

Sparkoz Technology

**Commercial Cleaning
Robot
TN10 Product Brochure**



01

Performance Introduction

1. Product Core Performance Introduction

1.1 Appearance



1. Product Core Performance Introduction

1.1 Appearance



1. Product Core Performance Introduction

1.2 Product Proposal

TN35 Background

- As the urbanization process continues to deepen, urban residents yearn for a more convenient, richer, and higher-level life, and continue to promote the development of the property management market;
- The aging population is serious, the level of education is low, the cleaning efficiency is low, and the labor cost of property management continues to rise;
- Under this double determination, the demand for intelligent property management is becoming more and more

Advantages

- Simple and easy to operate quick deployment, quick start;
- Four-in-one powerful cleaning system : sweeping, washing, vacuuming and mopping, four-in-one adapts to different ground forms;
- Small size, strong pass ability: compact, can pass through a half-meter channel;
- Powerful algorithm, high cleaning efficiency: In normal scenarios, the cleaning efficiency can reach 1008 m² /h
- Elevator Control
- Digital management

Clients get

- Robots enhance the sense of technology and service experience;
- Reduce potential employment risks and reduce management costs;
- There are records and reports, complaints can be dealt with, inspections are satisfactory, and work efficiency is

1. Product core performance introduction

1.3 Product Basic

TN35/10 Cleaning mode		Scrubbing, Sweeping, Vacuuming, Dust moping		
Basic	Product size (length x width x height)	520x420x490	Gross weight	26kg (to be measured by T1 prototype)
	Battery	Standard DC24V, 20Ah / Optional DC24V, 30Ah	Charging time	2h/3h
	Battery time of sweeping and scrubbing	3.5h/5h	Tank capacity	10L/15L
	Brush head type	double roller brush	Cleaning brush ground pressure	150g/cm2
	Brush cleaning width	350mm	Suction width	400mm
	Gradeability	10%	Maximum speed	0.6 m/s
	Max Cleaning Efficiency	756 m ² /h	Cleaning part distance to side	<3cm
	Side brush distance to side	0	Pass through width/height	600mm/600mm
	Noise	<65dB	Manual drive	none
	Dust bag	Optional	Dust mop	N/A
Parts	Workstation	External charging/charging pile/workstation	Cleaning solution Replenishment	Workstation Edition Optional
	Trash box capacity	1L	Cleaning solution storage capacity	1L
Smart System	Mapping	manual	Smart IoT	Standard
	Platform detection	Standard	Remote management	Standard
	Ladder control	Optional (2023 Q3)		
	Sensors	LiDAR, depth camera, monocular camera, edge sensor, low obstacle sensor, carpet recognition sensor		



1. Product Core Performance Introduction

1.4 Main features

7 categories, dozens of

sensors

- Sparkoz Technology's unique laser and vision dual-fusion positioning and composition AI algorithm can achieve accurate positioning and rapid map building in large scenes, and has multiple perception capabilities;
- Self-developed sensor technology, optimized synchronization and coordination between sensors, TN35 can run at a speed of 0.8m/s, control accuracy can reach 1cm , and work efficiency is 20%-50% higher than similar products on the market;
- With a better human-computer interaction experience, all kinds of digital cleaning reports and notification information can be seamlessly connected with people through equipment, which is not only easy to manage, but also can flexibly adjust cleaning tasks, bringing users a real robot cleaning experience .

Easy to operate

- Mapping and path learning process visualization, support APP interaction;
- Multi-role management logic, cleaners can easily start tasks with one button, and equipment can be dispatched in real time; multi-task management; in-depth maintenance inspection;
- Simple operation interface, status information is displayed through interactive lights, simple and intuitive operation, creating zero-cost learning.

High Flexibility

- The body is light and compact, with a body size of 522*422*489 , which can meet the needs of various welts and narrow passages in complex scenes;
- In the set map area, automatic cleaning operation according to the path, the speed can reach 0.8m/s , and the cleaning efficiency is 1008 m^2 / h

Professional cleaning chassis structure, more thorough

cleaning

- Professional scrubbing system, double roller brush structure and powerful suction rake, 150g/cm² ground pressure, bringing strong cleaning performance and quick-drying effect to the product;
- Four-in-one multi-mode cleaning to meet the needs of various commercial scenarios.

