides site-wide lighting control through nLight's SensorView software and provides optional BMS integration
- Comprehensive wireless security

Warranty

Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

nLight, nLight AIR and the Acuity Controls and Acuity Brands logos are trademarks of Acuity Brands. Bluetooth is a trademark of Bluetooth SIG, Inc. used by Acuity Brands under license. Apple and the Apple logo are trademarks of Apple Inc. Android and Google Play are trademarks of Google, Inc. Other trademarks are property of their respective owners.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.



*nLight® AIR
rES7:
Fixture embedded
smart sensor*



ORDERING INFORMATION

rES7						Examples: RES7 90D G2
Series	Occupancy Detection	Coverage Type	Dimmer Type	Emergency	Antenna	
RES7 nLight AIR occupancy and daylight sensor	[blank] PIR Detection PDT Dual Tech PIR/ Microphonics	[blank] Micro 360 45 High Mount 45A High Mount Aisleway	[blank] ³ LEDcode ZT 0-10 VDC ZTS ³ 0-10VDC With Normal Power Sensing	[blank] None EM ⁴ UL924 Emergency Operation	[blank] NiTi Antenna EXT900 900MHz External Antenna	

Antenna Color ²	Angle	Options	Generation
ACWH White	90D 90° Antenna orientation	NOC Occupancy & Photocell Disabled (out-of-box)	G2 Generation 2 compatibility
ACBK Black	180D 180° Antenna orientation		

Accessories
RES7 LENS ASSM WH REPL - Replacement lens assembly, white
RES7 LENS ASSM GY REPL - Replacement lens assembly, gray

Note:

1. Normal power sensing is provided by nLight AIR devices connected to normal power in the same group. See the UL 924 Response section for more information.
2. Only Required with EXT900 option.
3. Non-EM devices with this option can be used to sense normal power for EM devices.
4. EM option not available with ZTS option.

SPECIFICATIONS

Input Power	6-50VDC, 700mW min
Dimensions	1.180" h x 2.617" w x 1.335" d
Weight	1.25 oz
Trim Color	White
Enclosure Material	Poly-Carbonate/ABS
Max Humidity	0-95% non-condensing
Operating Temperature	-20°C to 85°C
IP Rating	IP50 - Dust protected
Mounting	Fixture-Mounted
Radio Frequency	Dual Radio: 900MHz & 2.4GHz
RF Transmit Power	900Mhz: +20dBm; 2.4GHz: Variable
Wireless Standard	900MHz: IEEE 802.15.4-based 2.4GHz: Version 4.0+ of the Bluetooth specification
Security	Application Data Encryption: AES-128 bit Mutual Entity Authentication Message Confidentiality Message Authentication and Replay Prevention Limited Anonymity Complies with California Civil Code Title 1.81.26, Security of Connected Devices, approved under Senate Bill No. 327 (2018)
Regulatory Compliance	Wireless: FCC ID: 2ADCB-RMODIT3 IC: 6715C-RMODIT3 IFETEL: RCPNLNL20-2057 Safety: cULus Listed; RoHS Compliant, Non-EM: UL916; EM: UL924 and CSA-C22.2 No. 141-15; NOM Certified
Programming Tool	CLAIRITY™+ mobile app

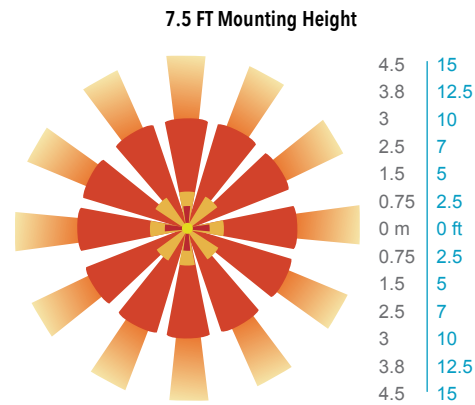
Out-Of-Box Functionality

Occupancy Control	Enabled
Microphonics (with -PDT)	Enabled
Dim to Off Time Delay	7.5 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	1%
Unoccupied Time Until Dim	2.5 Minutes
Daylighting Control	Enabled
Daylighting Set Point	10 fc
Daylighting Transition On Time	45 Seconds
Daylighting Transition Off Time	10 Minutes

