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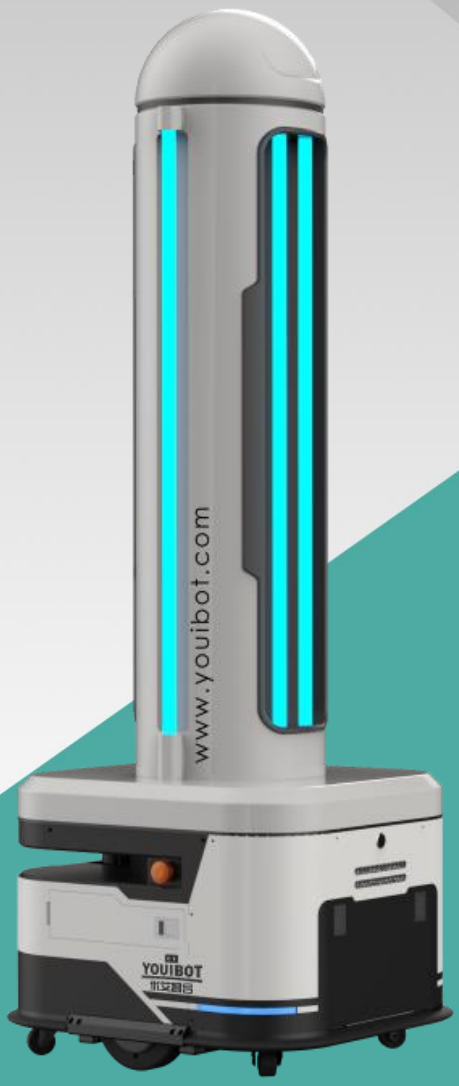


ARIS-K2

Virus killing robot with UV light

www.youibot.com

CONTENTS

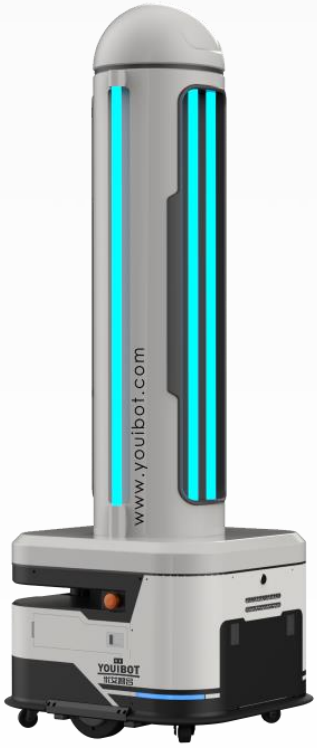
01

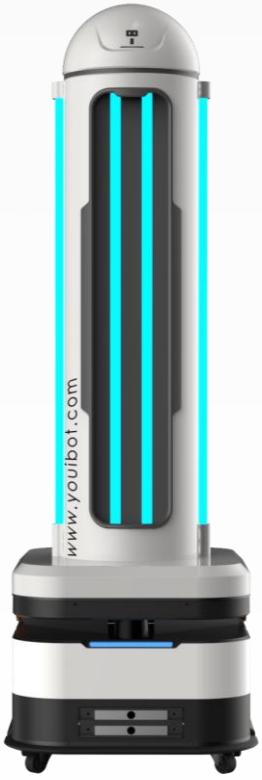
Introduction

Autonomous mobile robot empowers manufacturing and maintenance.

