Ceiling Mount Occupancy Series

The Ceiling-Mounted Occupancy Sensor Series is a professional-grade sensing platform designed for reliable people-presence detection in smart buildings and large-scale facility management systems. The series integrates flexible sensing technologies, low-power wide-area communication, and maintenance-optimized power design, making it suitable for commercial, institutional, healthcare, and public-sector applications.

The sensor adopts a ceiling-mount form factor, enabling optimal coverage geometry and minimizing blind spots compared with wall-mounted alternatives. Ceiling installation also enhances tamper resistance, improves aesthetics, and aligns with common lighting, HVAC, and BMS deployment practices. The compact enclosure is suitable for offices, corridors, washrooms, classrooms, wards, and public spaces.

Flexible Occupancy Sensing Technologies

The sensor series supports mixed or standalone sensing modes, allowing system designers to select the optimal detection method per application:

- Passive Infrared (PIR) sensing for reliable detection of moving occupants with ultra-low power consumption
- 24 GHz mmWave radar for micro-motion and stationary presence detection, enabling accurate occupancy sensing even when occupants are seated or motionless
- Hybrid PIR + radar fusion to reduce false positives, improve detection confidence, and adapt to complex environments

This flexibility allows the same sensor platform to be deployed across diverse scenarios, from energy-saving lighting control to space-utilization analytics.

LoRaWAN Communication with Regulatory Compliance Options

The sensor communicates via LoRaWAN, providing long-range, low-power wireless connectivity ideal for multi-floor buildings and campus-scale deployments. The platform supports:

- Standard LoRaWAN network servers (public or private)
- Secure uplink/downlink communication for configuration and firmware control
- Optional Hong Kong OFCA Type-Approved radio variant, ensuring compliance with local regulatory requirements and simplifying approval for government and statutory projects

This enables seamless integration with existing IoT platforms, smart city infrastructure, and cloud-based analytics systems.

Unlike battery-powered occupancy sensors, this series supports DC power input, allowing direct connection to building power supplies or ELV systems. This design:
- Eliminates periodic battery replacement
- Reduces long-term operational and maintenance costs
- Improves system reliability for mission-critical environments such as hospitals and transport facilities

The DC-powered architecture is particularly suitable for large-scale rollouts, where lifecycle cost and maintenance effort are key considerations.

Additional Benefits and System Advantages

- Low Total Cost of Ownership (TCO)
  Reduced maintenance, long service life, and scalable network architecture lower overall deployment costs.
- High Scalability
  Designed for mass deployment across hundreds or thousands of nodes without network congestion.
- Privacy-Preserving Occupancy Detection
  Non-imaging sensing technologies ensure occupant privacy while still delivering actionable occupancy data.
- Smart Building Integration Ready
  Ideal for integration with lighting control, HVAC optimization, space utilization analytics, and energy management systems.
- Remote Configuration & Firmware Updates
  Supports over-the-air parameter tuning and firmware upgrades via LoRaWAN downlink, minimizing on-site intervention.
- Robust Design for Public Environments
  Engineered for stable operation in varying ambient light, temperature, and electromagnetic conditions.

Typical Applications

- Smart lighting and daylight harvesting
- HVAC demand-based control
- Washroom and public-area occupancy monitoring
- Space utilization and people-flow analytics
- Energy efficiency and sustainability initiatives
- Smart estate, hospital, and transport infrastructure projects

Specification

| Parameter	Specification
Dimension - Sensor	Φ80mm x 26mm
Dimension - Communication Box	83 x 58 x33mm(Housing can becustom-made to fitapplication)
Power	12V DC
Detection angle - PIR	100°
Detection range - PIR	6m
Detection diameter - PIR	8m (at 3m height)
Detection angle - Radar	150°
Detection range - Radar	8m
Recommended height	2.5m - 4m
Sensitivity	Adjustable
Communication	LoRaWan 1.0.2
Frequency Band	AS923
Operation Condition	-10℃ to 50℃, < 95% (non-condensing)
Protection	IP20
Certification	HKCA1078, FCC, CE

