



4G Intelligent Lighting 8-Channel Time Controller (Landscape Lighting Project)

NJ-JK08

Xiamen Net-Join IoT Technology Co., Ltd.

<https://light.net-join.com/>

1. Product Introduction

The 4G Smart Lighting Timer is an efficient, intelligent device designed for the remote control and management of lighting fixtures. With this device, users can easily exercise centralized control over multiple independent lighting circuits or devices, offering a convenient, flexible, and smart lighting solution.

The 4G Smart Lighting Timer utilizes 4G Cat.1 wireless communication technology to enable intelligent management and control of landscape lighting systems, offering features such as high energy efficiency, exceptional reliability, remote control capabilities, and data analytics. It can schedule the switching on or off and adjustment of lighting levels as needed to achieve energy savings; it ensures long-term operation through robust communication technology; it enables remote monitoring and management via a network; and it collects data to provide a basis for optimizing system management.

This product offers a range of advantages, including easy configuration for customized lighting control solutions; strong compatibility that enables seamless integration with various devices to expand functionality; durability suitable for harsh operating environments; straightforward installation to reduce costs; and high scalability, facilitating system upgrades and functional expansion. In summary, the 4G Smart Lighting Timer is a powerful and high-performance product that provides an efficient, intelligent, and sustainable premium solution for landscape lighting applications.