PRODUCT
INTRODUCTION

Highlights





- Indoor autonomous moving killing virus by UV light
- Equipped with infrared temperature checking
- Day for temperature monitoring and night for disinfection
- The accumulated UV light intensity is up to 270uv / CM^2 , which is the most efficiency disinfection and sterilization function in the industry
- Complete and mature cognitive and positioning navigation capabilities based on SLAM algorithm
- UV killing robot is suitable for mobile regional disinfection in the places with large personnel flow such as shopping malls, stations, offices, factories, etc.
- Robot is compliance with National standard （China） GBT 30030-2013 automatic guided vehicle (AGV)
- UV light achieves GB 19258-2012

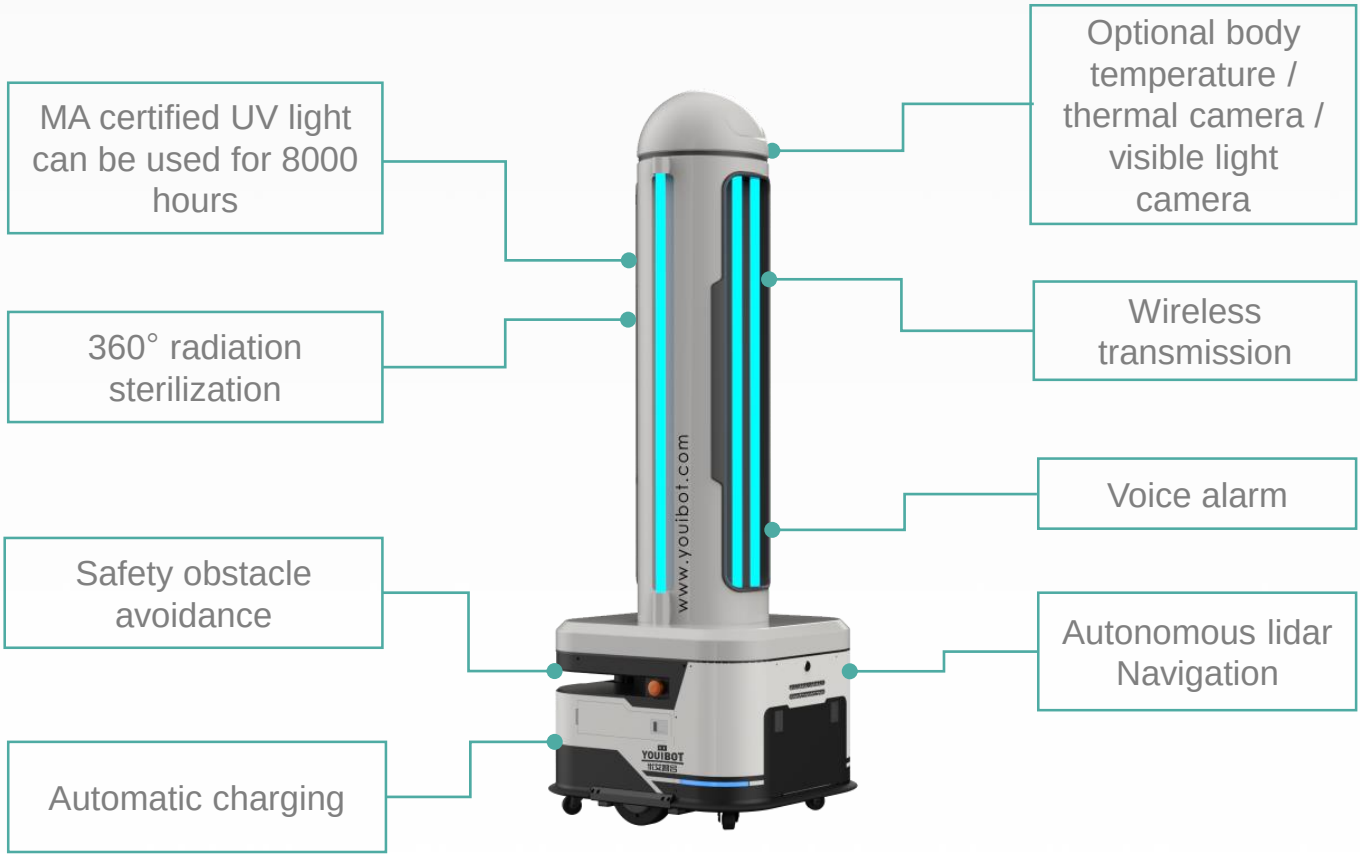
02

Product details

Autonomous mobile robot empowers manufacturing and maintenance.

