



simpler, smarter, and more efficient

Make enterprise material management



# specification

KEY CABINET PRODUCT SPECIFICATION

Smart Grid Cabinet: ZSC-L01

## 1. Product Image



## II. Product Overview

The ZSC-L01 Intelligent Grid Cabinet is a smart storage and management solution that integrates cutting-edge technologies such as IoT, biometrics, and big data analytics, designed to address common challenges of traditional storage systems—including low space utilization, cumbersome operational procedures, data silos, and poor management efficiency. This product supports various applications for item storage, exchange, asset management, and consumable distribution, enables 24/7 uninterrupted operation, and delivers digital, visualized management of the entire enterprise asset flow process through a user-friendly interface and precise permission controls.

Compared to traditional storage cabinets, smart compartment cabinets overcome the limitations of fixed space allocation and enable resource sharing; they diversify access methods to meet various needs such as item exchange; leveraging a management platform, they synchronize data in real time and generate statistical reports, providing data-driven support for business decision-making. Widely applicable to diverse enterprises and specific public settings, these cabinets significantly enhance management efficiency and resource utilization.

## III. Application Scenarios

### (1) Corporate Office Environment

网址: [www.zebrastation.cn](http://www.zebrastation.cn) 电话: 020-3999 6976 邮箱: [guoyuhao@ibanma.net](mailto:guoyuhao@ibanma.net) Website:  
www.zebrastation.cn Phone: 020-3999 6976 Email: guoyuhao@ibanma.net  
Address: Room 1401, Building 16, Tianan Headquarters Center, No.555 North Panyu Avenue,  
Donghuan Street, Panyu District, Guangzhou

1. Employee Item Management: Temporary storage of personal items, exchange of work documents, and cross-departmental document transmission require no dedicated personnel coordination, enhancing office collaboration efficiency.

2. Administrative Asset Management: Management of the issuance, return, and registration of office equipment and supplies; precise tracking of asset movement trajectories to prevent asset loss.

3. Self-service consumables distribution: Allow fixed-amount or on-demand collection of printed materials, office supplies, and promotional items; automatically track consumption data to optimize procurement planning.

## (II) Production and Manufacturing Scenarios

1. Production Material Management: Temporary storage and on-demand issuance of components and auxiliary materials required for the production line, ensuring precise material distribution and consumption traceability.

2. Tool borrowing and returning management: Record the borrowing and returning of production tools and testing instruments, track usage duration, ensure standardized circulation of tools, and minimize idle waste.

3. Temporary storage of finished/semi-finished products: Temporary

storage of semi-finished products in the workshop and cross-process transfer and handover shall have clearly defined responsibilities to ensure smooth production flow.

### (III) Public Service Scenarios

1. Industrial Park/Office Building: Facilitates document exchange between enterprises, temporary storage and retrieval of parcels, providing convenient logistics transfer services for businesses within the park.

2. Research Institutions: Management of experimental equipment, sample storage, transfer, and handling; strict control of access permissions to ensure the safety of experimental materials and compliance with data standards.

3. Government Service Hall: Facilitates the transfer of application materials and approval documents, reduces public waiting time, and enhances the efficiency of government services.

## IV. Functional Features

### (1) Core Functions

1. Item Storage and Exchange: Supports flexible allocation of single or multiple compartments for self-service storage, retrieval, and cross-user item exchange. The operation process is streamlined with full traceability throughout the entire workflow.

2. Asset Management: Features integrated modules for the entire

lifecycle management of assets—including registration, issuance, return, repair reporting, and disposal—with unique asset identifiers, real-time status updates, and generation of asset ledgers and flow reports.

3. Consumables Distribution Management: Supports categorized storage, fixed-quantity distribution, and on-demand requisition of consumables; enables inventory warning thresholds with automatic restocking alerts at low levels, achieving refined consumables management.

## (II) Interaction Functions

1. Multi-factor authentication: Integrates various verification methods including facial recognition, card swiping, QR code scanning, and username/password authentication to meet diverse usage requirements and ensure operational security.

2. Intelligent Interaction Interface: Equipped with a large-capacity capacitive touchscreen featuring high-definition resolution, a simple and user-friendly interface design, and clear operation instructions that require no professional training to use.