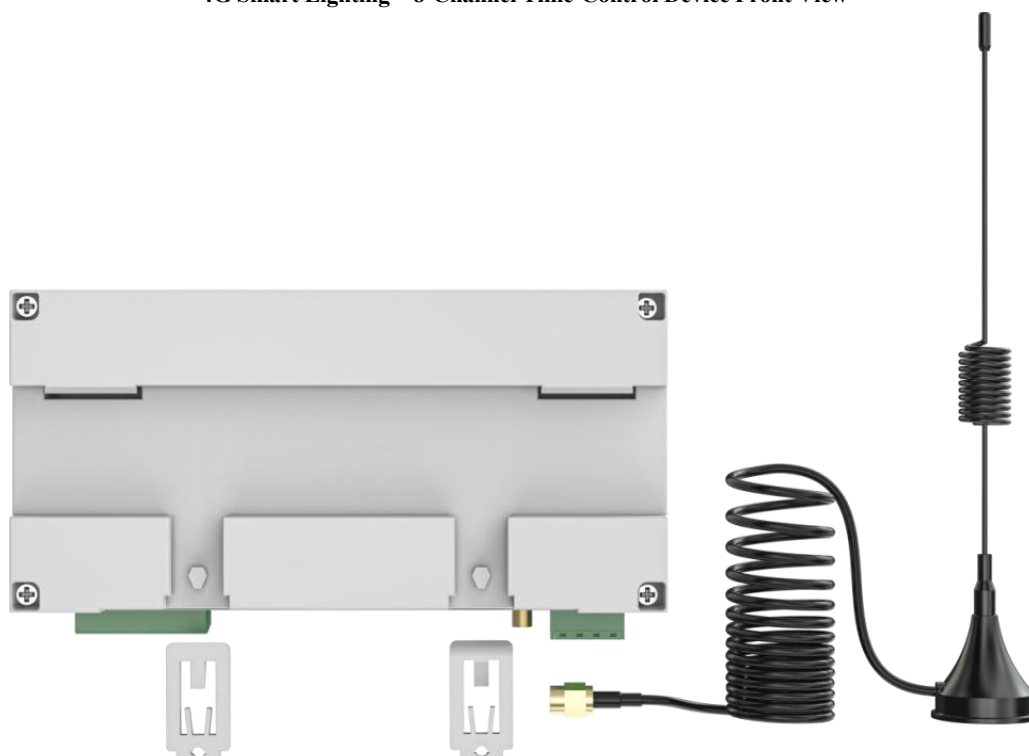
2. Key Features

1. Display function: LCD screen with a user-friendly human-machine interface.
2. Communication functionality: RS485 interface, standard Modbus protocol, remote control.
3. Control Functions: Features include time-and-temperature control, light control, and manual control.
4. Time control function: Week mode / Four-time period control per channel.
5. Circuit isolation function: Each output circuit is isolated from the others and operates independently.
6. High-precision timing function: RTC real-time timing with an error of <1 minute per year.
7. Group Control: Allows you to group different areas or lighting fixtures for centralized control and management.
8. Fault Alarm: When the equipment experiences a malfunction or abnormality, an immediate alarm notification is issued.
9. Historical data logging: Records operational data from the lighting system for easy analysis and traceability.
10. Scene Mode: Supports multiple scene mode configurations to meet varying lighting requirements across different scenarios.
11. Scheduled Plan Editor: Users can flexibly edit and adjust scheduled control plans.
12. Remote firmware upgrade: Enables convenient firmware updates over the network, enhancing device performance.
13. User Permission Management: Configure operational permissions for different users

3. Product Images and Installation Dimensions



4G Smart Lighting – 8-Channel Time-Control Device Front View



4G Smart Lighting – Back View of the 8-Channel Time-Control Device

4. Product Features and Functions

A 4G smart lighting timer is a device designed for the remote control and management of lighting fixtures. It typically consists of a control unit and a corresponding communication interface, enabling it to connect to and control lighting devices over a network or other communication channels.

This product utilizes advanced communication technologies and a user-friendly control interface, offering users a variety of control methods—including mobile app, PC-side Platform, and cloud-based control. Users can turn their lighting devices on or off anytime, anywhere through these methods.

- **Time Control:** The time control system includes both fixed-time control and latitude/longitude-based control. It automatically acquires GPS positioning data and calculates the local sunrise and sunset times using a latitude/longitude calculation algorithm, then automatically adjusts the time according to the seasonal variation patterns throughout the year; it features a time adjustment and scheduling function with four separate time-setting segments per channel, allowing users to flexibly adjust the time control settings based on local environmental and climatic conditions.
 - a. **Latitude–Longitude Mode:** Automatically calculates local sunrise and sunset times based on the automatically determined location, eliminating the need for manual entry of cumbersome latitude and longitude values.