PRODUCT
INTRODUCTION

Main functions and components



Functions

- UV antivirus
- 360 degree radiation
- Safety obstacle avoidance
- Automatic charging
- Wireless transmission
- Language early warning
- Thermograph of body temperature*
- Autonomous navigation

PRODUCT
INTRODUCTION

Features

- One robot dual use

  Day for body temperature checking and night for virus killing

- Removable virus killing

  UV lights integrated with autonomous moving robot to do the virus killing work, one machine instead of traditional fixed air disinfector, ultraviolet lamp and chemical fumigation

- Intelligent body temporary checking

  The professional thermal camera can do personnel temperature detection and automatic alarm which can avoids the short distance temperature measurement and effectively prevents the close contact with the infected person.

- Efficient virus killing using 6 UV lights

  The UV killing robot uses six UV lamps with non ozone wavelength of 254nm, which makes the killing process safer, non-toxic and residue free. Six lamps are covered in all directions, with accumulated light intensity of 270uv / cm2 and coverage radius of 6m.

- Autonomous charging

  Guarantees 7 * 24 hours uninterrupted operation

- Systematic management

  The disinfection management system is able to automatically calculate the disinfection time according to the space area and quantify the management of the disinfection process

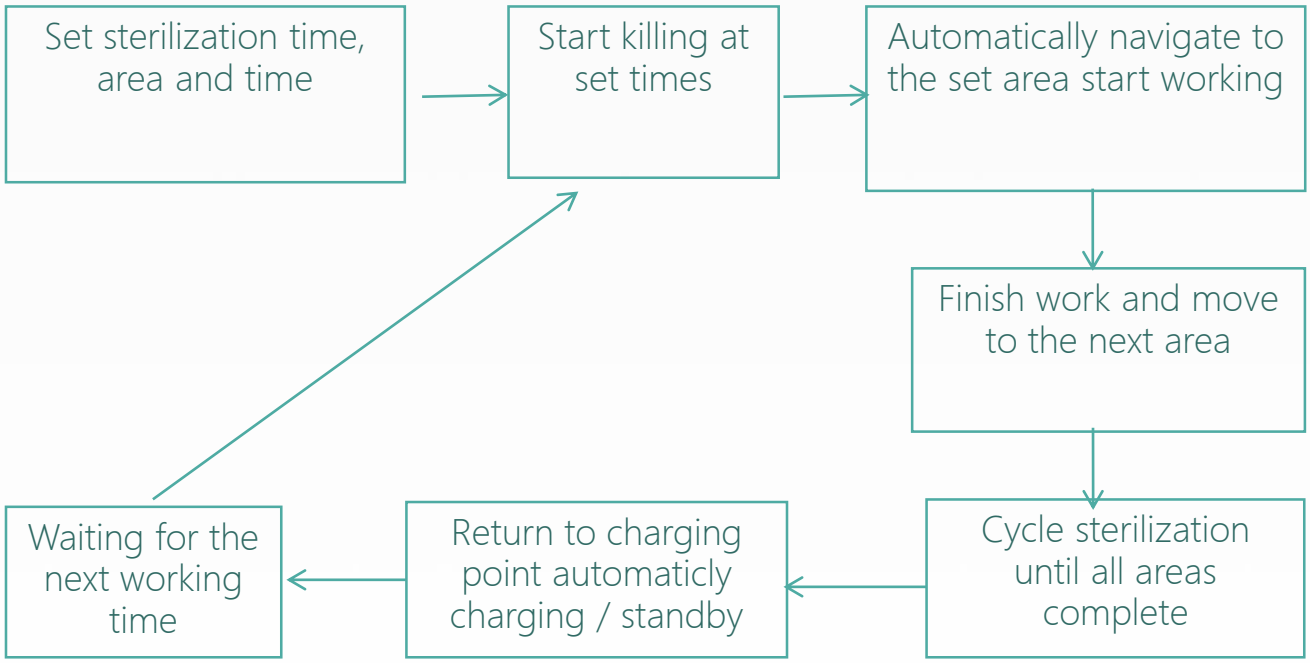
03

Antivirus process

Autonomous mobile robot empowers manufacturing and maintenance.