PIR Detection Illustration
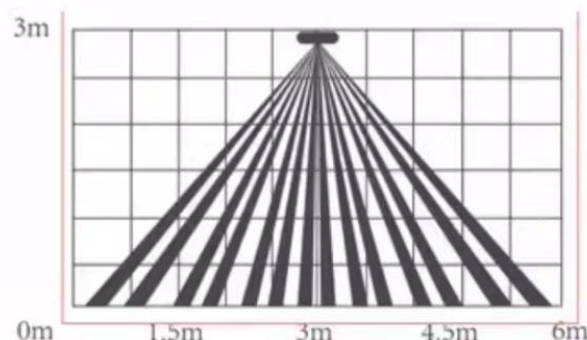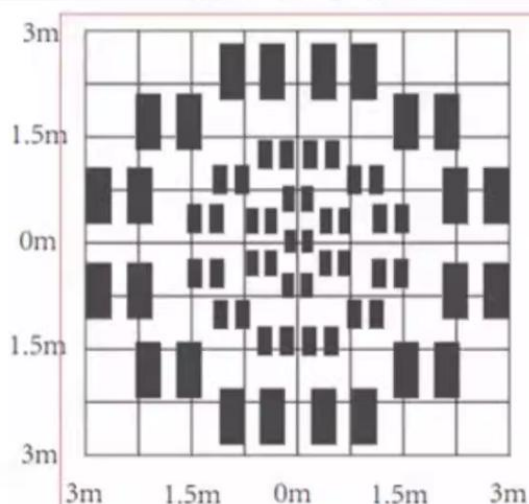
Radar Detection Illustration (at 3m height)
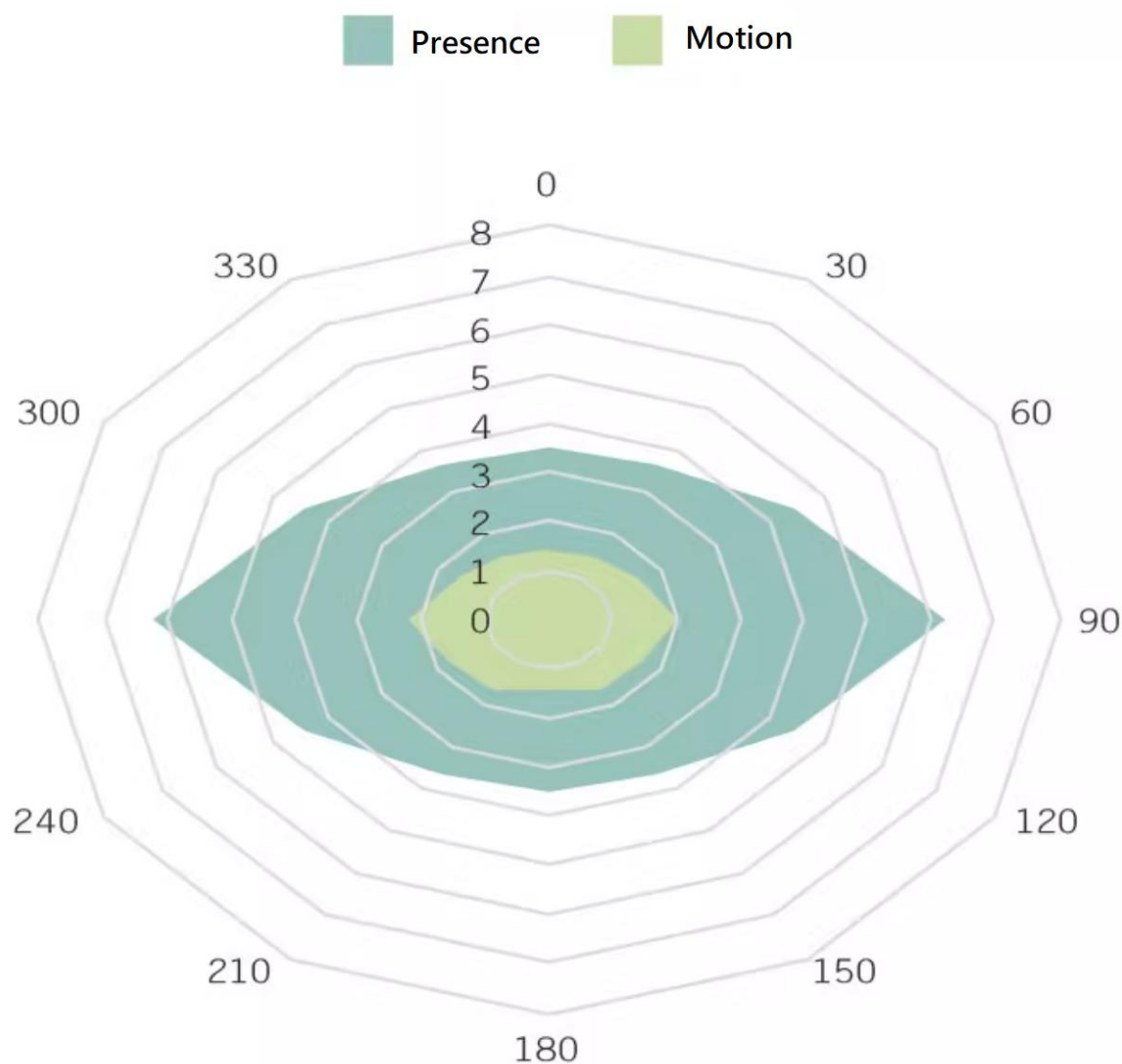
Typical Installation