 - b. **Fixed Mode:** Each channel features four programmable timing settings, allowing flexible configuration of lighting on/off times; modes can be freely combined (either in sequence or as a fixed mode) to flexibly enable all-night or mid-night lighting.
- **Optical Control:** An external optical control probe featuring optical assistance functionality; it automatically adjusts the switching time during cloudy or rainy conditions to ensure proper road lighting.
- **Week-Based Control:** Specific switch-on/off timing settings are applied for major holidays or designated inspection periods. A one-touch activation/deactivation control strategy can be configured for the period from Monday to Sunday; this allows for flexible scheduling even during public holidays.
- **Work Mode Selection**
 - Continuous Off Mode:** The circuit remains permanently disconnected (light off)
 - Constant-on mode:** The circuit remains continuously connected (light on).
 - Automatic Mode:** Circuit status follows the timing/light-controlled function.
- **Manual control:** Administrators can remotely operate the system via the app or web interface, or by pressing the buttons on the control panel. In the event of an emergency, the system can be remotely controlled (either from the control center host or via the mobile app), or the switch buttons on the control panel can be manually operated from the controller's main page.

- Managers can configure appropriate control strategies through the Management Center based on real-time operational requirements and deploy scenario settings with a single click, enabling flexible control over area lighting equipment.
- Remote Control Mode: Enables communication with the cloud platform by inserting or removing a SIM card and utilizing the 4G CAT.1 wireless communication functionality.
- Power-off memory: The controller can continue operating according to the preconfigured strategy even in the event of communication anomalies. When communication with the control backend is interrupted, the controller will automatically execute the currently stored control strategy. In the event of a mains power outage, upon reconnection to the power supply, the controller will retain the previous control mode without requiring any additional configuration.
- Precise timing: Equipped with an RTC (Real-Time Clock) to ensure an error margin of no more than 1 minute per year.

5. Scope of Application

The 4G smart lighting timer is designed for the remote control and management of outdoor lighting systems. Below are some examples of outdoor application scenarios:

- Streetlight Control: Remote control and management of outdoor streetlight systems to enable intelligent streetlight management, enhancing energy efficiency and safety.
- Public square and park lighting: Control the lighting systems for outdoor public squares, parks, and landscape areas to create an attractive outdoor lighting environment.