PRODUCT INTRODUCTION

Antivirus process



PRODUCT
INTRODUCTION

Usage scenarios

Office scene

Hospital scenario

Shopping malls

Airport and other
public scenes

PRODUCT
INTRODUCTION

Mobile temperature monitoring

With dual light thermal camera

Move the robot to the flow passing point, camera targets at the flow, and set the alarm threshold → The camera automatically recognize the face and measure the temperature of person pass by → The alarm is triggered when the body temperature is higher than threshold figure, reminding the staff "please check the body temperature if the body temperature is abnormal"

Normal body temperature

Abnormal body temperature

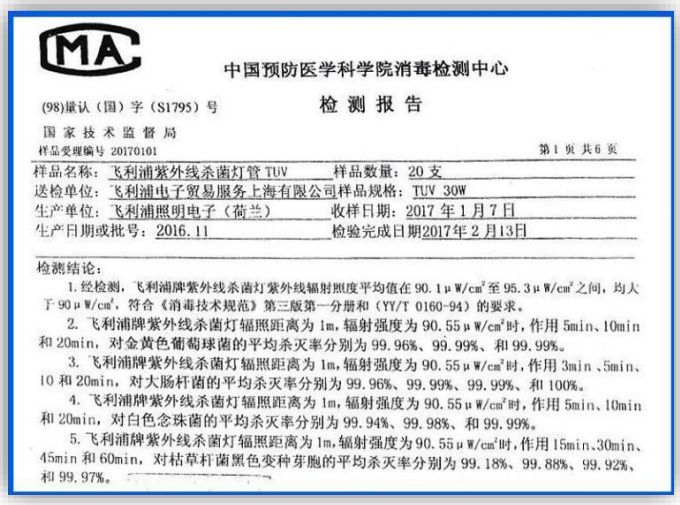
PRODUCT INTRODUCTION

Disinfection and sterilization effect

- **99.9999 sterilizing rate**
  Virus killing robot uses short wave UVC ultraviolet to kill bacteria. In a few minutes, it destroys DNA and RNA of bacteria to make them die, which can effectively achieve the killing effect. After testing, the spores on the surface of environmental substances (smooth surface, rough porous surface) and all kinds of multidrug-resistant bacteria can reach 99.9999% of the killing effect required by high level disinfection. ·

- **10 times efficient**
  The mobile robot as the carrier is able to disinfect a thousand square meters within 150 minutes, which is ten times more efficient and effective than the previous manual and fixed disinfection.

Notes:
·Sterilization efficiency and distance of robot: 1. Quantity of glass tube ultraviolet lamp: 6; 2. Ultraviolet irradiation direction: 360 ° omnidirectional; 3. Accumulated light intensity: 270uv / cm2; 4. Ultraviolet power: 180W; 5. Single point disinfection time: 10min; 6. Coverage radius of mobile path: 6m.



