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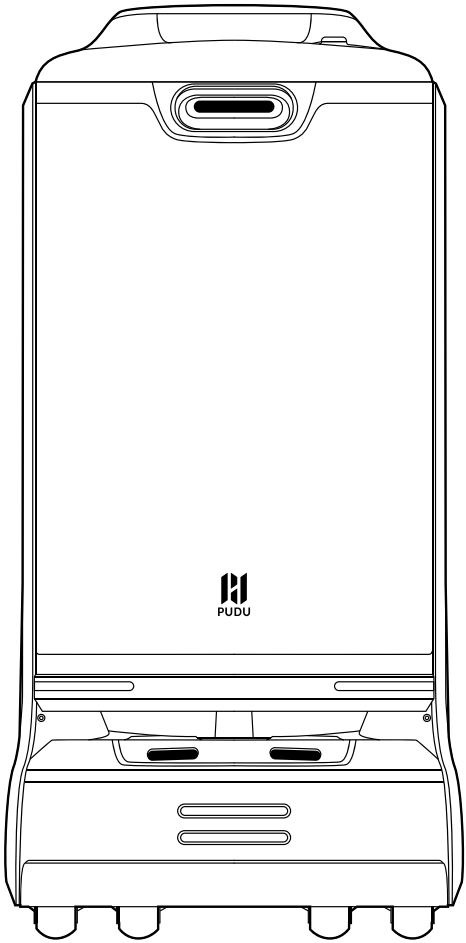

型号：FBBDR1

用户手册 V1.0

闪电匣机器人 · FlashBot

用户手册 V1.0

User Manual

目录

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声明

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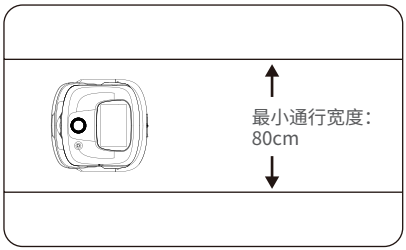
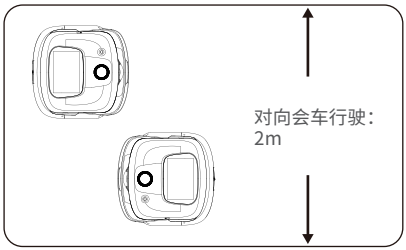
安全须知

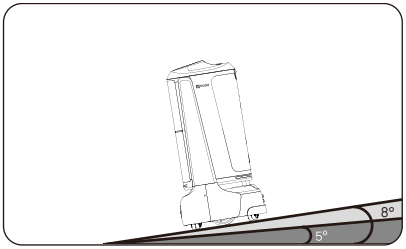
1.1 统一说明

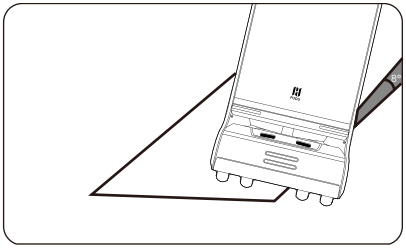
- 本产品为轮式机器人，仅限于室内平坦环境使用，如地板，瓷砖，薄地毯等，请勿用于户外（如开放式阳台）、崎岖地面（如阶梯）等环境，请勿在环境高于 40°C或低于 0°C或地面有任何液体及粘稠物的环境下使用
  运行过程中请勿拉拽或推动机器人，如需推动或者搬运机器人请先按下急停开关让其暂停。
- 禁止遮挡机器人元器件或放置超过装载空间的物品，否则可能导致机器人行走不正常或定位丢失。
- 禁止拍打设备或用力按压敲击屏幕，否则易造成设备损坏
- 禁止机器人超载运行，禁止承放任何可燃固、气、液体等违禁物品；不允许配送高温和汤水类物品，以免对机器和行人造成损伤。
- 禁止在机器开机运行状态下做维护工作。
- 使用前请先将环境中地面各种线材收起，避免主机运行时拖拽。请将地面尖锐物体（如装修废料、玻璃、铁钉等）清除，以免对机器底盘造成伤害。
- 为保证安全建议将机器人速度调整至 0.8m/s 及以下，禁止在机器人前方嬉戏打闹以避免不必要的伤害，机器人有自动避障功能，但存在识别盲区，故严禁在机器人高速行驶期间突然阻挡机器人，否则可能引发安全事故。
- 禁止配送未封装的饮料或液体，禁止配送高温液体。
- 机器人最佳通行宽度应大于 80cm，长通道需要宽度大于 1m 流畅性最佳，宽度大于 2m 通道可设置两台机器人对向会车行驶（具体宽度由技术人员根据实际场景评估）。



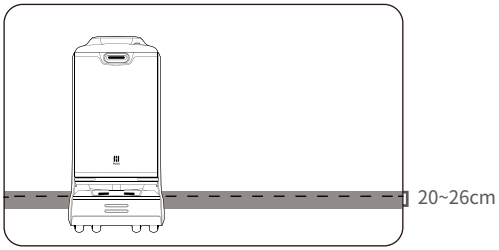


- 机器人设计最大爬坡角度为 8°，但为防止运载物品倾倒，建议坡度在 5° 内为宜，最大不超过 7.5°；为防止机器人滑坡后溜导致可能风险，应避免在机器人上坡期间暂停机器；为防止机器人斜坡上意外跌落，斜坡宽度不应小于最小通行宽度 80cm，侧翻角度不允许超过 8°。





- 需要在阶梯边沿，下坡的入口等有机器人跌落风险的地方增加栅栏或者其他阻挡防护
- 地面高度 20~26cm 之间有纯黑色（如踢脚线）、镜面（如墙面）、全透明（如落地玻璃窗）的物件，可能干扰机器人雷达反射，造成机器人行走异常，可能需要对场地进行一定的改造（如粘贴贴纸）。