COVERAGE PATTERN

Micro 360° Lens

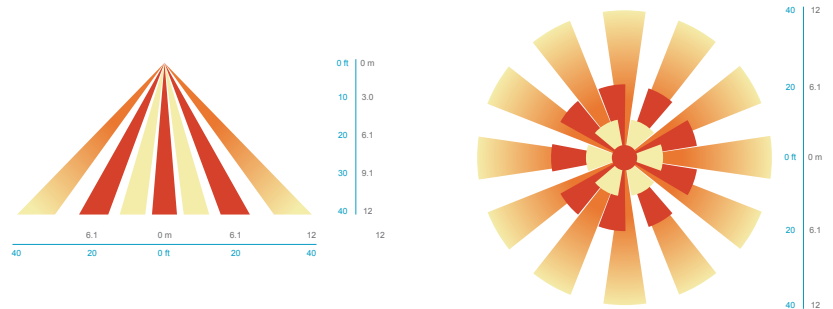
- At the 7.5 ft (2.29 m) hanging height of a typical pendant mount fixture the sensor provides 10 ft (3.05 m) radial detection of small motion. At a 9 ft (2.74 m) hanging height the radius is 12 ft (3.66 m) for small motion.
- Adequate for walking motion detection from mounting heights between 7.5 ft (2.29 m) and 20 ft (6.10 m).
- Initial detection will occur earlier when walking across sensor's field of view than when walking directly at sensor
- Initial detection of walking motion into long coverage segment will occur at distances of 2x the mounting height up to 15 ft (4.57 m) and 1.75x up to 20 ft (6.10 m). Lens assembly rotates 15° to enable adjustment in order to line up long segments.



lens rotates 15 deg to enable adjustment.

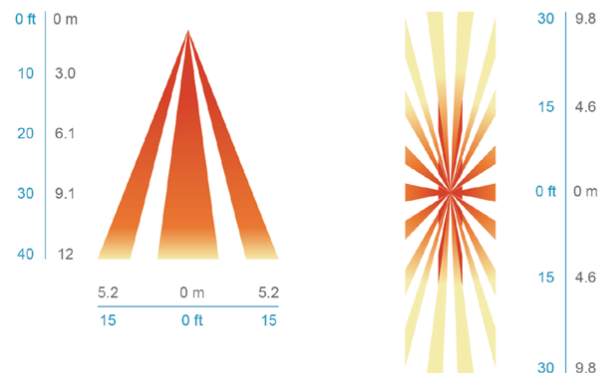
45 - HIGH MOUNT 360°

- Optimized full coverage pattern for 10 - 40 ft. (3.1 - 12 m)
- Reliable detection of large motion (e.g. pedestrian walking traffic) up to 30 ft. (9.1 m) mounting height
- Reliable detection of extra-large motion (e.g. forklift traffic) up to 40 ft. (12 m) mounting height

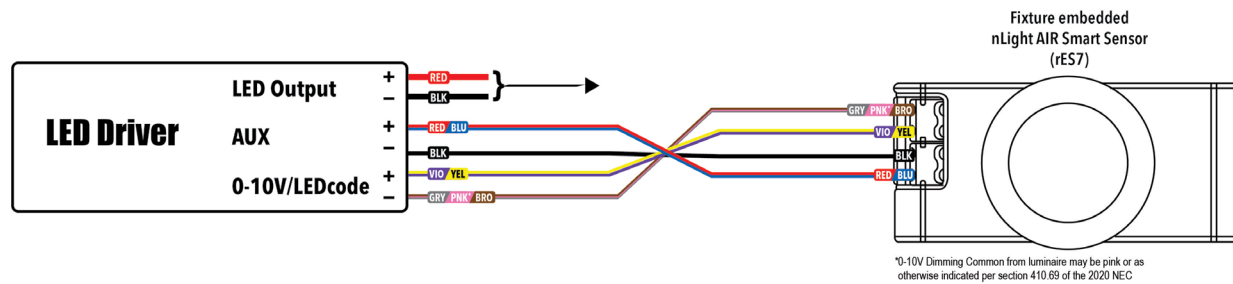


45A - HIGH MOUNT AISLWAY

- Optimized bi directional coverage pattern for aiseways with 10 - 40 ft. (3.1 - 12 m) mounting heights
- 1.5x's mounting height equals approximate detection range
- Reliable detection of large motion (e.g. pedestrian walking traffic) up to 30 ft. (9.1 m) mounting height
- Reliable detection of extra-large motion (e.g. forklift traffic) up to 40 ft. (12 m) mounting height



WIRING DIAGRAM



For more detailed wiring information and compatible driver, refer to Installation Instruction Sheet

UL 924 Response - nLight AIR Devices with EM Option

The below applies to all nLight AIR devices with an EM option.

- EM devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.
- Using the **CLAIRITY+** mobile app, EM devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.
- Only the non-emergency devices with version 3.4 or later firmware listed below can be used for normal power sensing.
 - Line voltage devices, including the rPP20, rLSXR, rSBOR, rSDGR
 - Fixture embedded devices, including the rIO EZDL, rIO ZTS, rES7 LEDcode, rES7 ZTS, rMSOD LEDcode, rMSOD ZTS, rSBG LEDcode, rSBG ZTS
- LEDcode communicating EM devices require a V2.1 eldoLED driver. This requirement does not apply to ZT devices.

DIMENSIONS

