# Cloud Photography Series

## Product specification sheet


| Version number | Revision time | Revisionist | Revised content |
|---|---|---|---|
| **V1.0** | | | First time writing |
| **V2.0** | twenty million two hundred and twenty thousand one hundred and twenty-six | Congratulatory message | Second revision |

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## Product Description

The ELCO IoT Cloud Camera series terminal is developed using embedded technology and designed based on NB, 4G, and CAT1 communication methods. It is equipped with a high-definition pinhole camera and an extended 485 interface module. Intelligent AI algorithms are deployed in the cloud for local photography and cloud recognition storage. Combined with electricity settlement functions, it intelligently manages the electricity consumption of power transfer, distributed power supply, and discrete power supply scenarios. It supports the selection of low-power battery power supply and adapter power supply models, fully meeting customers' intelligent electricity needs. It adopts an attached installation design and has intelligent anti disassembly function. It is an ideal product for the construction of electric IoT systems.

This product can be combined with ELCO Intelligent Circuit Breaker to easily collect on-site electricity usage data and settle platform electricity usage according to electricity billing rules. It supports the combination of "platform+APP" for easy installation, debugging, and later maintenance. Widely used in the field of the Internet of Things, such as power monitoring and control for base stations, power monitoring and billing for park tenants, and power monitoring for remote discrete power scenarios, supporting the expansion of data collection and settlement for other types of data.

## Application Framework


The Yunpai series terminals are widely used in communication systems, smart parks, smart cities, and other scenarios.

This device can be installed at various nodes with dispersed power circulation, and real-time upload of information data from discrete power supply nodes. It uses protocols such as TCP and COAP, and can directly connect to the ELCO IoT application platform to expand upper layer applications, or connect to other existing or public cloud platforms to achieve online management of power consumption and meet the requirements of scenarios such as power transfer.

- **Product Features**

**1. Hardware configuration**

- Embedded design, product safety and stability, can work continuously 24/7;
- Support the expansion of ELCO intelligent circuit breaker terminals, support external control for power-off and power on, and timed disconnection;
- DC12V rated working current less than 200mA
- Support status light feedback on terminal working status, including current terminal networking status, execution status, and status information;
- Support factory prefabricated patch IoT cards to meet various working conditions, environments, and safety protection requirements;
- Choose to configure 4G, CAT1, NB full network module, and support external communication antennas to adjust signal gain and ensure the security and stability of wireless communication network signals;
- Support FLASH breakpoint storage and continuation, network interruption self repair, and supplementary transmission verification;
- Equipped with multiple anti tamper contacts and anti-theft alarm function, ensuring product safety;
- Reserve observation windows for on-site inspection to ensure accurate operation, maintenance, and alignment;
- Support the working mode of battery+adapter combination power supply to ensure long-term stable operation of the product;
- The power supply battery supports 7000mAh, 6800mAh, and 2800mAh options, and can be used with disposable lithium batteries or rechargeable batteries;
- The product comes with adhesive backing for easy on-site construction, and fixed holes are designed for strength fixation in special situations.

**2. Photography data collection**

- Support users to set a periodic execution of timed photo return function;
- Support the platform or app to trigger the device's active photo upload function;
- Support continuous photography or single photography operation;
- Support configuring flash switch strategy;
- Support built-in photo timestamp;
- Support local photography, cloud storage, analysis, and conversion;
- Support infrared acquisition function, based on the State Grid DL645 protocol to collect information from electricity meters;
- Fully enclosed photography ensures image recognition rate and meets installation and use requirements in different environments;
- Support inspection button function to achieve manual triggered reporting;
- Built in high-resolution pinhole camera, with a resolution of up to 320x240 when taking photos;

**3. Supporting software**

- Support VPN private network data communication;
- Support watchdog monitoring, with built-in abnormal restart mechanism to prevent device downtime;

- Support battery level image, abnormal alarm, low battery alarm, and mains power alarm query;
- AI intelligent algorithm calculates electricity consumption;
- Supporting standard application management platform, supporting customized application platform development or API interface services;
- Support DL/T645 protocol infrared meter, automatically identify total power consumption and peak/valley values;
- Support platform settings for data reporting methods: timer reporting, trigger based reporting, and response based reporting;
- Support modifying the device's scheduled reporting cycle;
- Support FLASH breakpoint storage and continuation, network interruption self repair, and supplementary transmission verification;
- Support remote FOTA upgrade;
- Support operation, alarm, device, data and other log generation, as well as exporting at selected times;
- The platform has rich functional modules such as data query, statistical analysis, terminal management, settlement management, data query, user management, and energy consumption management.