1.3 电源与用电须知

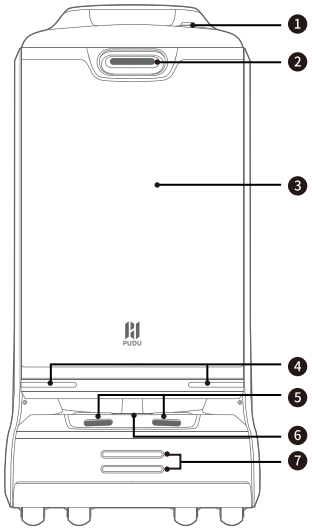
- 机器人剩余电量小于 20%，请及时充电，长时间低电量运行可能会缩短电池使用寿命；
- 若长时间不使用机器人，请及时将产品断电以保护机器电池；
- 务必使用原厂专配的可充电电池与充电设备，严禁使用非原厂充电器对机器人充电；
- 按照充电器铭牌标识的电源电压为机器人充电；
- 机器人电池故障，需联系厂家更换电池，严禁非专业人士操作；
- 请勿将机器放置于易燃易爆物体附近充电；
- 机器人存放及充电位置请保持干燥、常温，严禁将机器以及充电器放置于高温区域（＞ 40°C），严禁机器以及充电器进水；
- 严禁充电器与外物碰撞，造成充电器损坏；
- 收到机器人报警，请立即断开充电设备

产品组成

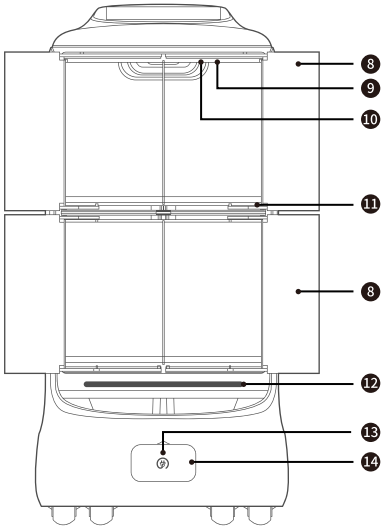
2.1 包装清单

产品清单	出货配置
整机	标配
《闪电匣使用指南》	标配
保修卡	标配
合格证	标配
电源钥匙	标配
电话系统	选配
电梯物联系统	选配

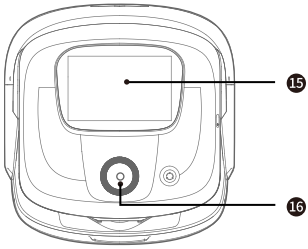
2.2 产品外观



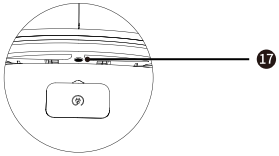
正面



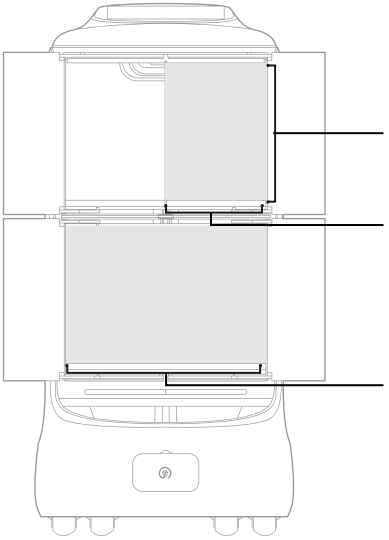
背面



顶面

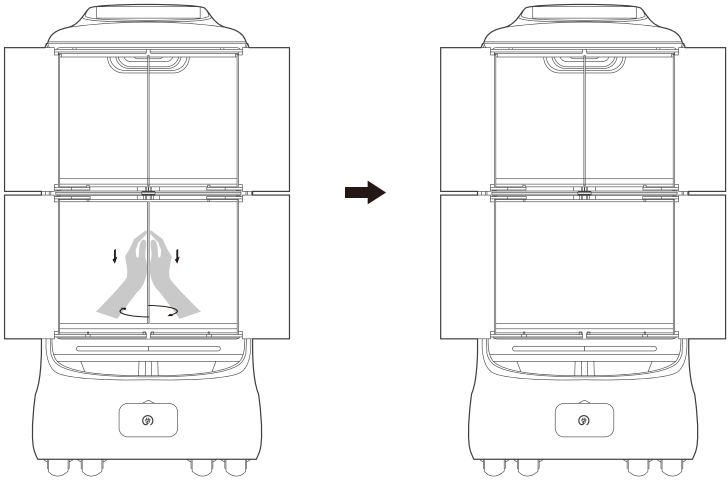


1. 急停按键
2. 下视 RGBD
3. 电子皮肤（高配）
4. 指示灯带
5. 上视 RGBD
6. 激光雷达
7. 充电电极片
8. 分控舱门
9. 舱内白光照明灯
10. 舱内紫外消毒灯
11. 卡槽
12. 氛围灯
13. 钥匙开关
14. 充电插卡口
15. 操作屏
16. 摄像头
17. 开关键