1. Product Core Performance Introduction

1.5 Selling point

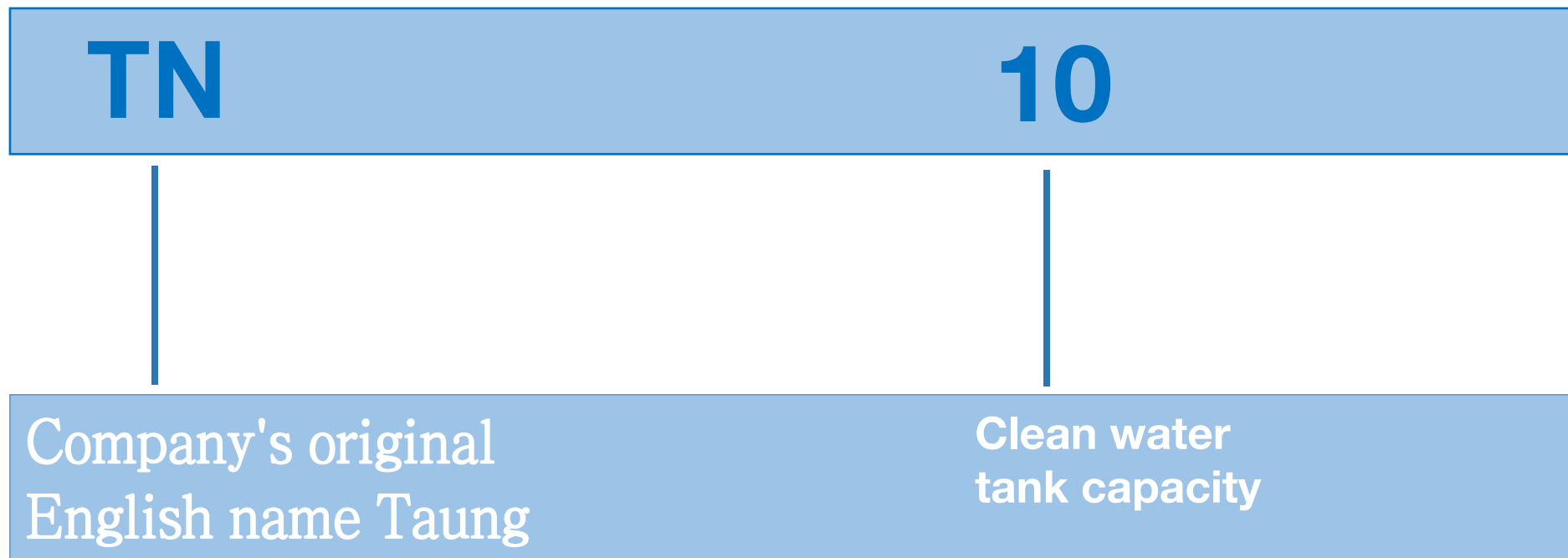


02

Product Introduction

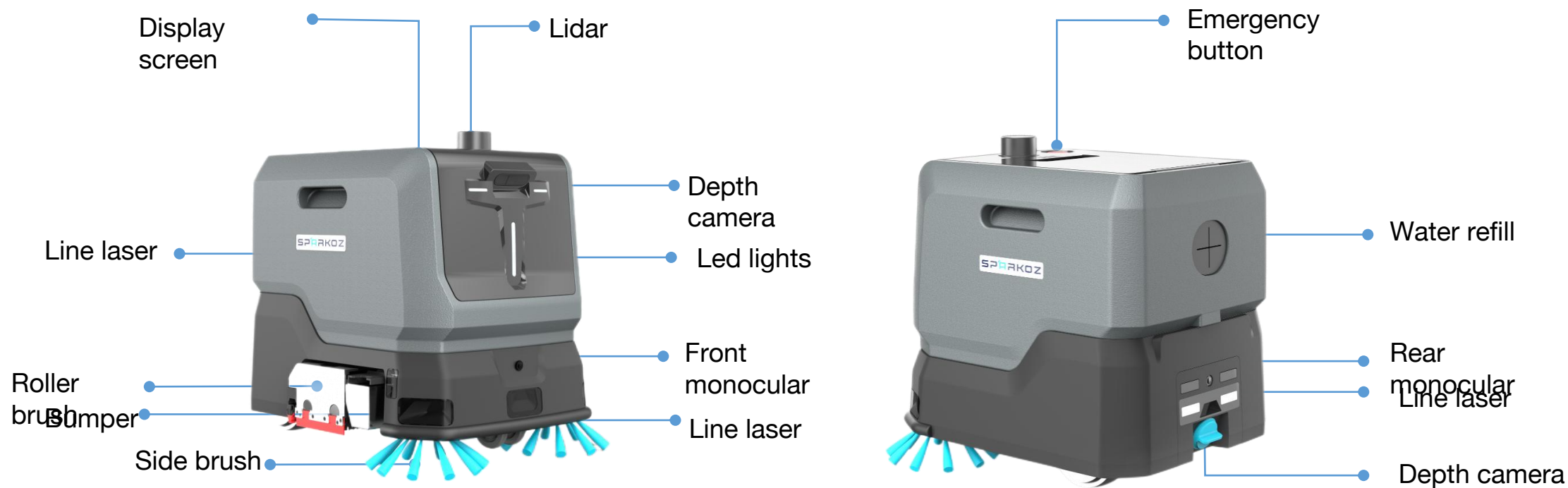
2. Product Introduction

2.1 The origin of the name



2. Product Introduction

2.2 Product features, highlights

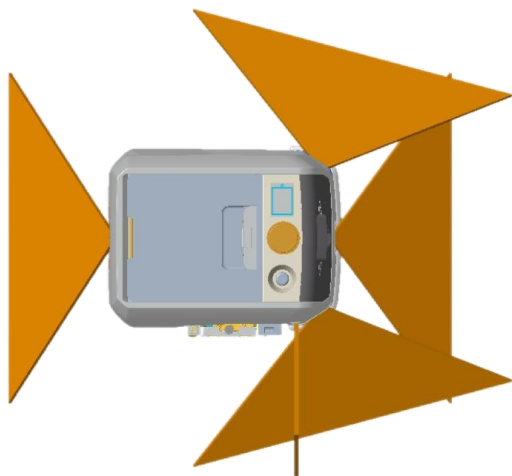


- Depth camera: high frame rate, ultra-sensitive for subtle capture, wide viewing angle
- LiDAR: high speed, long distance measurement, precision distance measurement
- 5 line lasers around the body : used for low obstacle recognition, well, collision avoidance, pile alignment, obstacle avoidance, multi-sensor cooperation, no dead angle around the body