**4. Communication method**

- NB, 4G, CAT1 communication methods;
- Support infrared data acquisition through DL645 protocol;
- Support TCP protocol and ELCO IOT platform to achieve real-time uploading and parsing of data information;

**5. Security certification**

- Low power consumption certification for products; （CMA\CNAS）
- Product protection level certification; （CMA\CNAS）
- Product high and low temperature certification; （CMA\CNAS）
- Product flame retardant certification; （CMA\CNAS）
- Product ESD certification. （CMA\CNAS）

## Product specifications

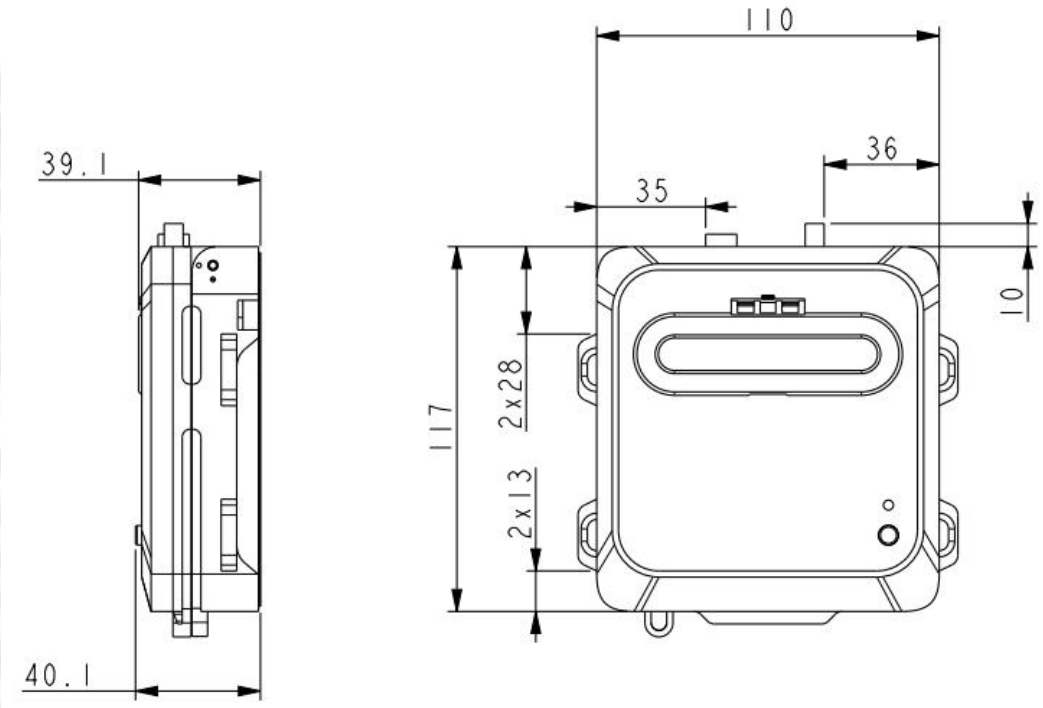
| **Interface parameters** | |
|---|---|
| DC12V adapter interface | one |
| RS485*1 | Electrical isolation: supported, baud rate: 9600bps, data bits: 8-bit Stop bit: 1 bit, verification method: none; (Supports expanding circuit breakers) |
| SMA*1 | External screw internal hole antenna wiring terminal; Rod antenna: optional support, suction cup antenna: standard support |
| SIM card slot * 1 | Communication mode: full network connection; SIM card size: 25mm x 15mm |
| Collection port | Infrared interface supports DL645 protocol |
| indicator light | Network status, execution status, standby status |
| **Key parameters** | |
| Trigger button | Trigger photography |
| Reset button | Parameter reset |
| **Network parameters** | |
| Wireless Communication Standard 1 (optional) | 4G |
| Wireless Communication Standard 2 (optional) | CAT1 |
| Wireless Communication | NB |

| | |
|---|---|
| Standard 2 (optional) | |
| 485 protocol support (standard) | DL/T645 |

- **Indicator light status description**

| Symbol | Function definition | Indicate status | Color description of indicator lights |
|---|---|---|---|
| LED | Status indicator (green) | Chang Liang | Network abnormality |
| | | Constant extinction | Normal networking and sleep mode |
| | | twinkle | Data exchange |

- **Product interface and size**



| Working parameters | |
|---|---|
| working voltage | 12V |
| Working current | 2A |
| Working temperature and humidity | -20 ℃~+55 ℃, 0~95% RH without condensation, error ± 5 ℃ |
| Storage temperature and humidity | -40 ° C~+85 ° C, 0~95% RH, no condensation, error ± 5 ℃ |
| Operating power consumption | ≤500mW |
| standby power | ≤50μW |
| Shell size | 110*117*37.5mm（L*W*H） |
| Protection level | IP5X |
| **Product performance** | |
| Electrostatic discharge disturbance test | The experiment shall be conducted in accordance with GB/T 17626.2-2006 under the following conditions:<br>--Air discharge ± 8kV, contact discharge ± 4kV-- Discharge frequency: 20 (single discharge, interval of 1 second); |
| Flame retardant performance test | The experiment shall be conducted in accordance with GB/T 2408-2008 under the following conditions:<br>--Vertical combustion test conducted after 48 hours of state adjustment at 23 ℃ and 50% relative humidity.<br>--Aging in an air circulation oven at 75 ℃ for 168 hours, followed by a vertical combustion test conducted after cooling in a drying test chamber for 4 hours. |
| Environmental adaptability (high and low temperature, humid heat) | Low temperature test: The test shall be conducted in accordance with GB/T 2423.1-2008 under the following conditions:<br>--Temperature: -20 ℃, - Test cycle: 16h;<br>High temperature test: The test shall be conducted in accordance with GB/T 2423.2-2008 under the following conditions:<br>--The instrument is in a non working state-- Temperature:+70 ℃--<br>Test time: 16 hours; |