注意：
舱体中间竖向隔板可拆除。

挡板拆除方式：



2.3 技术规格

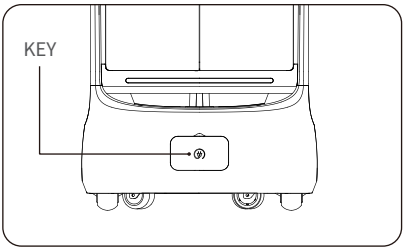
产品特性	描述
定位方式	PUDU SLAM 定位方案
整机材质	高品质工程塑料 + 航空铝合金
整机尺寸（长 * 宽 * 高）	539mm*515mm*1050mm
装载区尺寸	单仓（宽 * 深 * 高）：219mm*410mm*286mm 双仓（宽 * 深 * 高）：438mm*410mm*286mm
自重	55kg
负载能力	30kg（每层 15kg）
电池容量	15.6Ah 396.396Wh
运行速度	0.5~1.5m/s 可调节
充电时长	4.5H
续航时长	12H
充电器输出	29.4V 3.5A
充电器输入	100-240V
工作电压	25.41V
电池容量	15.6Ah
最小通过宽度	700mm
最大越障高度	20mm
最大爬坡角度	8°
最大过缝宽度	35mm
最大避障距离	3m
刹车距离	0.6m
最小越障速度	零速越障
紫外波长	260-280nm
音响功率	4Ω 10W
屏幕大小	10.1 寸
工作温度	0°C - 40°C
存储温度	0°C - 60°C
ESP32	2.4GHz-2.5GHz；BT:2402-2480MHz
WIFI	2.4G, 2.400GHz-2.497GHz(2.4 GHz ISM Band);5G, 4.900GHz-5.845GHz(5.0 GHz ISM Band); BT: 2402-2480MHz
4G	B1/B2/B4/B5/B6/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B34/B38/B39/B40/B41

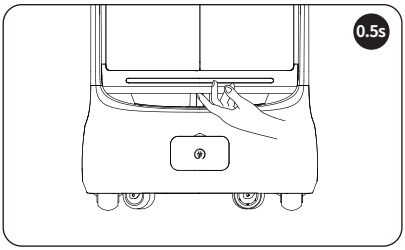
功能说明

3.1 开关机说明

开机：

将机器人推到开机定位点→打开钥匙开关→长按开关键 0.5 秒，底部灯带显示蓝色。



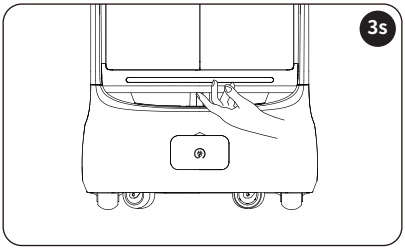


开机定位点：

- 支持多开机点开机；
- 支持将充电桩设置为开机点。

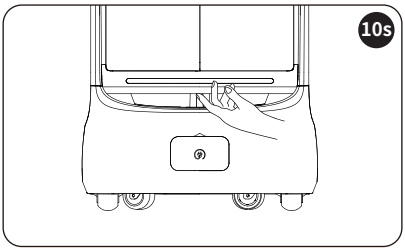
关机：

长按开关机键 3 秒，点击屏幕上的“关机”按键，灯光和屏幕熄灭，机器人关机。



强制关机：

长按开关机键 10 秒关机。

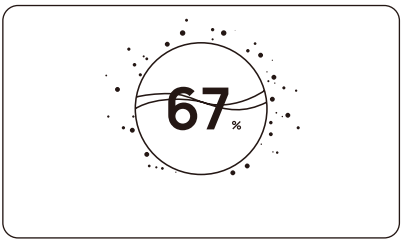


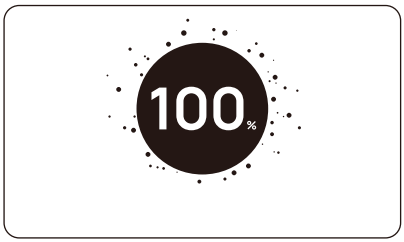
3.2 充电说明

机器人支持充电器充电和充电桩充电两种方式。

充电器充电：将机器人充电接口连接充电线，保证机身充电口与充电线连接。机器人开机状态下显示屏提示“正在充电”表示正在充电；机器人在关机状态下，灯带灯光点亮表示正在充电。

充电桩充电：点击屏幕上的“一键回充”icon，机器人自动执行充电任务；或手动推动机器人至充电桩，使机器人的充电电极片与充电桩的充电电极片接触。机器人开机状态下显示屏提示“正在充电”表示正在充电；机器人在关机状态下，灯带灯光点亮表示正在充电。





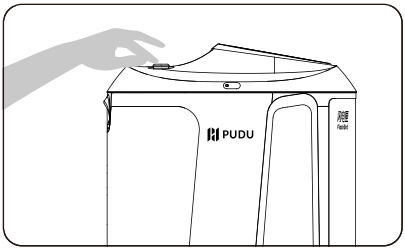
灯光电量对应表：

电量说明	灯光显示
0-30%	紫色呼吸
30-60%	黄色呼吸
60-90%	绿色呼吸
90-100%	蓝色呼吸
100%	蓝色常亮

3.3 运行说明

暂停：

机器人运行中，按下急停开关，机器人运动暂停。



进入暂停状态，需输入正确的管理员密码，才能修改任务。

机器人在等待电梯和乘坐电梯时不能进入暂停状态。

3.4 功能说明

客房送物：

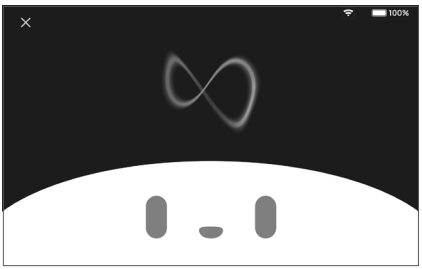
进入客房送物界面，初始密码为 0000。放置物品并输入舱体对应的目标点，点击开始，机器人自动前往目标点。

注意：

机器人抵达目标点后，只打开与目标点对应的舱体。

迎宾带客：

迎宾模式下可与机器人语音对话，带客模式下，机器人带领客人前往目标点。



一键回充：

点击“一键回充”按键，机器人自动前往充电桩充电。

舱体自消毒：

设置界面中开启消毒，机器人在送物过程和待机状态下对舱体进行紫外消毒。

* 功能不定期更新，以机器实际功能为准。

售后服务

4.1 维护与保养

公司承诺符合以下情况，自产品收货之日起，在产品有效保修期内（产品的不同部件保修期限有所不同），符合如下情况的将提供免费的产品保修服务。

- 自购买产品在规定的产品保修期限内正常使用，出现非人为的质量问题；
- 无擅自拆机、无非官方说明书指引的改装或加装、其它非人为引起的故障；
- 产品序列号、出厂标签及其他标示无撕毁、涂改迹象；
- 提供有效的购买证明、单据及单号；
- 免费保修期内更换的损坏备件属公司所有，应按公司要求寄回。