- Electronic anti-collision strip: In the event of an accidental collision, the emergency stop device will be triggered immediately to ensure safety
- Side brush: achieve 0 edge, cleaning without blind spots

2. Product Introduction

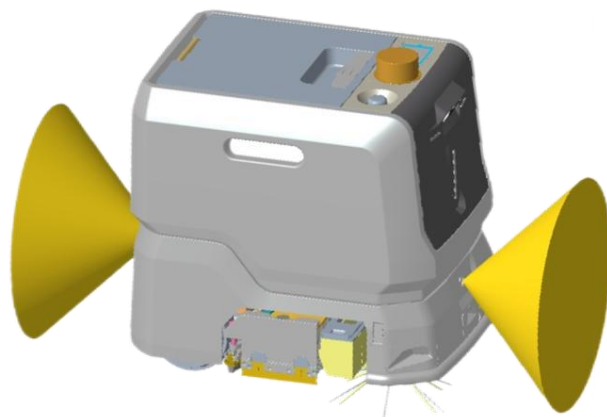
2.2 Product features, highlights (details)

Sensor coverage and viewing angle range:

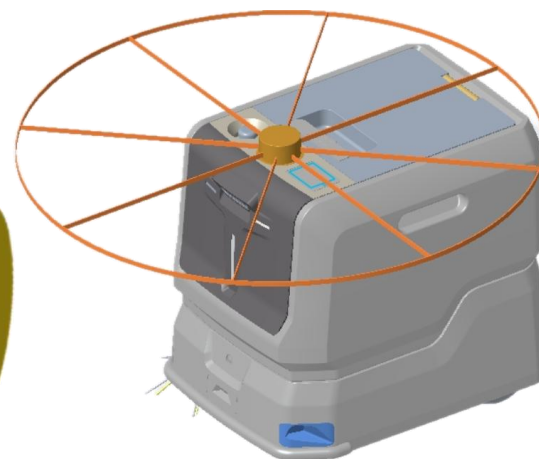


Line laser coverage and application:

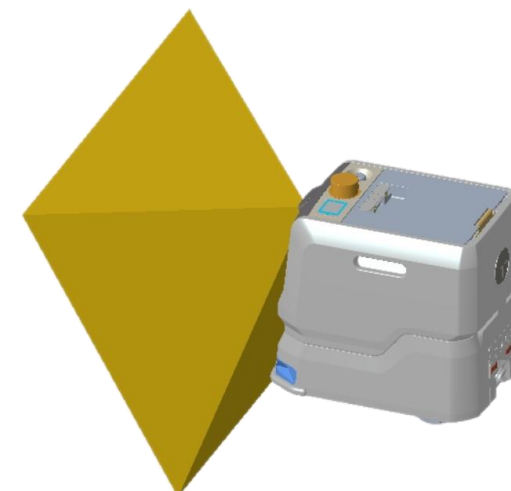
- Front 3x line laser, rear 1x line laser: identify low obstacles, avoid obstacles
- 1x line laser on the right : Obstacle recognition along the edge



