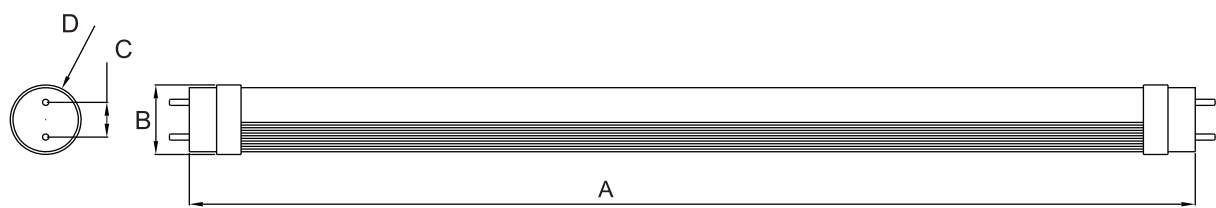




Dimensions :

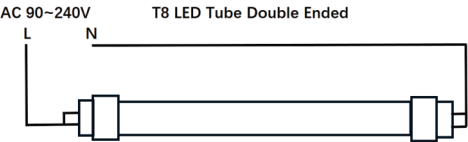
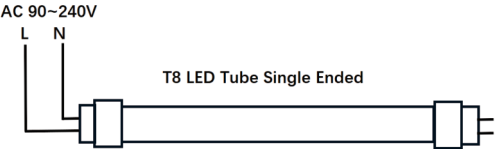


A	B	C	D
1199mm	26mm	13mm	26mm

Product Data

Rated Lifetime :	50,000 hours@ 25 ° C
Color Temperature	3000K / 4000K / 6500K (Option)
Color Rendering Index (CRI)	≥85
Safety Listing :	CE / EN62776
Photobiological Safety :	IEC 62471 / IEC 62778
Power Factor :	0.96
Luminous Flux :	2190lm
Power Consump on :	15W
Luminous Efficacy :	146lm/W

Flickering :	NO
Ingress Protection :	IP54
Dimmable :	Preset level
Control :	Bluetooth Mesh
Motion detect Range :	6m
Operating Voltage :	AC 90~240V ~ , 50Hz / 60Hz
Dimension :	1200mm (L) x ϕ 26mm
Net Weight :	0.3kg
Base Type :	G13

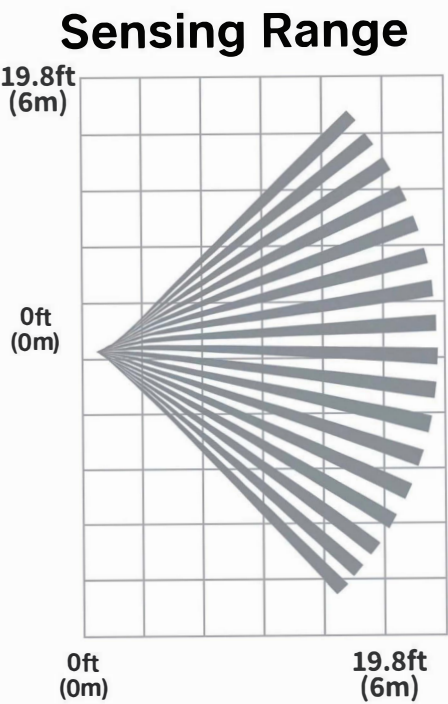


(Option)

Dimmable Level :

Dimmable Perset	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Power Consumption(W)(Perset)	15	13.5	12	10.5	9	7.5	6	4.5	3	1.5
Luminous Flux(lm)	2190	1917	1704	1470	1260	1035	828	621	390	180
Luminous Efficacy(lm / W)	146	142	142	140	140	138	138	138	130	120

Sensing Range :



Ai-R T8 LED Tube - Manual, Automatic & Ai-Controlled Lighting

Overview

AI-R TUBE is a drop-in replacement T8 LED tube that adds three layers of control to standard fluorescent-format lighting: manual (wall switch / app / remote), automatic (sensor-driven), and AI-adaptive (usage-pattern learning and predictive scheduling). It is designed for retrofit installs in offices, warehouses, retail, corridors, and residential garages/utility spaces — anywhere a standard T8 fixture already exists.