4.2 保修范围外的售后服务

对于不在免费保修范围内的售后服务（超出保修期或者在保修期内不符合免费保修条款），公司提供收费售后服务；

- 公司官方提供线上和远程技术支持渠道，客户需配合技术工程师进行问题诊断和故障处理；
- 经技术工程师诊断必须上门解决问题的，指派专业技术人员提供上门服务；
- 不在免费保修范围内的售后服务，需按照要求填写《售后服务记录表》；
- 服务费用包含：售后维护费用以及备件费用。

4.3 售后服务咨询

如果您有任何问题需要咨询，请联系普渡科技客服热线：400-0826-660。

邮箱：techservice@pudutech.com。

售后人员服务工作时间是：每周一至周六，上午 9：30 至 12：00，下午 13：30 至 18：30。

Statement

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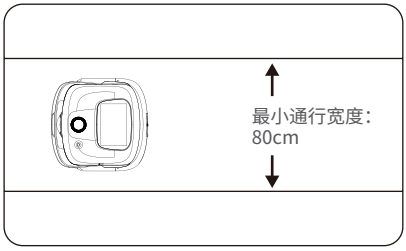
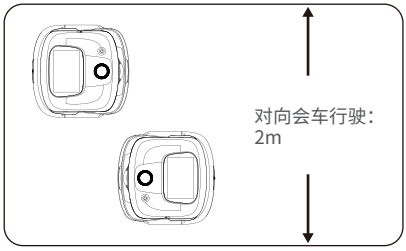
Safety Instructions

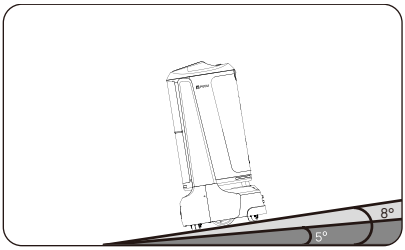
1.1 Unified Instructions

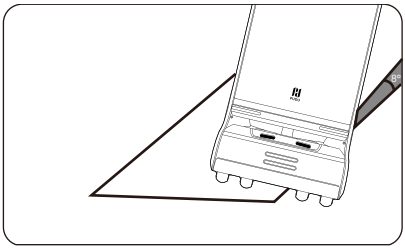
- This wheeled robot can only be used indoors on flat surfaces such as wood floors, ceramic tiles, and thin carpets. Using in outdoor space (for example, open balcony), on the rugged ground (for example, stairs), in a temperature above 40° C or below 0° C, or on surfaces covered with fluid or gooey stuff is not allowed.
- Do not pull or push the robot while it is working. If you need to push or move the robot, press the emergency stop switch to stop it from moving first.
- Do not block the robot components or overfill the tray. Otherwise, the robot may fail to move properly or get lost.
- Do not pat the device or press or tap hard on the screen, or damages may be caused.
- Do not overload the robot. Do not put any flammable solid, gas, or liquid on the tray. Do not deliver goods with high temperatures or soups to avoid damaging the robot or injuring the passer-by.
- Do not maintain the robot when the power is on.
- Cables on the ground should be put away in advance to prevent the robot from dragging them.
- All sharp-edge objects (such as decoration wastes, glasses, nails) should be removed from the ground to prevent damage to the robot chassis.
- A maximum speed of 0.8m/s is recommended for safe operation. No playing is allowed in front of the robot to avoid unnecessary harm. Although the robot features automatic obstacle avoidance, there is a blind spot. Blocking the robot moving at a high speed may cause accidents.
- Do not deliver unpackaged drinks or beverages. Do not deliver liquids at high temperatures.
- The aisle should be at least 80cm wide for the robot to pass. In the case of a long aisle, a width of 1m is recommended for smooth moving. A width of 2m allows two robots to move in two directions (The required width depends on the technician's evaluation of the scene).



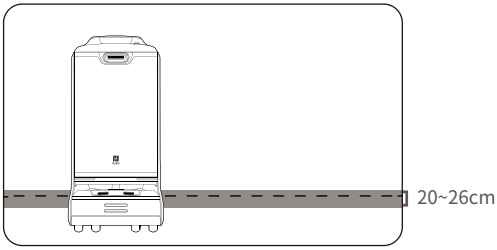


- The maximum possible slope is 8° for the robot. To prevent spilling, the suggested slope should be less than 5°, and the limit of 7.5° should not be exceeded. To prevent sliding, the robot should not be paused when moving uphill. To prevent falling, the slope should be at least 80cm wide, and the roll angle should not exceed 8° .





- It is necessary to add fences or other barriers at the edge of a staircase, entrance to a downslope, or other places where the robot is at risk of falling.
- Things that are black (for example, skirting line), polished (for example, wall), or transparent (for example, French window) at a height of 20 to 26cm or below may interfere with the radar and cause abnormal moving of the robot. Such sites should be modified (e.g., posting stickers).



1.2 Instructions on power supply and power usage

- When the battery drops to 20%, the robot should be charged timely. Running at a low battery for a long time may impair battery life.
- If not used for a long time, the robot should be shut down to protect the battery.
- Always use the original rechargeable batteries and chargers. Do not charge your robot using non-original chargers.
- Charge the robot according to the power voltage indicated on the charger nameplate.
- If the robot battery is at fault, please contact the manufacturers for replacement, do not have it operated by a non-professional.
- Do not charge the robot near flammable and explosive objects.

