



WATTS MATTER SEA Co., Ltd.

Experience, Innovation, Global Collaboration

Advanced Street Lighting

Designed for Resilience.

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Watts Matter: Ultra-Efficient Streetlighting

Who We Are

Watts Matter is a global leader in high-performance LED lighting. Since 2008, we've delivered ultra-efficient systems, custom-designed for demanding environments. Our projects reduce energy usage, reduce costs, reduce carbon footprint, and help build long-term infrastructure resilience.

What We Provide

A smarter streetlighting platform designed to replace outdated systems (e.g. HPS) with best-in-class LED luminaires.

- ♦ Ultra-Efficient LEDs – >200 l/W (we always provide best in class product)
- ♦ Cut energy use by 85% from day one, with consistent, high-quality illumination.
- ♦ No-Capex Financing: **Pay from savings. Full upgrade and ongoing service—guaranteed performance, zero upfront cost.**
- ♦ Solar-Ready: we offer solar (hybrid or full) for energy independence.
- ♦ CCTV Option: Pole-mounted surveillance for public safety—tourist areas, urban centers, and beyond.
- ♦ Smart Controls + Remote Monitoring: Real-time dimming, fault detection, and maintenance alerts—no guesswork, no downtime.
- ♦ Theft and Tamper Detection: Our smart streetlights detect theft and tampering instantly, with sensors that alert the system to any loss of power or change in position.
- ♦ >100,000-Hour life. Warranty 10 years.
- ♦ Improved Public Safety: Bright, uniform lighting enhances visibility and helps deter crime in both tourist areas and residential zones.
- ♦ Low maintenance. Designed for use in high-heat, high-humidity, and salt-air environments.

Why It Matters

Our future-ready systems support cleaner, safer, and more economically vibrant communities, with elegant lighting that transforms streetscapes while saving money and strengthening grid resilience.

High performance lighting. More lumens/watt. Zero Capex. Immediate benefits.



Smart Lighting System: Key Features

Ultra-Efficient LED Technology

- ♦ 200 lumens / watt. ($\pm 7\%$ but l/w will be as per spec)
Energy Savings: Cuts energy bills by 85% or more via high-efficiency LEDs and smart dimming
- ♦ Precision Optics: Ensures consistent illumination and improves visibility

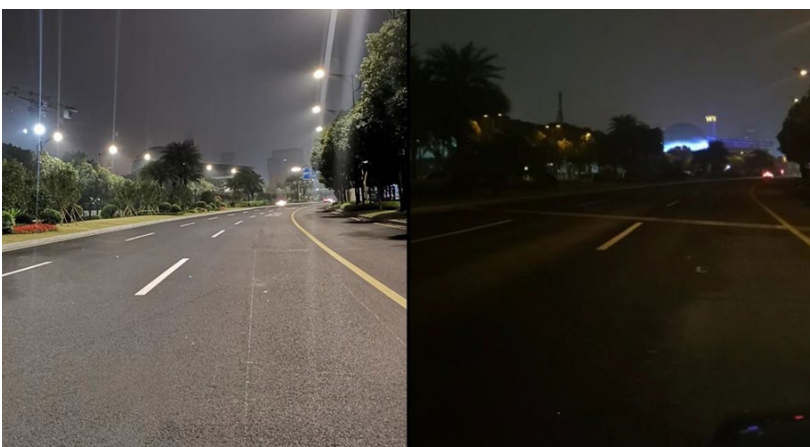
Smart Monitoring & Control

- ♦ Wireless Connectivity: Enables real-time monitoring, remote control, and energy data access
- ♦ Dynamic Dimming: Automatically adjusts brightness to match environmental conditions
- ♦ Interface Compatibility: Supports 0–10V, PWM, and custom dimming protocols
- ♦ Remote Management: Switch and group-control fixtures across the network
- ♦ Performance Metrics: Captures current, voltage, power, energy use, and runtime
- ♦ Fault Detection & Alerts: Instantly identifies anomalies to reduce outages
- ♦ Device Status Tracking: Detects disconnections, tampering, or removal — key for theft prevention

Intelligent Lighting Automation

- ♦ Light Sensor Switch: Responds to daylight changes, including sunrise and sunset
- ♦ RTC Scheduling: Maintains operations even during network outages
- ♦ Power-Off Memory: Restores settings after power loss
- ♦ Central Oversight: Real-time dashboard tracks performance, consumption, and maintenance history

This platform delivers visibility, control, and resilience across your lighting infrastructure.



Lighting Management System

Overview

The Smart Street Lighting Management System is an advanced, data-driven platform designed to efficiently monitor, control, and optimize urban lighting infrastructure. Utilizing Geographic Information System (GIS) technology, real-time analytics, and intelligent automation, the system improves energy efficiency, reduces operational costs, and enhances public safety.

This platform enables remote centralized control, real-time status updates, and comprehensive data analytics to ensure optimal streetlight performance and strategic decision-making.

System Benefits

Operational Efficiency

- Remote monitoring & control eliminates on-site inspections.
- Automated maintenance alerts ensure timely interventions.
- Data-driven decision-making improves infrastructure planning.
- Area-based Device Management: Group streetlights by region, district, or street for strategic control.