Installation can be done only by the professional construction personnel or authorized engineering representative. Please use the professionally qualified installation tools to guarantee the safety of the construction personnel. Installation position must be far away from the fire source, strong electric field, magnetic field etc., otherwise damage will be resulted. ChinoINT reserves the interpretation of installation.
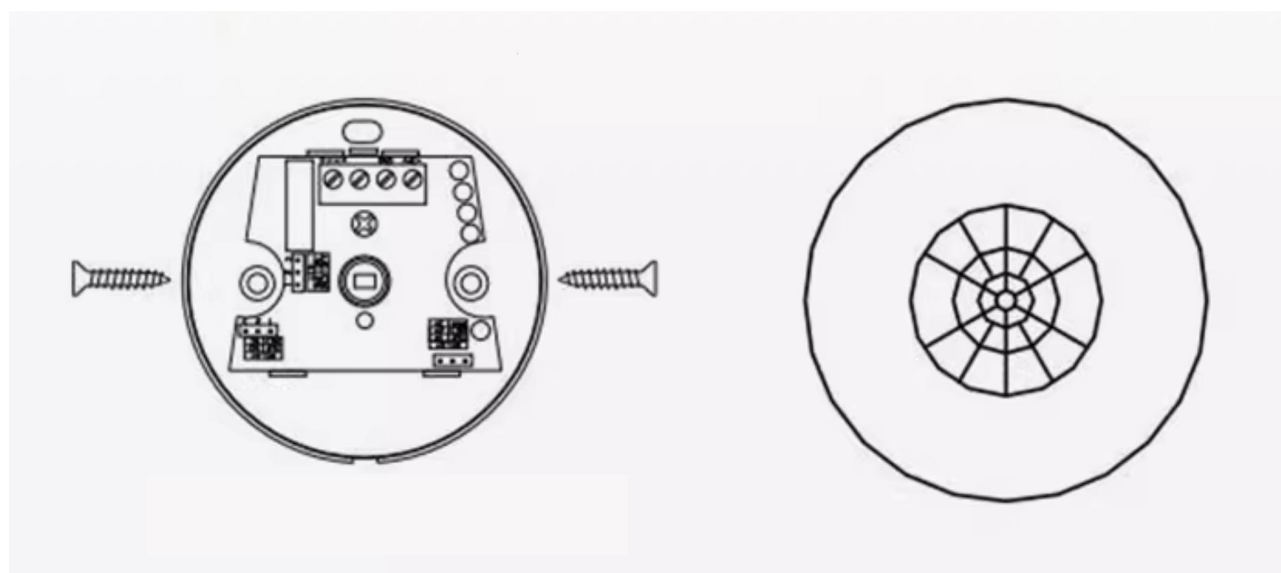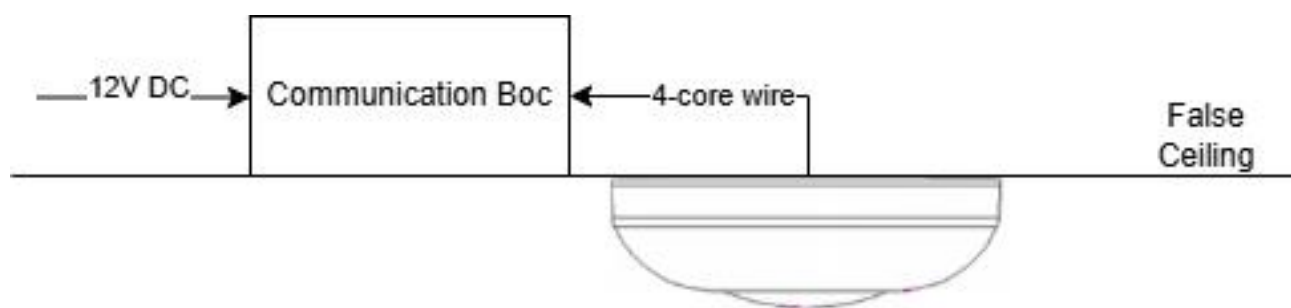
Dimension
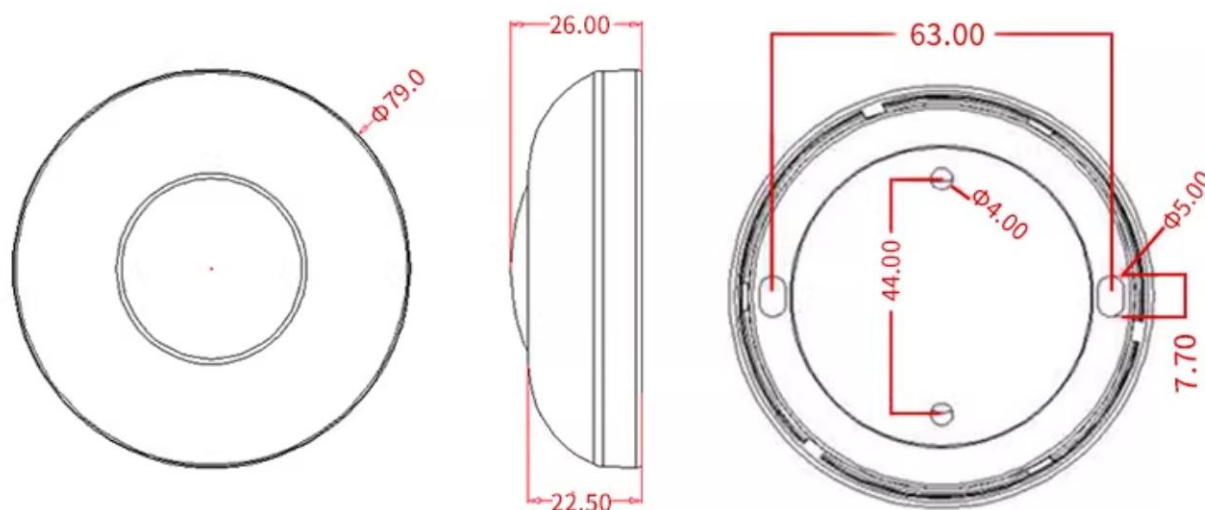
Ordering Information