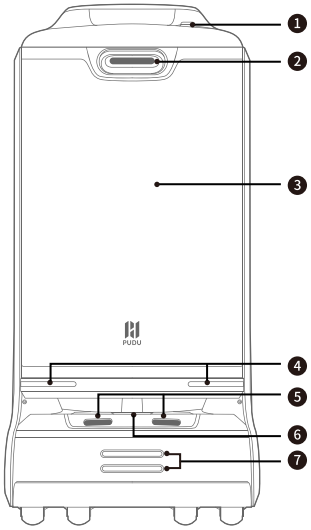
- Store and charge the robot in a dry area at room temperatures. Never place the robot and charger in an area of elevated temperatures (>40° C). Never let water get into the robot and charger.
- Protect the charger from collision damage.
- When the robot sends an alarm, disconnect the charger immediately.

Product Components

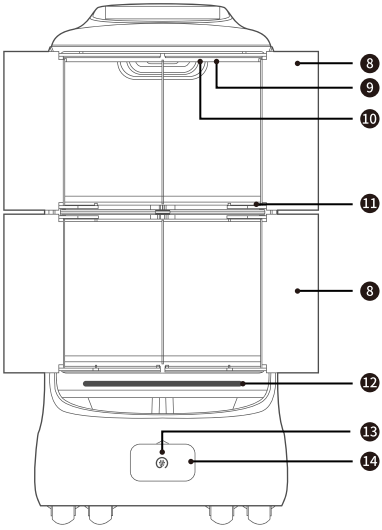
2.1 Packing list

Packing list	Configuration
Robot	Standard
FlashBot User Manual	Standard
Warranty card	Standard
Quality certificate	Standard
Power key	Standard
Phone system	Optional
Elevator IoT system	Optional

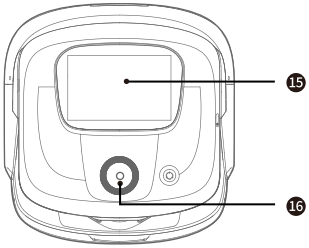
2.2 Product appearance



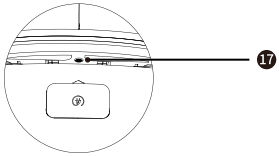
Front



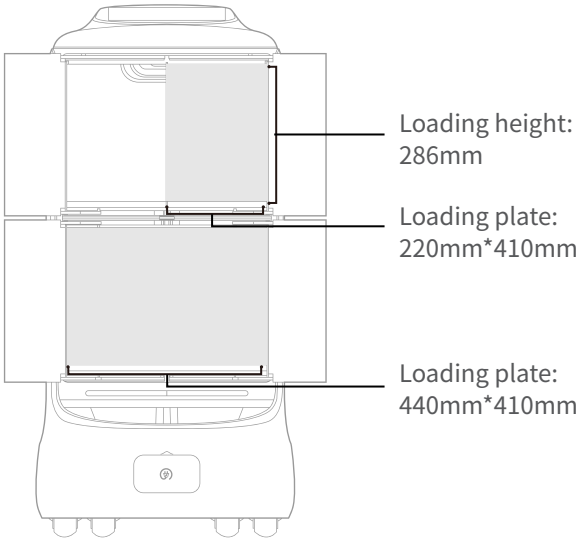
Back



Top

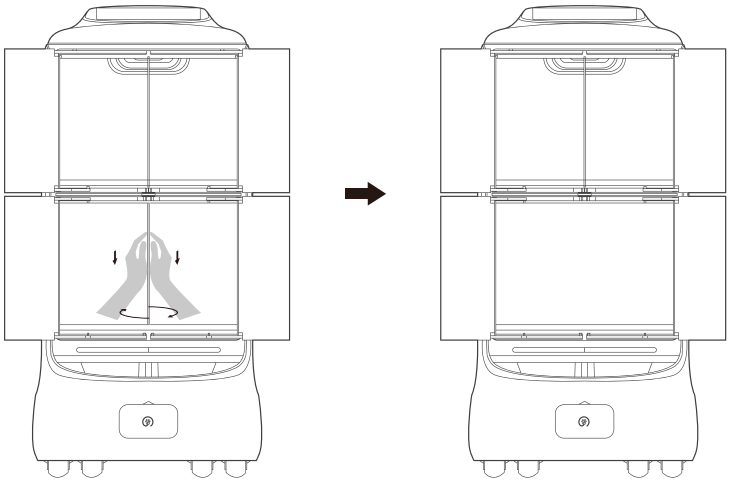


1. Emergency stop button
2. Downward RGBD camera
3. E-Skin (advanced configuration)
4. Indicator strip
5. Upward RGBD camera
6. Lidar
7. Charging electrode plate
8. Sub-control compartment doors
9. White lamp in compartment
10. UV lamp in compartment
11. Card slot
12. Ambient light
13. Key switch
14. Charging jack
15. Operation screen
16. Camera
17. On/Off switch



Note: ⚠
The vertical partition plate can be removed (the design needs to clearly indicate whether the robot features single or double compartment)

Removal of partition plate:



2.3 Technical specifications

Feature	Description
Positioning method	PUDU SLAM positioning solution
Material	High-quality industrial plastic + aviation grade aluminum alloy
Machine dimension (L×W×H)	539mm*515mm*1050mm
Loading area dimensions	Single compartment (W*D*H): 219mm*410mm*286mm Double compartment (W*D*H): 438mm*410mm*286mm
Robot weight	55kg
Load capacity	30kg (15kg for each tray)
Battery capacity	15.6Ah 396.396Wh
Moving speed	Adjustable between 0.5~1.5m/s
Charging time	4.5H
Battery life	12H
Power output	29.4V3.5A
Power input	100-240V
Operating voltage	25.41V
Battery capacity	15.6Ah
Minimum travel width	700mm
Maximum surmountable height	20mm
Maximum climbing angle	8°
Maximum surmountable gap	35mm
Maximum obstacle avoidance distance	3m
Braking distance	0.6m
Minimum surmountable speed	Zero-speed surmountable
UV wavelength	260-280nm
Speaker power	4Ω 10W
TP	10.1
Working temperature	0°C - 40°C
Storage temperature	0°C - 60°C