The 8-channel remote lighting control system is primarily deployed in outdoor applications such as streetlight control and public space lighting. Through remote control and management, intelligent lighting control can be implemented, thereby enhancing energy efficiency, occupant comfort, and safety. These application scenarios cater to the diverse outdoor lighting control requirements across various settings and usage scenarios.

6. Product Technical Features

The technical features of 4G smart lighting timer controllers typically include the following aspects:

- Remote control capability: The system features remote control functionality, enabling users to turn the lighting system on/off or schedule timed operations via a mobile app, computer software, or other remote control methods.
- Multi-channel control: Supports simultaneous control of up to 8 lighting circuits, allowing independent adjustment of different areas or types of lighting.
- Wireless communication: Utilizes 4G Cat.1 wireless communication technology to communicate with and control lighting devices, enabling convenient connection and control of various lighting fixtures.
- Timed Function: Supports a timed function that allows the lights to turn on or off automatically according to a preset schedule.
- Energy Efficiency Optimization: Utilizing intelligent control and optimization algorithms to achieve energy-saving optimization by dynamically adjusting the brightness and on/off timing of lighting fixtures based on actual demand, thereby reducing energy consumption.

- User-friendly interface: Equipped with a simple and intuitive interface that is easy to operate and configure, enabling users to conveniently control and manage their lighting system.

7. 4G Technical Specifications

Name	Parameter Details
input voltage	AC 90—265V,50Hz
output	4.5A
communication mode	4G cat.1
Output circuit	Bus 8
output power	Each circuit: 16A (3500W resistive load)
Electric shock capacity	16A/250VAC Resistive
levels of protection	IP20

1) Other parameters

Name	Parameter Details
outline dimension	179 mm × 87 mm × 59 mm (Length × Width × Height)
way to install	Standard 35 mm rail-mounted installation
end-use temperature	Temperature: -25°C to 70°C; Humidity: 90%
working temperature	-35°C~80°C
storage temperature	-40°C~85°C

8. Display Interface Operation

1) Main Interface

The system features six operating interfaces. Under normal, unattended operation, the left-hand image shows the main interface; pressing the "Set" button allows you to select another operating interface. The main interface displays the current time. Pressing "Set" will navigate you to the menu interface.

2) System Menu Settings Interface

This interface is primarily used to configure the device's basic parameters. Users can use the up/down buttons to select the object to be operated on, and the left/right buttons to specify the value of a particular bit within that object; then, click the "Set" button to save the changes.

3) Network Port Configuration Interface

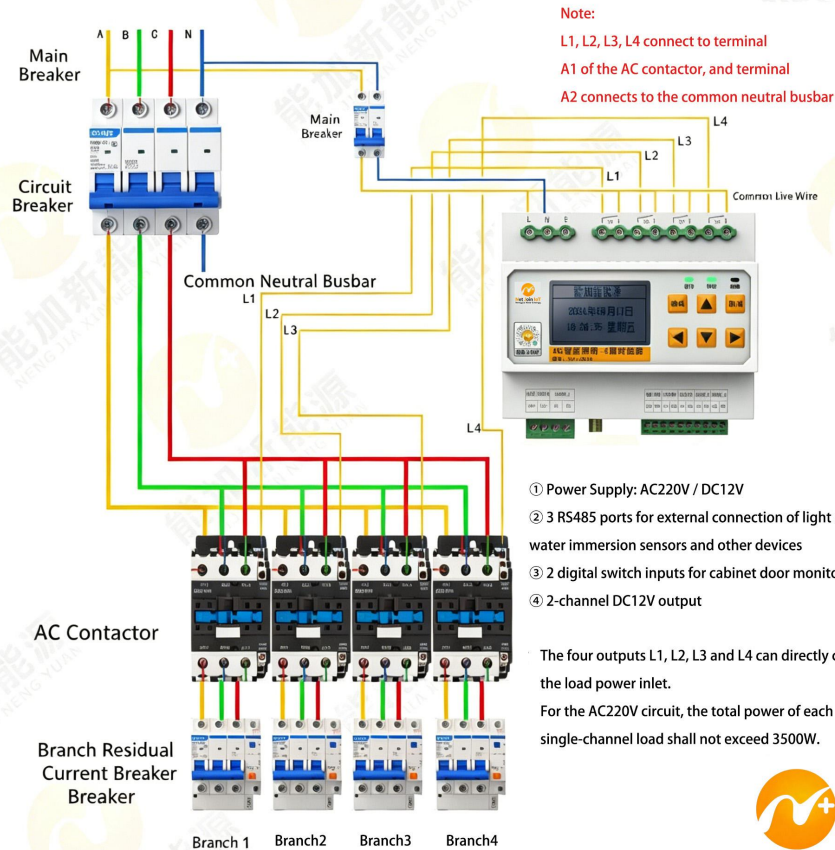
Users can configure the port number and IP address on this interface to access the backend website management system; the network identifier is fixed and cannot be changed.