3. Remote Control and Monitoring: Supports remote monitoring of device status, handling of anomalies, and real-time tracking of port occupancy and operation logs via the management platform.

## (III) Management Functions

网址: [www.zebrastation.cn](http://www.zebrastation.cn) 电话: 020-3999 6976 邮箱: [guoyuhao@ibanma.net](mailto:guoyuhao@ibanma.net) Website:  
www.zebrastation.cn Phone: 020-3999 6976 Email: guoyuhao@ibanma.net  
Address: Room 1401, Building 16, Tianan Headquarters Center, No.555 North Panyu Avenue,  
Donghuan Street, Panyu District, Guangzhou

1. Precise permission control: Supports defining operation permissions by department, role, and user level. Each access slot can be independently authorized to clarify responsibilities and prevent unauthorized access to sensitive items.

2. Data Statistics and Analysis: Automatically collects and stores data on storage usage, requisition, exchange, and consumable consumption, generates multi-dimensional statistical reports, and supports data export and sharing.

3. Customizable configuration: The number and size specifications of compartments can be flexibly adjusted according to actual usage requirements, catering to storage and management needs for items of various sizes and types.

#### (IV) Safety and Reliability Functions

1. High-security locking system: Equipped with an independent electronic lock featuring rapid unlocking response, extended service life, and anti-pry and anti-tap designs to ensure secure item storage.

2. Abnormal Alarm Mechanism: In cases of exceptions such as overdue retrieval or equipment failure, the system automatically triggers audio-visual alarms and simultaneously sends alert notifications to the management platform and the administrator's mobile device.

3. Data Security Protection: Data transmission employs encrypted

protocols, and cloud storage features backup and recovery capabilities to prevent data loss or leakage, ensuring enterprise information security.

## V. Product Parameters

| Main Specification Parameters    |                                                                                                          |
|----------------------------------|----------------------------------------------------------------------------------------------------------|
| product model                    | ZSC-L01                                                                                                  |
| operating system                 | Android 11                                                                                               |
| CPU                              | A quad-core 64-bit Cortex-A55 processor with a maximum clock speed of 2.0 GHz                            |
| Industrial Control Configuration | RK3568                                                                                                   |
| internal storage                 | 2G                                                                                                       |
| capacity                         | 16G                                                                                                      |
| Overall dimensions               | Control cabinet: 1980 × 400 × 450 mm ± 5 mm;<br>Storage cabinet: 1980 × 660 × 450 mm ± 5 mm;             |
| Case Material                    | 1.2 mm cold-rolled steel plate                                                                           |
| screen                           | 21.5-inch capacitive touchscreen<br>Resolution: 1920×1080, Aspect Ratio: 16:9                            |
| capacity                         | Depends on the number of sub-cabinets                                                                    |
| Electric Lock                    | Independent electronic lock with unlocking time <1 second and a service life exceeding 1 million cycles. |
| communication interface          | WIFI, RJ-45, 4G (optional)                                                                               |
| Work Environment Requirements    | temperature -20°C ~ 60°C                                                                                 |
| Fix/Move Method                  | Omni-directional wheel                                                                                   |



simpler, smarter, and more efficient

Make enterprise material management

|                           |                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Card Reader<br>(Optional) | Operating frequency: 13.56 MHz; Card reading range: 0–30 mm                                                                                      |
| QR Code Reader            | Reading accuracy $\geq 7$ mil<br>Effectively identifies codes from various media including mobile phone screens, paper codes, and plastic codes. |
| power requirement         | Single-phase AC 220 V, 50–60 Hz                                                                                                                  |

## VI. Precautions

The device must be installed in a flat, dry, and well-ventilated indoor environment, avoiding direct sunlight, humid conditions, or areas with severe dust exposure.

Power supply must strictly adhere to the rated parameters to prevent equipment failure caused by voltage instability or overload.

Perform regular cleaning and maintenance of the cabinet, inspect components such as locks, sensors, screens, and communication interfaces to ensure proper equipment operation.

Administrators must regularly back up data and update system versions promptly to ensure device functionality stability and data security.

Prohibit violent lock-breaking or cabinet impact; such actions will shorten equipment lifespan and result in losses that must be borne by the user.

## Attachment: Dimensions of the secondary cabinet compartment opening