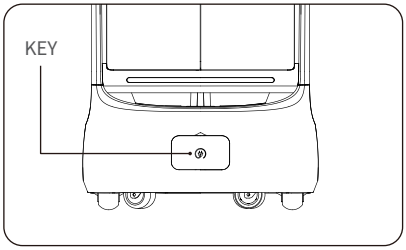
ESP32	2.4GHz-2.5GHz；BT:2402-2480MHz
WIFI	2.4G, 2.400GHz-2.497GHz(2.4 GHz ISM Band);5G, 4.900GHz-5.845GHz(5.0 GHz ISM Band); BT: 2402-2480MHz
4G	B1/B2/B4/B5/B6/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B34/B38/B39/B40/B41

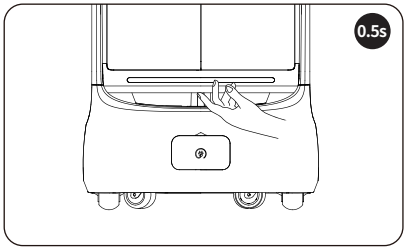
Functions

3.1 Powering on and off

Power-on:

Push the robot to the positioning location → Turn on the key switch → Press and hold the on/off switch for 0.5 seconds, and wait until the bottom appears in blue.





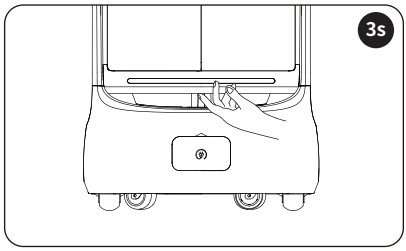
Positioning location for power-on:

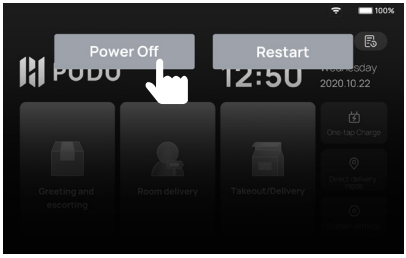
- Multi-location power-on is allowed.
- The charging pile can be set as the power-on location.

Power-off:

Press and hold the on/off switch for 3 seconds, at which point the lamp and screen are off

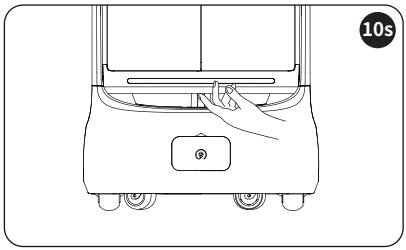
Forced power-off: Press and hold the power switch for 10 seconds.





Forced power-off:

Press and hold the power switch for 10 seconds.



3.2 Charging

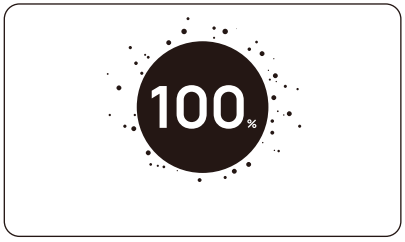
The robot can be charged by charger and charging pile.

Charge by charger:

Plug the charging cable into the charging port of the robot and secure the connection. During charging, if the robot is powered on, the screen displays Charging; if it is powered off, the light strip illuminates.

Charge by charging pile:

By tapping the One-tap Charge icon, the robot automatically performs the charging task; you can also charge the robot by pushing the robot to the charging pile and aligning the charging electrode plates on the robot with the ones on the charging pile. During charging, if the robot is powered on, the screen displays Charging; if it is powered off, the light strip illuminates.



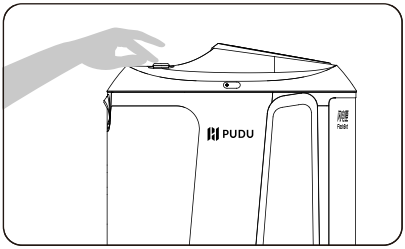
Light display and battery indication:

Battery indication	Light Display
0-30%	0-30%
30-60%	30-60%
60-90%	60-90%
90-100%	90-100%
100%	Fully charged

3.3 Operations

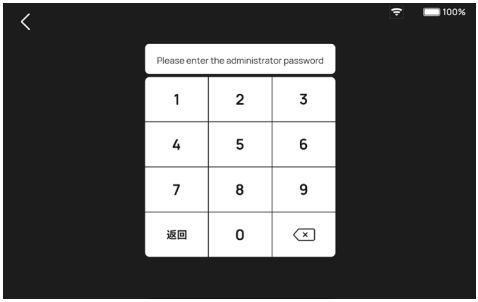
Pause:

When the robot is working, press the emergency stop switch to pause the robot.



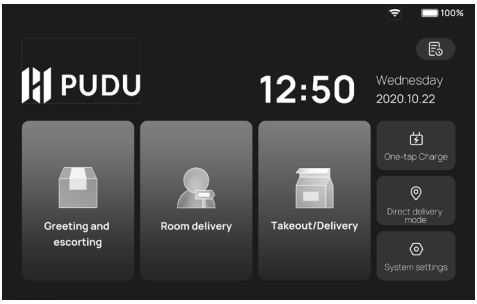
If no operations are performed during the pause, the robot will proceed with its previous task

During the pause, an administrator authentication is required to modify tasks.



The robot cannot enter a paused state when it is waiting for or riding an elevator.