Energy & Cost Savings

- Intelligent scheduling & adaptive lighting lower power consumption.
- Detailed energy reports help optimize electricity usage.
- Fault detection prevents outages.

Scalability & Future-Proofing

- Designed for large-scale implementation with an open architecture.
- Can integrate with IoT and Smart City initiatives.
- Supports IoT upgrades for evolving urban infrastructure needs.

	Zigbee	PLC	NB-IoT	LoRaWAN	LTE Cat.1
Networking Mode	via Zigbee gateway	via PLC	via Base Station form Telecom Operator	via LoRa gateway	via Base Station form Telecom Operator
Network Wiring Method	Wiring free	Power line	Wiring free	Wiring free	Wiring free
				(High requirements for deploy position of the gateway, many factors need to be considered)	
Transmission Distance	Medium	Medium	Long range	Long range	Long range
	(100m-2km, node as relay)	200m	(Generally more than 10km)	(Can reach over 10km theoretically, affected by data rate and antenna gain. 2-5km in general)	(Generally more than 10km)
Capacity (Access Node) of a Single Network	Theoretically over 60,000; Normally 200~500 nodes	Generally around 100 nodes, limited by the resistance of power line	Approx. 200,000 nodes	Theoretically over 60,000; In practice, affected by numbers of channels, node sending packet frequency, packet size, etc. Normally about 500~5000 nodes	Approx. 50,000 nodes
Frequency Band	2.4G	Wired	Band used by Telecom Operator	Sub-GHZ (470、868、915 MHz, etc.)	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 GSM: 900/1800MHz
Transmission Speed	250kps	1.25Kbps, 5Kbps, 7.5Kbps	Theoretically 160kbp ~ 250Kbps; Less than 100kpbs in actual, limited by low speed communication port UART	0.3~50kpbs	Theoretical value Downlink: 10Mbps Uplink: 5Mbps Data consumption: approx. 80M/per year
Network Delay	<1S	3-5S	1s -5s	2-3S	1s -5s
Application	Multi-nodes in a specific area	Suitable for chain structure powered by mains supply	Discrete single point transmission	Complex multi-nodes in a specific area	Discrete single point transmission
Communication Type	LAN	LAN	WAN	WAN	WAN

The Role of Street Lighting in Public Safety

A city's security begins with visibility

Inadequate street lighting creates blind spots where crime can thrive. It limits police visibility, reduces community confidence, and discourages evening economic activity.

When people feel unsafe walking outside at night, entire neighborhoods are affected — socially, economically, and psychologically.

A well-planned street lighting strategy can be a practical, low-cost way to support the social and economic life of a community.

Evidence from cities like New York shows how effective lighting can be. In one large-scale study, areas that received new lighting installations saw a 36% reduction in serious nighttime crime, including robbery and aggravated assault.¹

This was achieved through improved visibility and increased public presence in previously dark or neglected areas.

The implications are clear. Investing in modern, energy-efficient lighting infrastructure can:

- Improve natural surveillance and deter criminal activity
- Support law enforcement by increasing visibility and reducing response times
- Encourage evening commerce by helping businesses stay open longer
- Foster a sense of safety in communities, especially among vulnerable populations
- Align with national development goals, including safer cities and lower energy use

A comprehensive lighting program—designed for Thailand's environment and urban needs—can complement existing crime reduction efforts while delivering long-term economic and social returns.

¹ Chalfin, A., Hansen, B., Lerner, J., & Parker, L. (2019). Reducing Crime Through Environmental Design: Evidence from a Randomized Experiment of Street Lighting in New York City. University of Chicago Crime Lab.

Laying The Foundation For The Future

Built for what's next: Our smart streetlight platform is designed with future-proofing at its core, ensuring seamless integration, continuous updates, and scalable technology.

Smart City Solutions



Reliability, Warranty, Support

Year Performance Guarantee

- Ensures full functionality, efficiency, and durability over a decade.
- Remote monitoring enables early detection of performance degradation.
- Proactive maintenance alerts prevent unexpected failures.

Replacement & Service Plan

- Seamless part replacement under the warranty agreement.
- Cloud-based diagnostics continuously monitor system health in real time.
- Technical support and training provided for local operators to ensure smooth operation.

Three Approaches to Service & Support

Our software controls are intuitive and easy to learn, allowing for seamless monitoring and maintenance of your streetlighting system.

- Training & Self-Maintenance Support - We offer training for your maintenance personnel to effectively use our software. The software will alert your team to any issues, allowing for a quick response. Additionally, the luminaires are designed for tool-less maintenance, enabling your team to perform any necessary maintenance easily.
- Remote Monitoring & Reporting - We can establish a service agreement to monitor streetlight components remotely. Any detected issues will be reported promptly for resolution.
- On-Site Maintenance Services - We provide preventive and corrective maintenance as needed to ensure optimal performance.

Pay It Forward Program

- On-site replacement stock ensures rapid response in the unlikely event of a luminaire failure.
- If stock falls below the minimum threshold, Watts Matter replenishes it at no cost to maintain uninterrupted service.



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