4) Branch Control Interface

Circuit control allows for individually activating or deactivating each branch, or it supports activating or deactivating all circuits simultaneously. Full activation: All circuits are turned on.

Fully Shut Down: All circuits shut down

9. Product Installation and Wiring Diagram



4G Smart Lighting Timing Controller Wiring Diagram

10.Ways to Obtain the Platform Client

The Net-Join Solar IoT Controller supports access via mobile APP and PC terminal

Method 1: APP Download

① For Android Devices

APP Download Link: <https://iot.xmnengjia.com/download/NetJoin.apk>

Or scan the QR code below:



② For iOS Devices

Please search for "Smart lot Lamp" in the App Store



Smart lot Lamp

Xiamen Nengjia New Energy
Technology Co., Ltd.

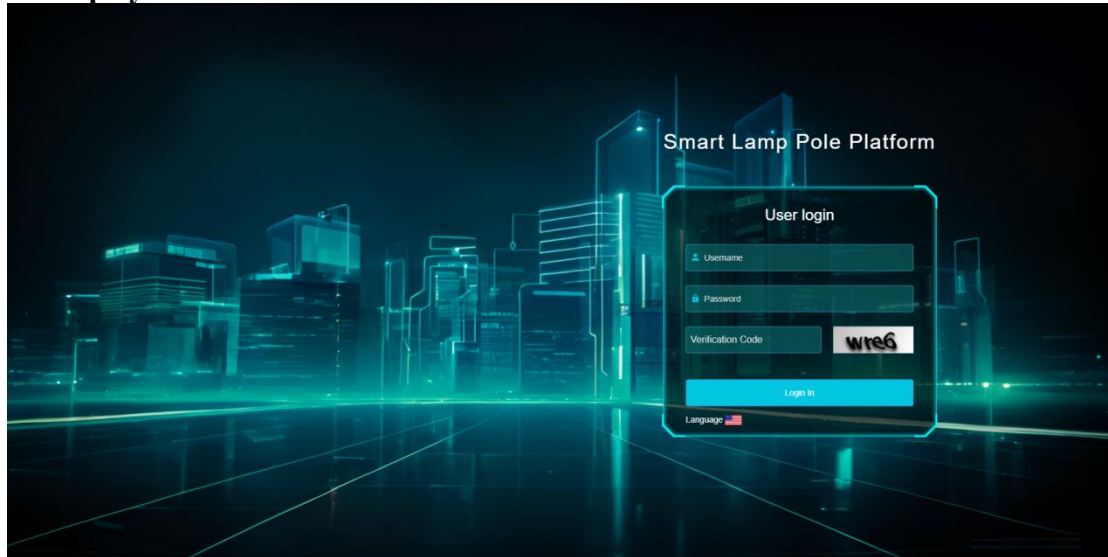
Open



Method 2: Log in via the computer website

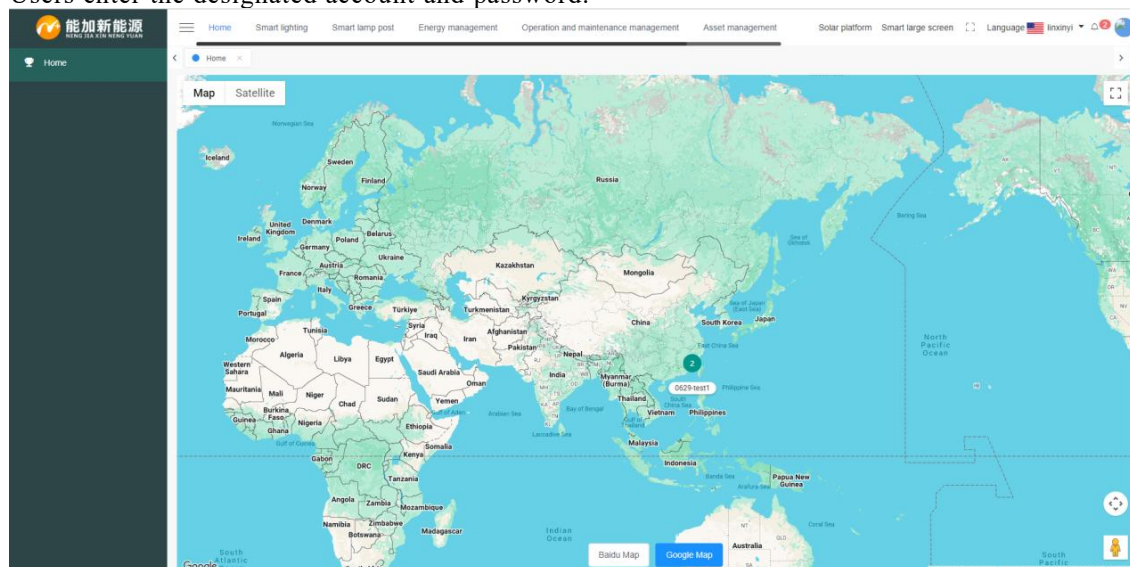
<https://gm.xmnengjia.com>

10.Display on PC side

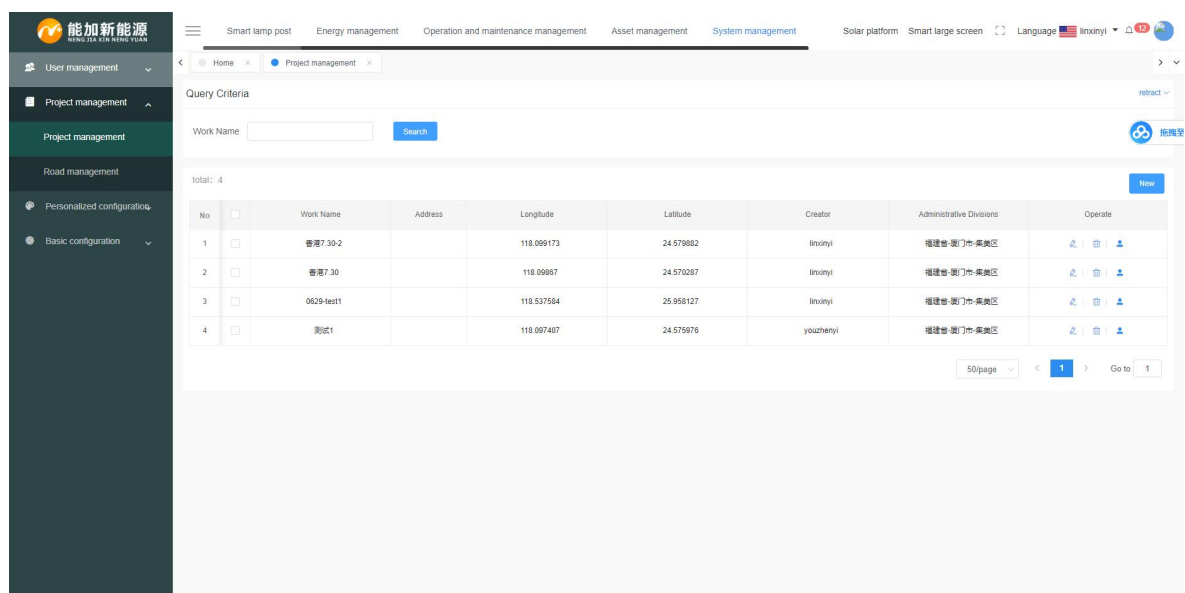


Website Entry : <https://gm.xmnengjia.com>

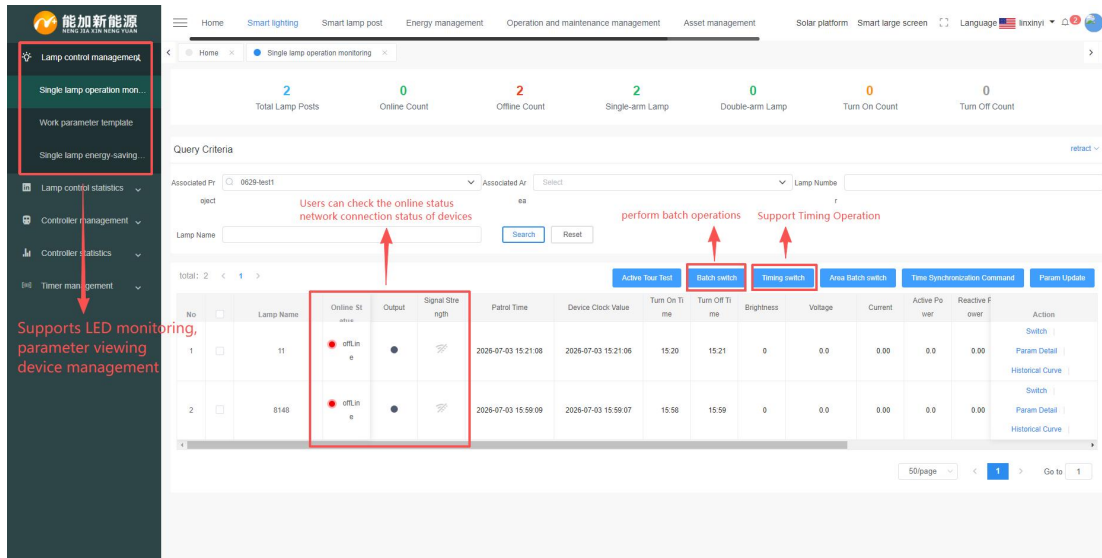
Users enter the designated account and password.



- This is the main page. All devices available for user binding are displayed on this Home interface.



- This is the project-management page for the cloud platform. Users are permitted to create projects tailored to on-site requirements. All new-created projects will be synchronously shown on the map page for geographic visualization and unified administration.