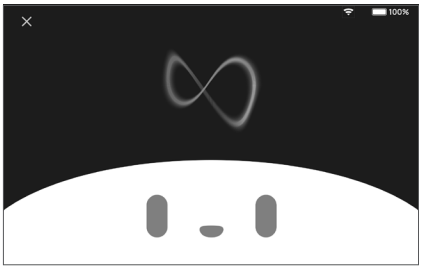
3.4 Functions

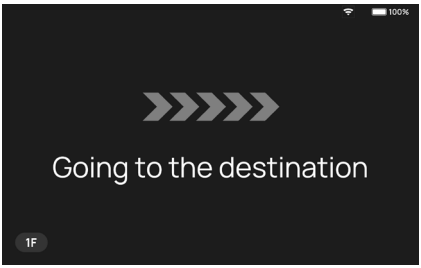


Room delivery:
Enters the room delivery interface; the initial password is 0000. Place the objects and enter the destination for the compartment. Tap "Start" and the robot heads towards the destination automatically.

Note: ⚠
After arriving at the destination, the robot will only open the corresponding compartment to the destination.

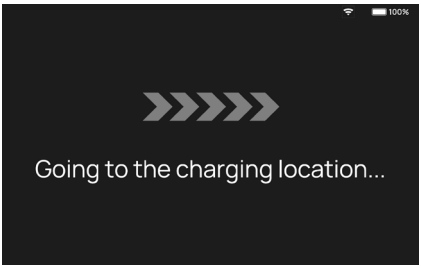
Greeting and escorting:
Under greeting mode, the robot can be interacted with by voice; under escorting mode, the robot will escort the guest to the destination.





One-tap charge:

Tap the "One-tap Charge" button and the robot will automatically head towards the charging pile for charging.



Autonomous disinfection:

After the disinfection function is enabled on the setting interface, the robot will disinfect the compartments with UV light during delivery and standby.

* The function is subject to updates from time to time, and the actual function of the robot shall prevail.

After-Sales Service

4.1 Free Warranty

When the robots are under warranty (different warranty periods for different components, calculated from the receipt of the robot), Pudu offers a free warranty if:

- Defects are caused by non-human factors;
- There are no unauthorized disassembly, modification or addition not included in the user manual, or other faults caused by non-human factors;
- The robot S/N sticker and other labels are not removed or altered;
- Effective purchase certificate, receipt, and order number are provided;
- Damaged components are sent back to Pudu as required.

4.2 Paid Services

Pudu offers paid after-sales services when the robot is out-of-warranty or the policy of free warranty is not applicable:

- Online and remote technical support is provided, and customers should cooperate with engineers for diagnosis and troubleshooting;
- Technicians will offer on-site service when necessary;
- The “After-sales Service Form” should be filled when the policy of free warranty is not applicable;
- Customers should pay for both maintenance and spare parts.

4.3 Contact

For any questions, please call us at 400-0826-660.
Email: techservice@pudutech.com.
Our technical support staff are available Monday through Saturday from 9:30 a.m. to 12:00 p.m. and 1:30 p.m. to 6:30 p.m. (GMT+8).

www.pudutech.com

DECLARATION OF CONFORMITY

I hereby declare that the product

Description: FlashBot
Type or model name: FBBDR1
Brand name: PUDU

(Name of product, type or model, batch or serial number)

Hardware version number: V3

Software version number: V8.1.0.12

satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/53/EU, 2014/35/EU and 2014/30/EU:and declare that the same application has not been lodged with any other notified body.

EN 62368-1:2014/A11:2017

EN 50663: 2017

ETSI EN 301 489-1 V2.2.3 (2019-11)

ETSI EN 301 489-3 V2.1.1 (2019-03)

ETSI EN 301 489-17 V3.2.4 (2020-09)

ETSI EN 301 489-19 V2.1.1 (2019-04)

Draft ETSI EN 301 489-52 V1.1.2 (2020-12)

EN 55032:2015/A11:2020

EN IEC 61000-3-2:2019

EN 61000-3-3:2013+A1:2019

EN 55035:2017/A11:2020

ETSI EN 301 908-1 V13.1.1 (2019-11)

ETSI EN 301 908-2 V13.1.1 (2020-06)

ETSI EN 301 908-13 V13.1.1 (2019-11)

ETSI EN 300 328 V2.2.2 (2019-07)

ETSI EN 301 893 V2.1.1 (2017-05)

ETSI EN 300 440 V2.2.1 (2018-07)

ETSI EN 300 220-1 V3.1.1 (2017-02)

ETSI EN 300 220-2 V3.2.1 (2018-06)

All essential radio test suites have been carried out.
Feature

Operation Frequency:
WCDMA2100:1920-1980 MHz
WCDMA900:880-915 MHz
LTE Band 1: 1920-1980 MHz
LTE Band 3: 1710-1785 MHz
LTE Band 7: 2500-2570 MHz
LTE Band 8: 880-915 MHz
LTE Band 20: 832-862 MHz
LTE Band 28: 703-748 MHz
LTE Band 34: 2010-2025 MHz
LTE Band 38: 2570-2620 MHz
LTE Band 40: 2300-2400 MHz
AP6353S module:
BT/BLE: 2402~2480 MHz
2.4G WLAN:
802.11b/g/n(20MHz): 2412~2472MHz
802.11n(40MHz):2422~2462MHz
5G WLAN:
802.11a/n/ac (20MHz): 5180~5700MHz
802.11n/ac(40MHz):5190~5670MHz
802.11ac(80MHz):5210~5610MHz
5.8G WLAN:
802.11a/n/ac (20MHz): 5745~5825MHz
802.11n /ac(40MHz):5755~5795MHz
802.11ac (80MHz):5775MHz
ESP32 module:
BT/BLE: 2402~2480 MHz
2.4G WLAN:
802.11b/g/n(20MHz): 2412~2472MHz
802.11n(40MHz):2422~2462MHz
BL262T-H8 module:
Lora: 863~870 MHz