Monocular coverage:
2x monocular



Top Flat Laser:
1x flat laser: map positioning,
obstacle avoidance, 360 °
viewing angle



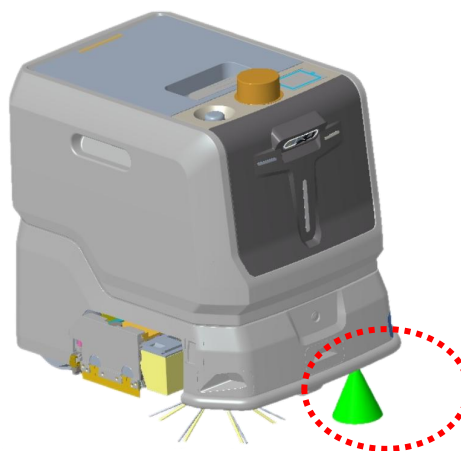
3D vision sensor TOF :
1xTOF : Obstacle avoidance

2. Product Introduction

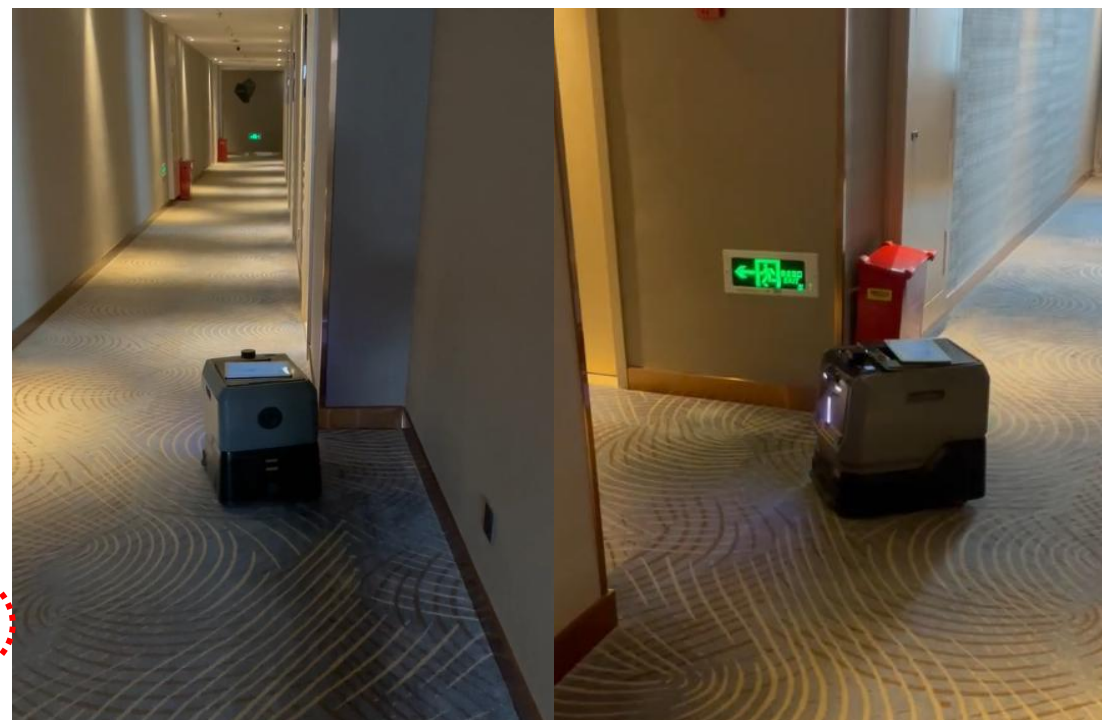
2.2 Product features, highlights (details)

Multi-sensor combination:

- Combination of wide-angle 3D-ToF camera, monocular panoramic camera and high-speed lidar: Integrate multi-sensing and AI algorithms to achieve accurate positioning, fast map building, and multi-sensing capabilities
- Chassis ground material recognition sensor: perfect for hard ground, soft ground, carpet and other ground materials
- Laser combination around the body: Accurately identify low obstacles and provide safety