Users can check the online status network connection status of devices

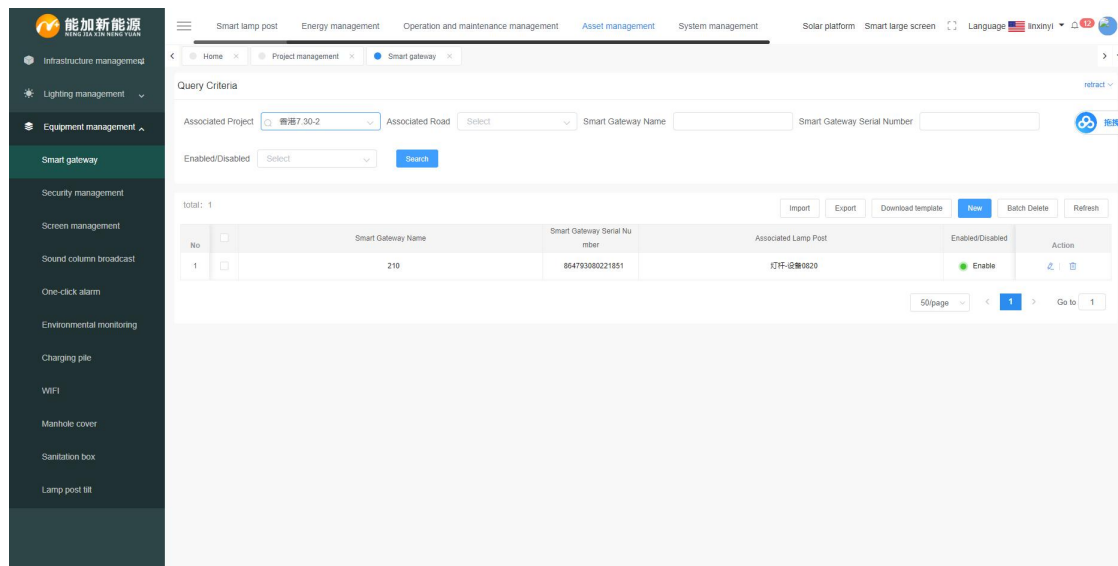
perform batch operations

Support Timing Operation

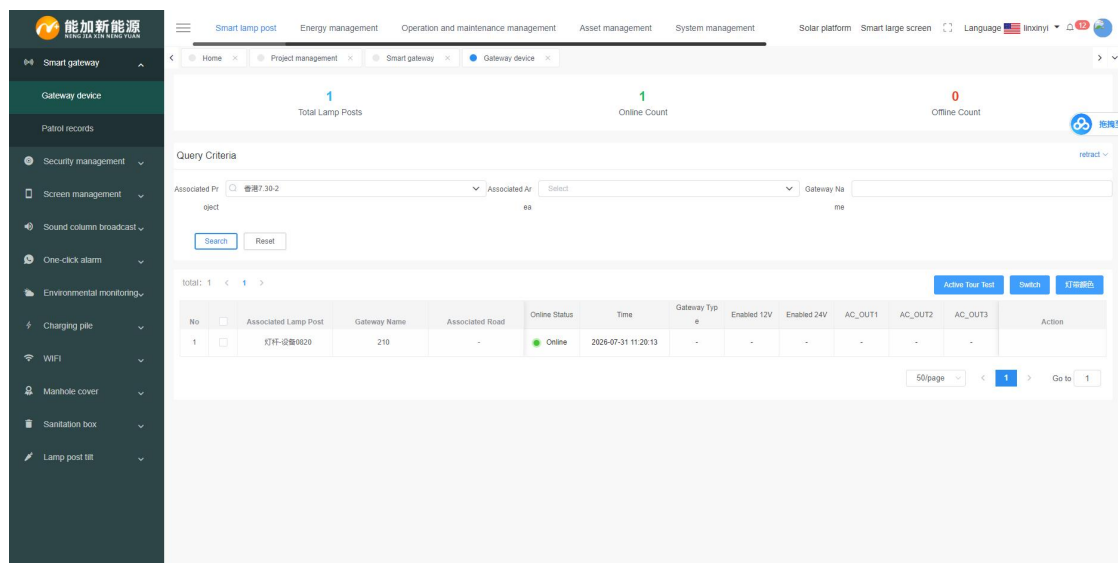
Supports LED monitoring, parameter viewing device management

No.	Lamp Name	Online Status	Output	Signal Strength	Patrol Time	Device Clock Value	Turn On Time	Turn Off Time	Brightness	Voltage	Current	Active Power	Reactive Power	Action
1	11	Offline	●	●	2026-07-03 15:21:06	2026-07-03 15:21:06	15:20	15:21	0	0.0	0.00	0.0	0.00	Switch Param Detail Historical Curve
2	8148	Offline	●	●	2026-07-03 15:59:09	2026-07-03 15:59:07	15:58	15:59	0	0.0	0.00	0.0	0.00	Switch Param Detail Historical Curve

