HPWINNER
Experts in Customized IoT Urban Lighting

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T78 Series

IoT Roadway Light

Introduction

LED IoT Roadway Light is a new-generation intelligent lighting system based on Internet of Things (IoT) technology. By integrating a two-way communication unit (DTU), multi-level metering drivers, and intelligent data acquisition and control algorithms, it enables core full digital maintenance functions, including remote inspection, data collection, intelligent diagnostics, multi-level alarms, dynamic work-order dispatching, and precision maintenance.

4G Cat.1 Communication · Nationwide Coverage

Utilizes existing 4G networks to ensure reliable connectivity across all road networks and terrains.

Precision Management

Supports 0–100% high-accuracy digital dimming for precise brightness control.

Multi-Level Metering & Monitoring

Supports 0–100% high-accuracy digital dimming for precise brightness control.

Two-Way Data Communication

Supports uplink data reporting and downlink command reception between devices and the platform.

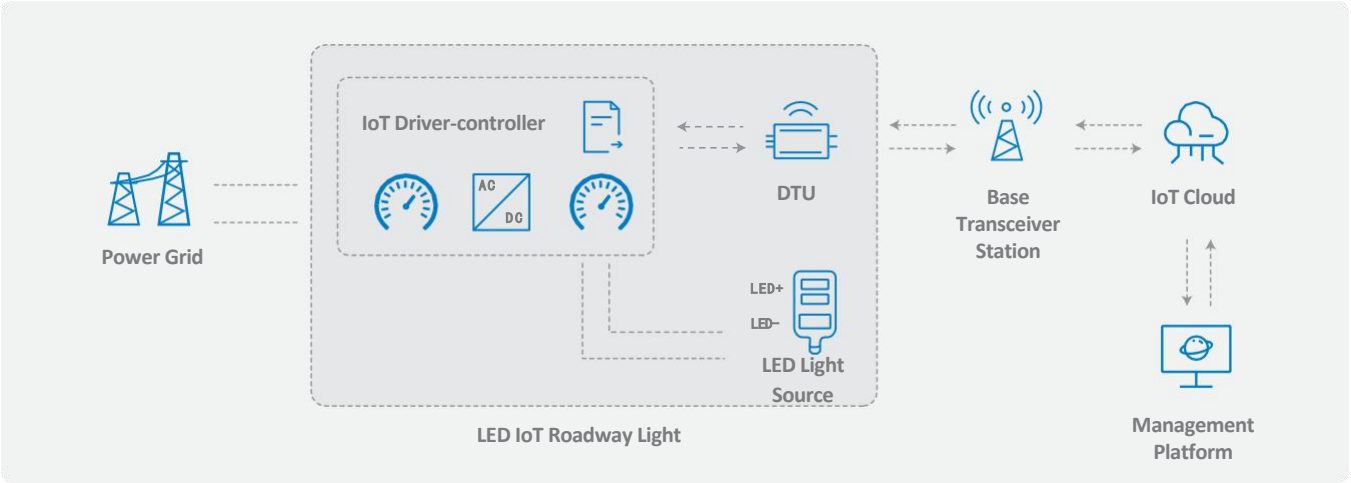
OTA Upgrade

Supports remote firmware upgrades, continuously optimizing user experience and expanding system functionality.

Full Digital Maintenance

Automatic fault diagnosis system with multi-level alarms and work-order dispatching.

System Architecture



Features

- Die-casting housing with with high-grade electrostatic coating process.
- IP66-rated luminaire with independent IP66-rated electrical compartment.
- Isolation of control and communication units, optimizing thermal design and EMC protection.
- Comprehensive protection against over/under voltage, open circuit, short circuit, and over-temperature.
- Alarms for over/under voltage, over-current, over-temperature, open/short circuit, and light source failure.
- 4G Cat.1 communication.
- Surge protection up to 10 kV (common mode) and 6 kV (differential mode) for enhanced lightning and surge immunity.
- Optional BDS / GPS / Galileo / Glonass positioning.

Full Digital Maintenance

Full Digital Maintenance is an IoT-based, data-driven closed-loop O&M system that integrates real-time monitoring, intelligent fault diagnosis, multi-level alarms, automated response, and precise maintenance, enabling urban lighting to shift from manual, experience-based maintenance to predictive and automated operations.

Full Digital Maintenance Process		Traditional Maintenance Process
Data collection and monitoring	VS	Manual inspection and abnormality reporting
Intelligent fault diagnosis		Manual reporting, difficult fault localization
Multi-level alarm system		Complexity in circuit diagnostics
Automatic work order generation		High maintenance costs
Precise fault resolution		Post-maintenance

Management Platform

The operations management platform is independently developed on an IoT cloud architecture. Built on a lightweight system framework, it supports flexible, configurable application functions for easy operation and seamless compatibility with the user's management systems. It supports public cloud, private cloud, and on-premises deployment, and provides PC-based remote control and in-depth data analytics. Multi-device access is available across mobile phones, tablets, and PCs, enabling real-time remote monitoring, control, and data viewing for truly mobile operations management.

Core Functions

End-to-end digital and intelligent O&M to improve efficiency and reduce costs

Strategy Management

Define lighting control (dimming) strategies based on user needs. Integrate multi-dimensional data such as weather and pedestrian/traffic flow to achieve precise lighting control.

Operations Dashboard

Provides multi-dimensional data visualization with customizable dashboards, clearly presenting key operational metrics.

Data Statistics

Supports aggregated reporting of device-level and individual-luminaire data by group or site, and presents it through visual charts.

Intelligent O&M

Leverages AI-assisted O&M decision-making and predictive maintenance to improve maintenance efficiency and reduce O&M costs.