Ground material sensor,
identify material



Adapt to the carpet, automatic
obstacle avoidance

2. Product Introduction

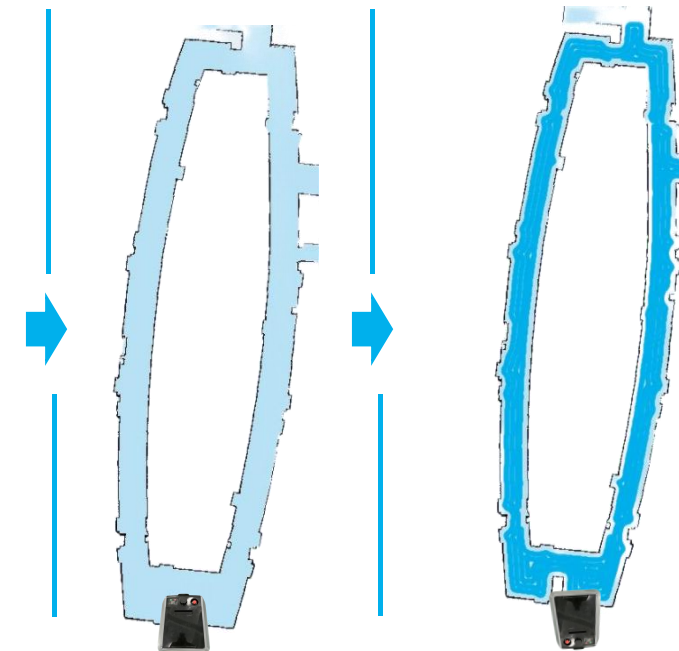
2.2 Product features, highlights (details)

Radar mapping and positioning

- Mobile phone APP and PAD APP can be selected for remote mapping
- Quickly create maps with push rods in the scene
- Mapping status can be seen on the APP
- Save the state and complete the scene building
- All kinds of large scenes, long hallway mapping and positioning capabilities
- A single map meets the needs of 5,000-square-meter



① into the environment



② Complete the map

③ complete cleaning tasks

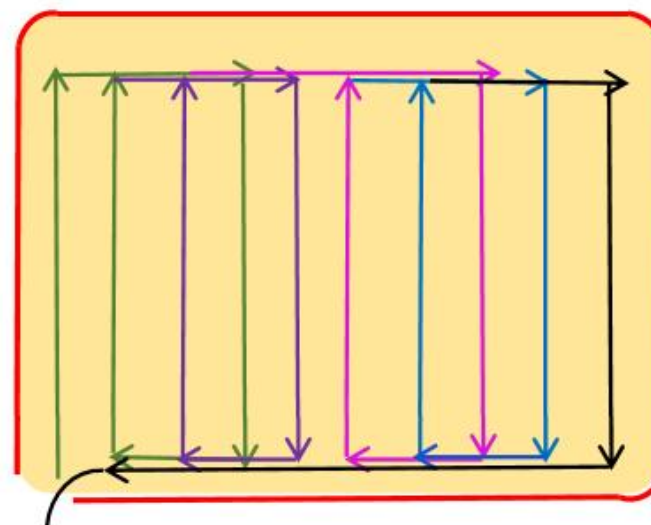
2. Product Introduction

2.2 Product features, highlights (details)

Automatic coverage:

- In a open area, after the map is recorded, the range is selected for automatic coverage;
- Static cleaning path
- One-key access to auto coverage mode