The tube ships in three control-readiness tiers so customers only pay for the intelligence they need:

Tier	Control modes	Typical use case
AI-R TUBE Basic	Manual only	Direct fixture retrofit, cost-driven upgrade, preset dim level
AI-R TUBE Sense	Manual + Automatic	Occupancy/daylight-driven spaces (storage, restrooms, corridors)
AI-R TUBE Intelligence	Manual + Automatic + AI	Offices, retail, warehouses with variable occupancy/usage patterns

Control Modes

1. Manual

- Standard wall-switch compatible (bypasses existing fluorescent ballast per install guide).
- Companion app (iOS/Android) for on/off, brightness (0–100%) via Bluetooth or Wi-Fi
- Physical remote (RF, 30 m range) supported as an optional accessory.
- Voice assistant integration: Amazon Alexa, Google Assistant, Apple HomeKit.

2. Automatic

- Built-in PIR occupancy sensor (detection range 6–8 m, 110° field of view) triggers on/off or dim-up/dim-down.
- Ambient light sensor enables daylight harvesting — tube dims or shuts off when sufficient natural light is present, maintaining a target lux level at the work plane.
- Configurable hold time (default 5 min, adjustable 30 sec–30 min) before dimming after last detected motion.
- Fully rule-based; operates without cloud connectivity or app pairing.

3. AI-Controlled

- Onboard microcontroller logs occupancy, ambient light, and usage timestamps to build a local usage profile (7–30 day rolling window).
- Predictive pre-lighting: anticipates occupancy in recurring-traffic spaces (e.g., ramps up before a 7:45 AM arrival pattern) rather than reacting only after motion is detected.
- Anomaly flagging: identifies unusual after-hours activity and can trigger a notification via the app.
- Fleet-level learning (multi-tube/multi-fixtured installs): tubes on the same network share occupancy data to coordinate zone-wide dimming rather than acting independently, reducing "light chasing" in open-plan spaces.
- AI processing runs primarily on-device (edge inference); cloud sync is optional and used only for fleet analytics and firmware updates.

Technical Specifications

Spec	Value
Form factor	T8, single-ended or double-ended power (specify at order)
Length	4 ft (1200mm)
Wattage	15W (4 ft)
Luminous efficacy	≥146 lm/W
Lumen output	2,190 lm
Color temperature Options	3000K / 4000K / 6500K
CRI	≥85 (Ra)
Beam angle	160°
Dimming range	1%–100%, flicker-free
Input voltage	90–240V AC, 50/60 Hz
Connectivity	Bluetooth Mesh 5.0
Available Sensors	PIR motion, ambient light, temperature
Rated lifespan	50,000 hours (L70)
Operating temperature	-20°C to 45°C
Ballast compatibility	Ballast bypass required (direct AC line install)
Base Type	G13
Certifications	CE / EN62776
Photobiological Safety	IEC 62471 / IEC 62778

Installation

1. De-energize the fixture and remove the existing fluorescent tube and ballast.
 2. Rewire sockets for direct line voltage per the included ballast-bypass diagram (single-ended: rewire one socket for line/neutral; double-ended: rewire both end caps).
 3. Insert AI-R TUBE and rotate to lock into the socket pins.
 4. Re-energize and pair via the app (Sense/Intelligence tiers) — tube broadcasts a Bluetooth setup beacon for 60 seconds after first power-on.
 5. For Intelligence tier fleet installs, add each tube to a project/zone in the app to enable cross-tube coordination.
-

Data & Privacy

- Occupancy data is stored as anonymized timestamp/duration events — no imaging or audio capture.
 - On-device learning models can run fully offline; cloud sync is opt-in and limited to aggregate analytics and OTA firmware updates.
 - Local network communication uses Bluetooth Mesh (Intelligence/Sense tiers) with AES-128 encryption.
-

Use Cases

- **Open-plan offices:** zone-based AI dimming reduces energy use during partial occupancy without manual reconfiguration.
 - **Warehouses/aisles:** predictive pre-lighting ahead of forklift/foot traffic based on historical movement patterns.
 - **Retail:** daylight harvesting near storefront windows paired with manual override for merchandising events.
 - **Corridors/stairwells:** automatic-only (Sense tier) motion-triggered lighting for energy code compliance (e.g., ASHRAE 90.1) without requiring app setup.
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Note: Specifications above reflect an illustrative product design intended to accompany the AI-R TUBE branding concept; actual electrical, sensor, and connectivity specs should be validated against manufacturing/engineering documentation before publication.