中国预防医学科学院消毒检测中心

(98)量认（国）字（S1795）号　　检 测 报 告

国 家 技 术 监 督 局

样品受理编号 20170101　　第 1 页 共 6 页

样品名称：飞利浦紫外线杀菌灯管 TUV　　样品数量：20 支

送检单位：飞利浦电子贸易服务上海有限公司　样品规格：TUV 30W

生产单位：飞利浦照明电子（荷兰）　　收样日期：2017 年 1 月 7 日

生产日期或批号：2016.11　　检验完成日期2017年 2 月13日

检测结论：

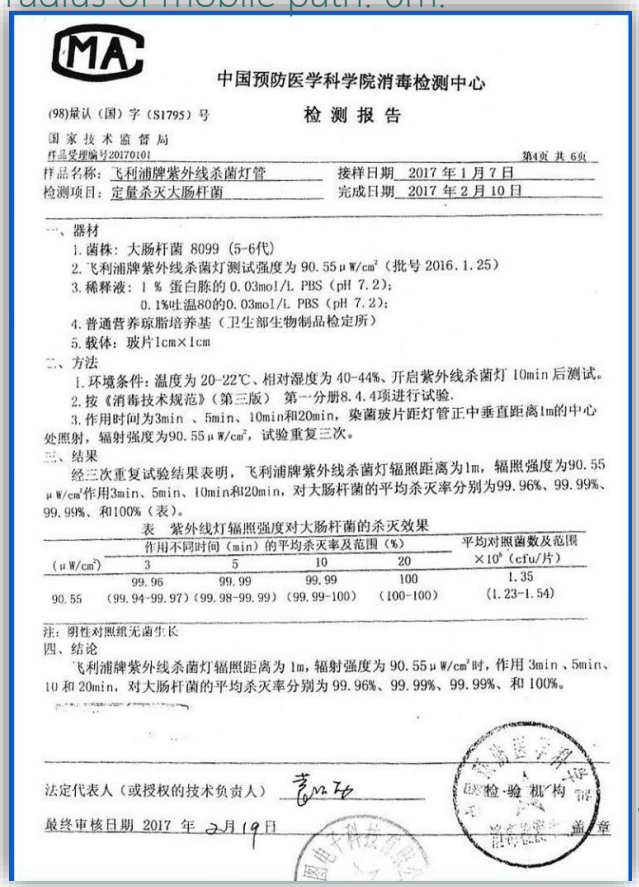
1. 经检测，飞利浦牌紫外线杀菌灯紫外线辐射照度平均值在 90.1 μW/cm² 至 95.3 μW/cm² 之间，均大于 90 μW/cm²，符合《消毒技术规范》第三版第一分册和（YY/T 0160-94）的要求。

2. 飞利浦牌紫外线杀菌灯辐照距离为 1m，辐射强度为 90.55 μW/cm² 时，作用 5min、10min 和 20min，对金黄色葡萄球菌的平均杀灭率分别为 99.96%、99.99%、和 99.99%。

3. 飞利浦牌紫外线杀菌灯辐照距离为 1m，辐射强度为 90.55 μW/cm² 时，作用 3min 、5min、10 和 20min，对大肠杆菌的平均杀灭率分别为 99.96%、99.99%、99.99%、和 100%。

4. 飞利浦牌紫外线杀菌灯辐照距离为 1m，辐射强度为 90.55 μW/cm² 时，作用 5min、10min 和 20min，对白色念珠菌的平均杀灭率分别为 99.94%、99.98%、和 99.99%。

5. 飞利浦牌紫外线杀菌灯辐照距离为 1m，辐射强度为 90.55 μW/cm² 时，作用 15min、30min、45min 和 60min，对枯草杆菌黑色变种芽胞的平均杀灭率分别为 99.18%、99.88%、99.92%、和 99.97%。



中国预防医学科学院消毒检测中心

(98)量认（国）字（S1795）号　　检 测 报 告

国 家 技 术 监 督 局

样品受理编号 20170101　　第4页 共 6页

样品名称：飞利浦牌紫外线杀菌灯管　　接样日期 2017 年 1 月 7 日

检测项目：定量杀灭大肠杆菌　　完成日期 2017 年 2 月 10 日

一、器材

1. 菌株：大肠杆菌 8099（5-6代）

2. 飞利浦牌紫外线杀菌灯测试强度为 90.55 μW/cm²（批号 2016.1.25）

3. 稀释液：1 % 蛋白胨的 0.03mol/L PBS（pH 7.2）；
0.1%吐温80的0.03mol/L PBS（pH 7.2）；

4. 普通营养琼脂培养基（卫生部生物制品检定所）

5. 载体：玻片1cm×1cm

二、方法

1. 环境条件：温度为 20-22℃、相对湿度为 40-44%、开启紫外线杀菌灯 10min 后测试。

2. 按《消毒技术规范》（第三版） 第一分册8.4.4项进行试验.