Part Number	PIR	Radar	Type Approval
AECIHWCOZPGD	Yes	-	LoRaWan
AECIHWCOZRGD	-	Yes	LoRaWan
AECIHWCOZHGD	Yes	Yes	LoRaWan
AECIHWCOZPHD	Yes	-	HKCA1078
AECIHWCOZPHD	-	Yes	HKCA1078
AECIHWCOZHHD	Yes	Yes	HKCA1078

Warning

Assumes no liability for any damage resulting from the use of this product. CHINOTECH INTERNATIONAL LIMITED reserves the right to change this data sheet at any time without notice. The information furnished by ChinoINT is believed to be accurate and reliable. However, no responsibility is assumed by ChinoINT for its use, not for any infringements of patents or other rights of third parties resulting from its use.

Product Warranty and Customer Support

ChinoINT warrants all products free from defects in material and workmanship for a period of one year from the date of shipping. During the warranty period, we will, at our position, either repair or replace any product that proves to be defective. To report any defect, please inquiry sales@chinoint.com

Unauthorized opening and improper repairs on the device may result in substantial damage to equipment or endanger the user. The product described in this documentation may be operated only by personnel qualified. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products.   Always disconnect the power plug before you open the device.

Please have the model, serial number and a detailed problem description available when you call. If the problem concerns a particular reading, please have all meter readings available.

This warranty does not apply to defects resulting from unauthorized modification, misuse. If you install or exchange system expansion and damage your device, the warranty becomes void.

Product Warranty and Customer Support

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.