- ▾ —————
- Easy to use, high deployment efficiency



Open environment , great coverage according to the size of the space

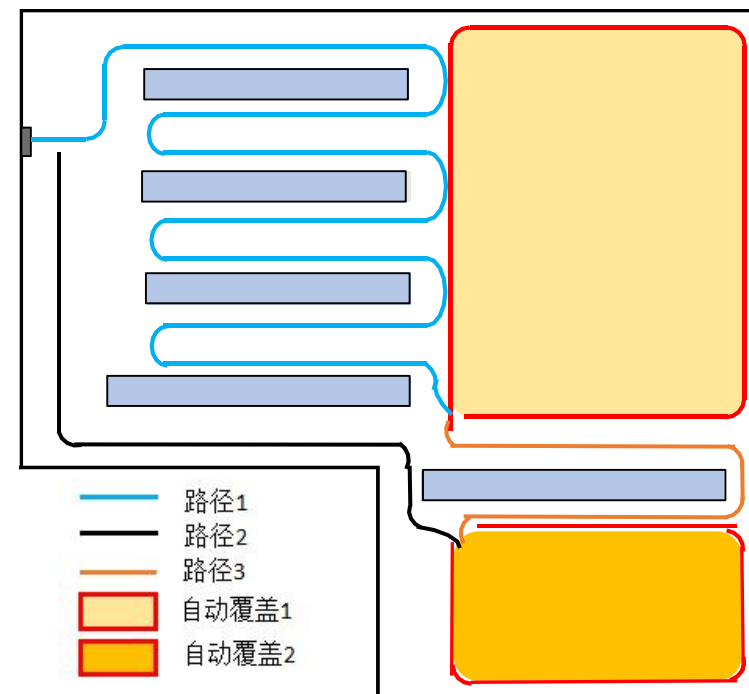
2. Product Introduction

2.2 Product features, overview of highlights (details)

Combined tasks and auto coverage:

- For relatively complex and larger environments, combined tasks can be completed;
- Large open areas can be automatically covered by frame selection;
- A relatively narrow environment can perform automatic tasks after path learning;
- As shown in the right picture, path learning 1 , 2 , 3 and automatic coverage area 1 , 2 are combined into a large and complex task, and the cleaning task can be completed by itself.

- ⚡ —————
- For a large and complex environment, only using path learning or only selecting automatic coverage is inefficient in this case, and you can choose the way of combining paths to meet the needs of efficient cleaning;
 - The combined task setting is easy to learn, saves time, completes complex tasks in an optimal way, and improves efficiency.



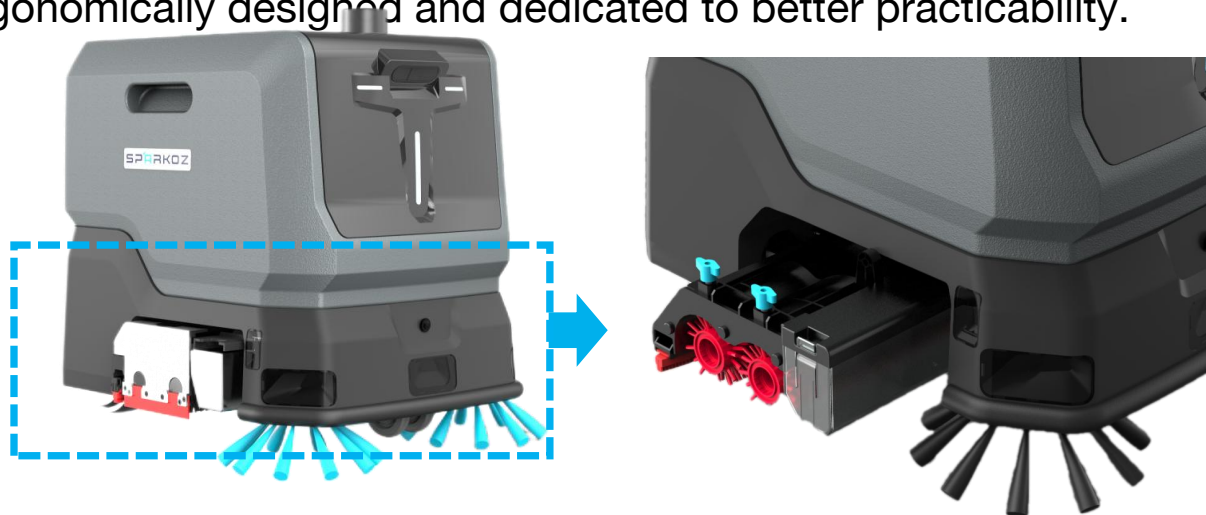
Combination Task

2. Product Introduction

2.2 Product features, highlights (details)

Professional scrubbing

- When cleaning, the pressure of the brush against the ground is 150g/cm², with super cleaning ability
- Great suction, no garbage stains on all kinds of floors.
- Welt side brush and right-side cleaning components realize the ultimate 0- edge cleaning operation and clean without dead ends
- ergonomic design
- The quick-release structure of the cleaning parts can quickly complete the disassembly of the roller brush, side brush, dust box, and suction rake without tools . It is more convenient to replace consumables. It is ergonomically designed and dedicated to better practicability.