3. 作用时间为3min 、5min、10min和20min，染菌玻片距灯管正中垂直距离1m的中心处照射，辐射强度为90.55 μW/cm²，试验重复三次。

三、结果

经三次重复试验结果表明，飞利浦牌紫外线杀菌灯辐照距离为1m，辐照强度为90.55 μW/cm²作用3min、5min、10min和20min，对大肠杆菌的平均杀灭率分别为99.96%、99.99%、99.99%、和100%（表）。

表　紫外线灯辐照强度对大肠杆菌的杀灭效果

（μW/cm²）	作用不同时间（min）的平均杀灭率及范围（%）				平均对照菌数及范围 ×10⁶（cfu/片）
	3	5	10	20	
90.55	99.96 (99.94-99.97)	99.99 (99.98-99.99)	99.99 (99.99-100)	100 (100-100)	1.35 (1.23-1.54)

注：阴性对照组无菌生长

四、结论

飞利浦牌紫外线杀菌灯辐照距离为 1m，辐射强度为 90.55 μW/cm² 时，作用 3min 、5min、10 和 20min，对大肠杆菌的平均杀灭率分别为 99.96%、99.99%、99.99%、和 100%。

法定代表人（或授权的技术负责人）

最终审核日期 2017 年 2月19日　　盖章

04

Product Specifications

Autonomous mobile robot empowers manufacturing and maintenance.

PRODUCT INTRODUCTION

Product specification

Category	Item	Parameter
Material of body	Material of body	Cold rolled steel + plastic
Size	Size	580x500x1200mm
Weight	Weight (including battery)	50KG
Environmental conditions	Ambient temperature	5 to 40 degrees
	Ambient humidity	Relative humidity 5 to 95% (no condensation)
	Running environment	Indoor use only, no excessive dust, no corrosive gas
	Protection level	IP20
	Cleanliness grade	Class100
Ground conditions	Antiskid coefficient of ground	≥0.5
	Ground requirement	Horizontal ground for concrete pouring (without water, oil or dust)
	Minimum flatness of ground	Ff25 (* ACI 117 standard)
	Vertical obstacle surmounting ability	10mm
	Ability to cross gullies	±20mm
	Climbing ability	5°
Navigation	Path selection	Secure scanning lidar based on environment mapping independent path selection
	Navigation system	Provide large-scale lidar mapping, lidar positioning, lidar path planning, lidar navigation functions, including obstacle avoidance and recovery control.
	Rendering of environmental map	Scanning with Slam (positioning and mapping at the same time)
	Navigation mode	Laser landmark navigation
Running speed	Maximum speed	1 m / S (theoretical maximum speed)
	Maximum rotational speed	180°/s
Mobility performance	Stopping precision	Position accuracy: ± 1 cm, angle accuracy: ± 2 °
Driving wheel	Texture of material	Polyurethane
	Size	Diameter 150 * 35mm
Battery	Battery	Industrial grade lithium iron phosphate battery, high stability, metal shell safety protection, earthquake resistance, accidental strong impact damage, no open fire
	Capacity	0.75kwh
	Running time	6H
	Charging time	≤2.5H
	Battery life	Cycle life ≤ 1500 times, keep 80% capacity after 1500 times
	Charging mode	Auto / manual
	Power output	12V 5A / 24V 5A
	protection system	Power protection, temperature protection