Modulation Type:
WCDMA: QPSK; 16QAM; BPSK
LTE: QPSK; 16QAM
BT BR(1Mbps): GFSK
BT EDR(2Mbps): π/4-DQPSK
BT EDR(3Mbps): 8DPSK
BLE: GFSK
2.4G WLAN:
802.11b(DSSS):CCK,DQPSK,DBPSK
802.11g(OFDM):
BPSK,QPSK,16-QAM,64-QAM
802.11n(OFDM):
BPSK,QPSK,16-QAM,64-QAM
5G WLAN:
802.11a(OFDM):
BPSK,QPSK,16-QAM,64-QAM
802.11n(OFDM):
BPSK,QPSK,16-QAM,64-QAM
802.11ac(OFDM):
BPSK,QPSK,16-QAM,64-QAM,256-QAM
Lora: FSK

Antenna gain:
WCDMA2100: 2.9dBi
WCDMA900:2.02dBi

LTE Band 1: 2.1dBi
LTE Band 3: 1.4dBi
LTE Band 7: 2.6dBi
LTE Band 8: 2.02dBi
LTE Band 20: 1.94dBi
LTE Band 28: 1.94dBi
LTE Band 34: 2.68dBi
LTE Band 38: 1.87dBi
LTE Band 40: 2.93dBi
AP6353S module:
BT/BLE/2.4G WLAN: 3.99dBi
5G WLAN/5.8G WLAN:
ANT A: 4.01dBi, ANT B: 4.01dBi
ESP32 module:
BT/BLE/2.4G WLAN: 3.87dBi
BL262T-H8 module:
Lora: 3dBi

Antenna Designation: FPC

RF output Power:
WCDMA2100:24.71dBm
WCDMA900:24.12dBm
LTE Band 1: 24.41dBm
LTE Band 3: 24.88dBm
LTE Band 7: 24.45dBm
LTE Band 8: 24.09dBm
LTE Band 20: 23.76dBm
LTE Band 28: 24.1dBm
LTE Band 34: 23.32dBm
LTE Band 38: 24.47dBm
LTE Band 40: 23.55dBm
AP6353S module:
BT: 7.53dBm
BLE: 7.33dBm
2.4G WLAN: 19.09dBm
5G WLAN: 17.44dBm
5.8G WLAN: 13.95dBm
ESP32 module:
BT: 8.33dBm
BLE: 7.24dBm
2.4G WLAN:16.86dBm
BL262T-H8 module:
Lora: 9dBm

NOTIFIED BODY: MiCOM Labs Inc

- **Address**:

575 Boulder Court,
Pleasanton, California94566
USA
Identification Number: 2280

MANUFACTURER or **AUTHORISED REPRESENTATIVE**:

- **Address**

SHENZHEN PUDU TECHNOLOGY CO., LTD.
Room 501, Building A, Block 1, Phase 1, Shenzhen International Inno Valley, Dashi 1st Road, Nanshan District, Shenzhen, China

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.

Point of contact:

Le Cai/0755-26909874/Certification Director

(Name, telephone and fax number)

Shenzhen

2021.09.25

(Place, date of issue)

(Signature)

DECLARATION OF CONFORMITY

I hereby declare that the product

Description: FlashBot
Type or model name: FBBDR1
Brand name: PUDU

(Name of product, type or model, batch or serial number)

Hardware version number: V3

Software version number: V8.1.0.12

satisfies all the technical regulations applicable to the product within the scope of UK Radio Equipment Regulations (SI 2017/1206); UK Electrical Equipment (Safety) Regulations (SI 2016/1101); and UK Electromagnetic Compatibility Regulations (SI 2016/1091) and declare that the same application has not been lodged with any other UK Approved Body.

BS EN 62368-1:2014/A11:2017

BS EN 50663: 2017

ETSI EN 301 489-1 V2.2.3 (2019-11)

ETSI EN 301 489-3 V2.1.1 (2019-03)

ETSI EN 301 489-17 V3.2.4 (2020-09)

ETSI EN 301 489-19 V2.1.1 (2019-04)

Draft ETSI EN 301 489-52 V1.1.2 (2020-12)

BS EN 55032:2015/A11:2020

BS EN IEC 61000-3-2:2019

BS EN 61000-3-3:2013+A1:2019

BS EN 55035:2017/A11:2020

ETSI EN 301 908-1 V13.1.1 (2019-11)

ETSI EN 301 908-2 V13.1.1 (2020-06)

ETSI EN 301 908-13 V13.1.1 (2019-11)

ETSI EN 300 328 V2.2.2 (2019-07)

ETSI EN 301 893 V2.1.1 (2017-05)

ETSI EN 300 440 V2.2.1 (2018-07)

ETSI EN 300 220-1 V3.1.1 (2017-02)

ETSI EN 300 220-2 V3.2.1 (2018-06)

(Title(s) of regulations, standards, etc.)

All essential radio test suites have been carried out.

NOTIFIED BODY: MiCOM Labs Inc

- **Address**:

575 Boulder Court,
Pleasanton, California 94566
USA
Identification Number: AB 2280

MANUFACTURER or **AUTHORISED REPRESENTATIVE**:

- **Address**:

SHENZHEN PUDU TECHNOLOGY CO., LTD.
Room 501, Building A, Block 1, Phase 1, Shenzhen International Inno Valley, Dashi 1st Road,
Nanshan District, Shenzhen, China

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.

Point of contact:

Signature: Jiankuai Li **Date:** 2021.09.24

Name: Jiankuai Li

Title: PM

Company: SHENZHEN STS TEST SERVICES CO.,LTD.

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

IC Warning

This device complies with Industry Canada’s licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet appareil est conforme aux CNR exemptes de licence d'Industrie Canada . Son fonctionnement est soumis aux deux conditions suivantes :
(1) Ce dispositif ne peut causer d'interférences ; et
(2) Ce dispositif doit accepter toute interférence , y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

Ce matériel est complété par une exposition de rayonnements IC pour un environnement naturel. Ce matériel doit être installé et se faire avec une distance minimale de 20cm entre les radiateurs et les autresYour body shop.

Note: 5150~5250MHz is Indoor use only.