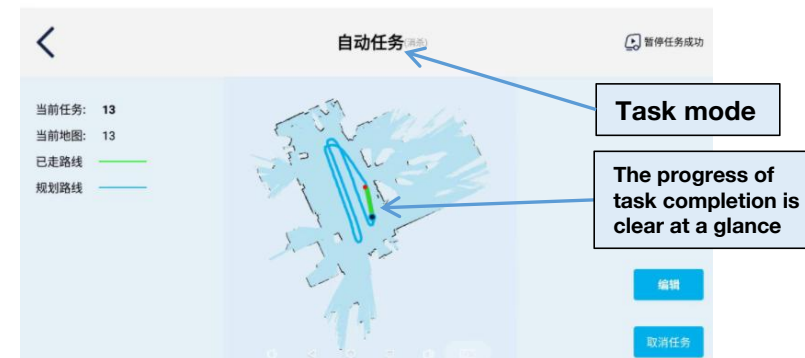
2. Product Introduction

2.2 Product features, highlights (details)

APP:

- Support mobile APP , PAD APP interaction;
- The interface is vivid, vivid, concise, and the process is clear, which can be understood at a glance;
- Multi-account management, different users have independent settings, account numbers and passwords.

- The UI interface is simple, and the icons are easy to understand, which simplifies the operation;
- The interface displays the water volume of the sewage tank, the water volume of the clean water tank, the power, and the status of the robot at a glance;
- Visual map building, path building, real-time dynamic path process, more effective human-computer interaction.
 - The picture on the right shows the automatic cleaning task, task 13 , the real-time dynamic details of the completed task

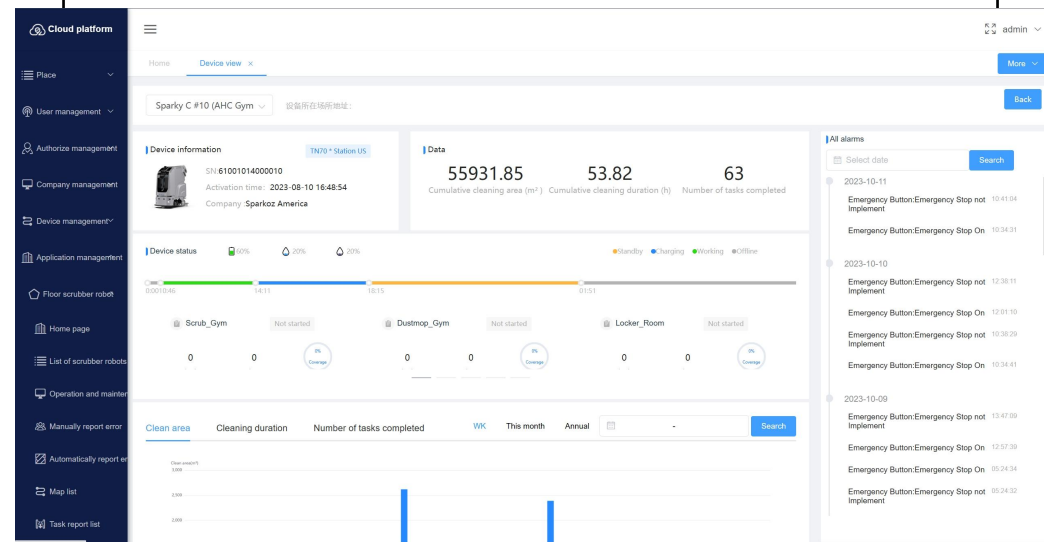
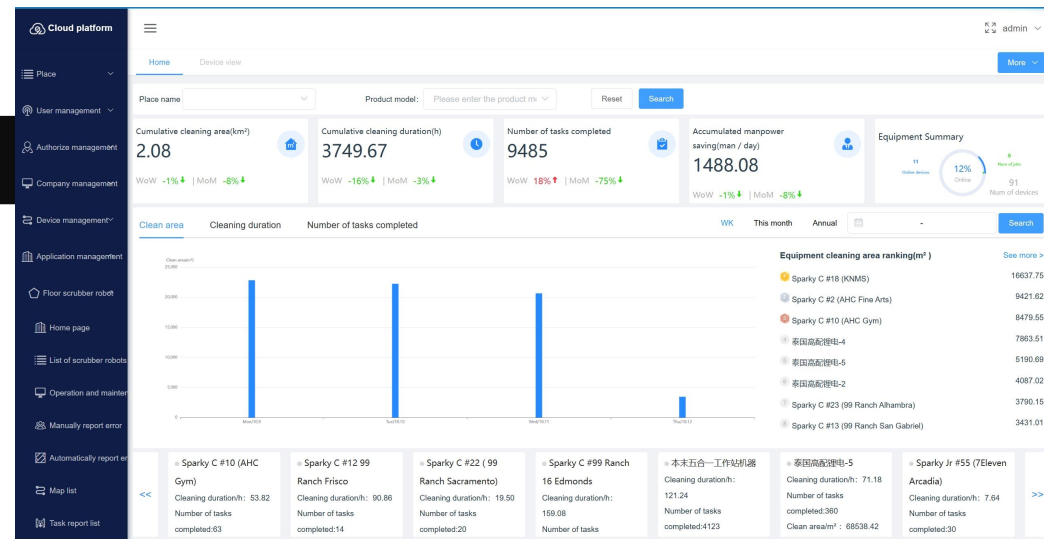