Asset Management

Provides full asset lifecycle management, covering equipment profiles, maintenance records, end-of-life decommissioning, and other end-to-end processes.

Access Control

Implements a multi-level permission control system with customizable roles, ensuring secure and reliable system operation.

Platform Advantages

Empowering smart-city development across the board

Citywide Data Integration

Smart algorithm-assisted decision support to improve O&M efficiency.

Personalized Customization

Multi-source data fusion and analysis to enable intelligent linkage.

AI-Driven Decision-Making

Flexible configuration to meet the needs of different application scenarios.

Intelligent Alerts & Prediction

Identify issues in advance and reduce maintenance costs.

Specifications

Input Voltage	100Vac-277Vac，50/60Hz	Color Rendering Index	Ra≥70
Power Efficiency	90%~95%	CCT	3000K 4000K 5000K 5700K
Power Factor	0.95	Main Housing	Die-cast Aluminum
Surge Protection Level	≥10KV line-earth	IP Rating of Gear Compartment	IP66
Operating Environment	-40℃-+50℃, 10%~90%RH	IP Rating of Luminaire	IP66
Storage Environment	-40℃~+50℃, 10%~90%RH	IK Rating	IK09

Note: Power efficiency and power factor are typical values and are subject to actual measurements.

Standard Configurations

Model	Power（W）	Qty. of LEDs (PCS）	5050 Efficacy（lm/W）
T78S03	40	36	163
	50		159
	60		155
T78S06	60	54	163
	70		161
	80		159
T78M10	90	72	164
	100		164
	120		156
T78L15	120	108	168
	140		164
	160		158
T78L20	160	144	168
	180		166
	200		164

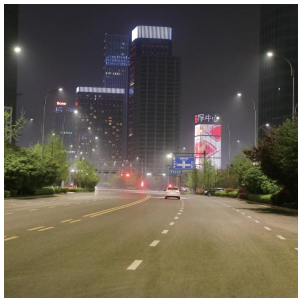
Note:

1. The above parameters are typical values, values shown are subject to ±5% tolerance.
2. The luminous efficacy of a 3000K CCT is approximately 5% lower compared to a 4000K or higher CCT.

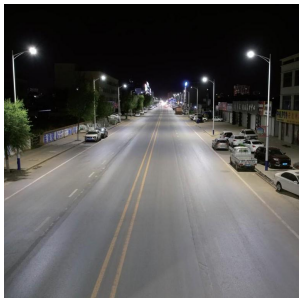
Application Scenarios

Roadway lighting (Urban roads, residential areas, overpasses…)

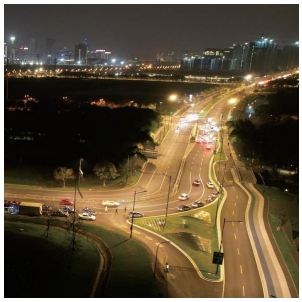
Public areas lighting (Theme parks, squares, parking lots…)



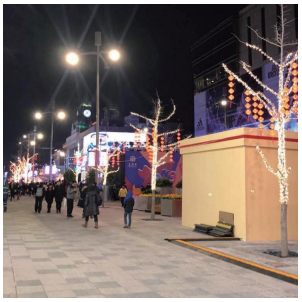
Urban Roads



Branch Roads

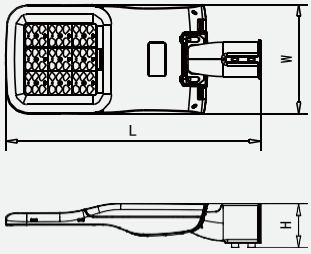


Intersections

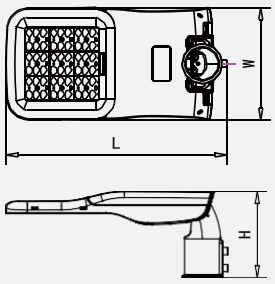


Commercial Districts

Dimensions



Horizontal Adapter



Vertical Adapter

Model	Dimensions - Horizontal Adapter （L×W×H（mm））	Dimensions - Vertical Adapter （L×W×H（mm））	N.G. (kg)
T78S03	510×185×80	415×185×180	3.2
T78S06	545×235×80	450×235×180	3.7
T78M10	595×235×80	500×235×180	4.3
T78L15	695×235×80	600×235×180	5.0
T78L20	750×290×80	655×290×180	6.1

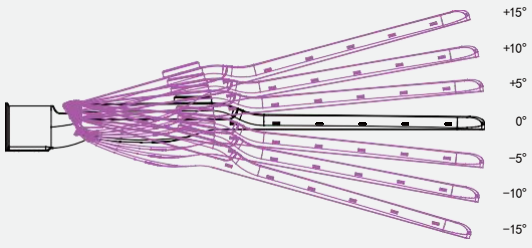
Note: The above parameters are typical values, values shown are subject to ±5%~±8% tolerance.

Package Information

Model	Package Dimensions （L×W×H（mm））	Qty. per Carton	G.W. (kg)
T78S03	550×250×260	2	7.4
T78S06	580×300×260	2	8.9
T78M10	630×300×260	2	9.9
T78L15	730×300×260	2	11.5
T78L20	770×340×155	1	7.2

Note: The above parameters are typical values, values shown are subject to ±5%~±8% tolerance.

Adjustable Adapter



Model	Available Pole O.D. (mm)	Available Depth for Installation(mm)	Adjustable Range
T78S03 T78S06 T78M10 T78L15 T78L20	Φ 60 ± 3	≥ 80	5°increments per step, -15° ~ +15°