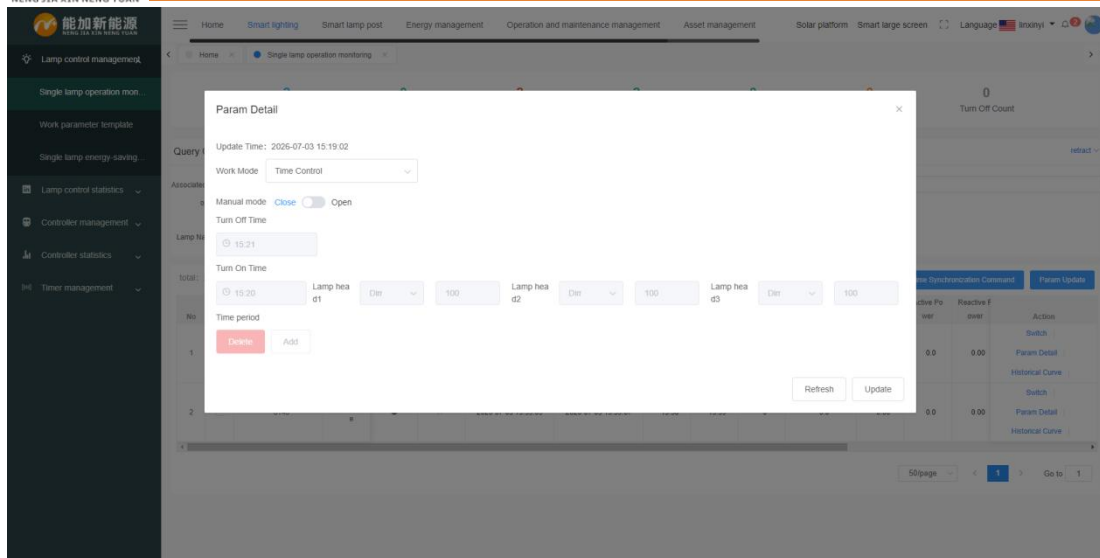
- Active Tour Test: Batch online inspection, one-click verification of device online connectivity status
- Batch Switch: Mass on/off control for all lamps, quickly adjust lighting status of the whole road uniformly
- Timing Switch: Batch schedule timing strategies, support automatic brightness adjustment & lamp on/off by time periods
- Param Update: Batch modify lamp operation parameters, including dimming level, output power, alarm thresholds and other configurations



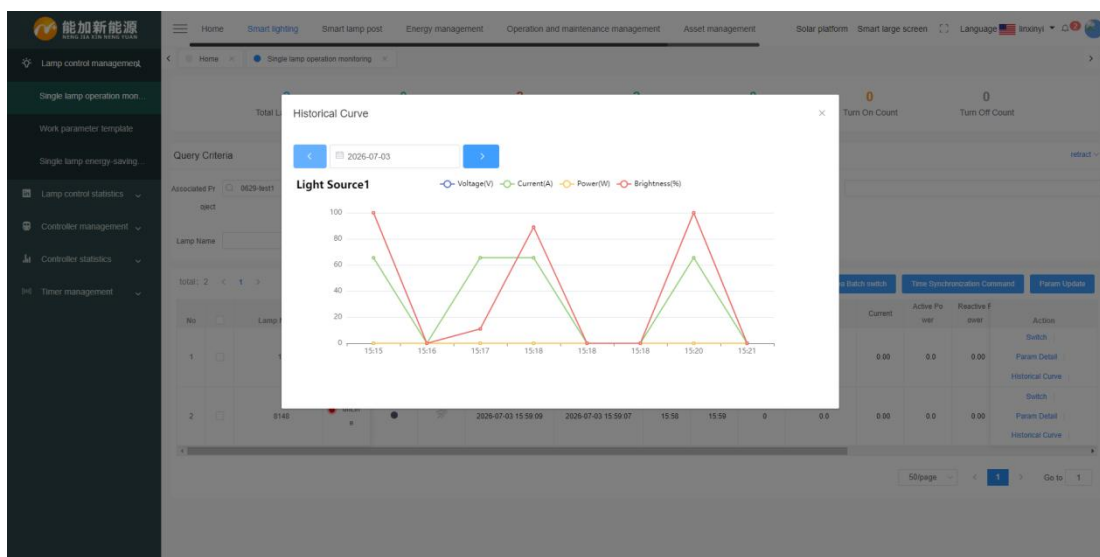
- The smart-gateway page enables users to register purchased gateways to the cloud platform. Every gateway needs to be allocated to a specific project, where it connects and manages corresponding sensor devices within the same project.



- This management page supports the screening of diverse terminal- end devices such as single- lamp controllers, smart gateways and various sensors. It enables users to read real-time device status and operational data online.



- The timing function supports customized time schedules, enabling remote automatic on and off control of street lights as per user-defined time settings.



- Historical status of the device: Select the time to view the voltage, current and power of the solar panels, batteries, loads, temperatures.



Net Join IoT
Nengjia New Energy

<https://light.net-join.com/>

Xiamen Net-Join IoT Technology Co., Ltd