2. Product Introduction

2.2 Product features, highlights (details)

Sparkoz digital management platform:

- Self-developed Sparkoz robot information management platform;
- In the robot list, you can view the corresponding robot information according to the SN , including:
 - ① Current status, usage, software version, configuration information;
 - ② overall working efficiency and utilization rate of the robot ;
 - ③ Task information, map information, consumables management, fault information;
 - ④ View task report, robot real-time information;
 - ⑤ Remote deployment is also possible;
 - ⑥ Support mobile phone text messages to receive task exceptions and task completion notifications.
- Realize the transparency of robot information, making supervision, operation and maintenance and other functions easier;
- Consumables management, provide regular maintenance reference, and guide customers to improve usage efficiency;
- When a fault occurs or a task is completed, a text message will be sent to notify the user, without affecting other work of the user;
- One-click online upgrade of OTA software to continuously improve work efficiency.



03

Application Scenarios

3. Marketing / Sales / Service

3.1 Application scenarios

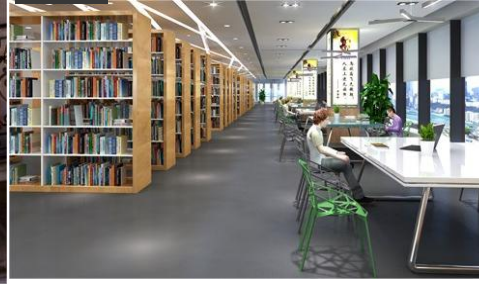
01 Hospital



02 Hotel



03 Education



04 Retail



05 Restaura



06 Apartmen



04

Charging Station

Sparkoz TN10 charging station

□ Product introduction

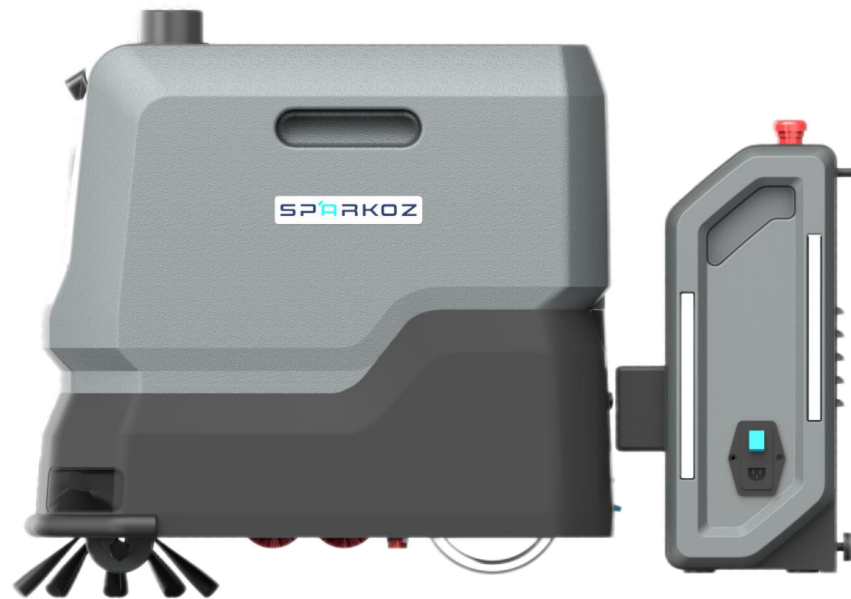
The TN10 charging station is an automatic charging device specially designed for the TN10 , which can automatically charge the robot during its mission. In the absence of human intervention, the frequency of human intervention is effectively reduced.

□ Product Feature Highlights

- Automatic charging
- Scheduled tasks on the charging station



Sparkoz TN10 Charging Station



Sparkoz TN10 Charging Station



	规格	参数
Basic	Size(L*W*H)	
	Weight	
	Voltage	25.6V
	Power	
	Installation notes	



Thank you!