PRODUCT INTRODUCTION

Product specification

Category	Item	Parameter
Equipment	Wireless signal receiver	Secure encryption, low delay, high bandwidth for image transmission
	IPC	Industrial control computing system
	Guided gyroscope	Auxiliary inertial navigation system for Complex Pavement
	Camera	Optional / thermograph or visible camera
Sterilization efficiency	Ultraviolet sterilization efficiency and distance	1. Quantity of glass tube ultraviolet lamp: 6; 2. Ultraviolet radiation direction: 360 ° omnidirectional; 3. Accumulated light intensity: 270uv / cm2; 4. UV power: 180W; 5. Single point disinfection time: 10 minutes; 6. Coverage of moving path: radius 6-10m.
Security function	Safety lidar	Fuselage front Detection distance: 30m Detection angle: 270 °
	Emergency stop button	2 buttons on the left and right sides of the housing
	Collision bars	Surround robot 360 degrees
Operation panel and interface	Status indicator lamp	three colors of status indicators, which located in the robot shell.
	Start button	1 at the rear of the robot shell
	Wireless network	IEEE 802.11 A/C
System	Control mode	Unattended operation
	Disinfection and sterilization	UV sterilization
	Remote interaction	Voice intercom, remote control
	Intelligent system	Single machine scheduling system
	Robot scheduling management system, remote assistant patrol intelligent system	Robot system scheduling, remote control, patrol plan, data query
Accessories (optional)	Remote control computer	Lenovo or DELL brand desktop computers
	Switch	Huawei or the same quality brand
	On site wireless base station AP	Including a set of high-power host, antenna, lightning arrester and power divider to meet the requirements of robot operation in 100m × 100m open area

PRODUCT
INTRODUCTION

Standard and specification

Standards:

- Robot standard: China) GBT 30030-2013 automatic guided vehicle (AGV)
- UV light standardGB 19258-2012

Specification of UV light:

1. Wavelength: 254nm;
2. Intensity: 90uv / cm2;
3. Power: 30W;
4. Length: 900mm;
5. Recommended disinfection time: 30min;
6. Recommended coverage distance: 6-10m.

The overall sterilization efficiency and distance of the robot:

1. The number of lights: 6;
2. Ultraviolet irradiation direction: 360 ° omnidirectional;
3. Cumulative light intensity: 270uv / cm2;
4. UV power: 180W;
5. Single point sterilization time: 10 minutes;
6. Coverage radius of the mobile path: 6m.

PRODUCT INTRODUCTION

Accessoris specification

Automatic charging station

Current range	5-30A
Voltage range	15-60V
Contact point	2
Battery	180VAC-260VAC/45Hz-65Hz
Rated output power	1800W
Working temperature	-15°C-+50°C
Working humidity	10%-90%RH
Size	500*500*380mm
Weight	15kg
Installation mode	Back against the wall or directly on the floor using a wall bracket

Handheld charging head

Model	NE02
Maximum charging voltage	58.8V
Maximum charging current	8A
Input	AC185V-AC265V;47Hz-63Hz

Remote control

Model	F710
Weight	200g
Protection level	IP20
Battery type	The 5th battery

Wireless AP remote view (optional)

Modal	AWK-1131A
Size	58*115*70mm
Installation mode	Rail installation or wall mounting
Power supply	12-48VDC (6.72W)
Protection level	IP30

PRODUCT INTRODUCTION

Accessoris specification

Double light thermal imager for human body temperature measurement* (optional module of temperature measuring robot)

Functions	Parameter
Abnormal temperature function	Full screen temperature measurement, expert mode: 10 points, 10 frames, 1 line, 21 temperature measurement rules in total
Body temperature measurement	Support AI face detection, multi-target temperature detection at the same time
Measuring range	30-45℃
Temperature alarm	The built-in horn triggers the alarm "body temperature is abnormal, please check the body temperature", and the linkage white light flashes
Temperature measurement accuracy	±0.5℃
Dual optical fusion	Support the fusion of visible light image information in the thermal imaging channel to improve the image details of the thermal imaging channel
Picture in picture	Support superimposed heating imaging information in visible light channel image (only support temperature measurement rules, temperature measurement values)
Visible light main stream	60Hz: 30fps (Output: 1920 × 1080),
Thermal imaging main stream	25fps: (Output: 320 × 240)