# ROS Navigation Robot Tank

## 1. Key Properties

Raspberry PI4B 2GB、4GB

720P HD USB Camera

LIDAR Sensor

9-Axis Gyroscope

3.5 inch OLED Touch Screen
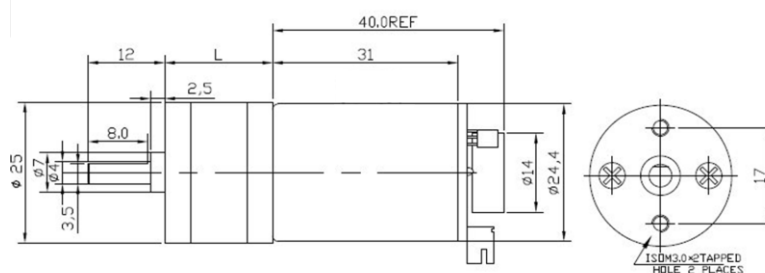
Input Voltage 12.6 V

## 2. Features

| | |
|---|---|
| **Crawler Driving** | Robot car used crawler driving, capable of rotating 360 degrees and high stability. |
| **WIFI wireless remote control** | The robot car will establish WiFi hotspot after power on. Mobile phones and tablets can be connected to WIFI and controlled through APP. |
| **Real-time video transmission** | Robot car transmits the real-time images taken through camera to APP and computer software through WiFi. |
| **LIDAR Sensor** | 360-degree scanning distance measurement, base on gmapping, hector/Karto algorithm map modeling, support keyboard and remote control. |
| **Camera visual line follow** | Robot car recognizes the black line arranged on the ground through the camera Image to implement the line follow function. |

## 3. Specifications

| Robot Car Body Specification | |
|---|---|
| Dimension | 280*242*300mm |
| Weight | 3000g |
| Material | Alloy Aluminum and Acrylic |
| Driving Mode | Crawler Driving |
| Remote Control | Android APP、PC Software |
| **Motherboard Specification** | |
| Model | Raspberry PI 4B |
| Memory | 2GB or 4GB LPDDR4 (depending on model) |
| Communication Interface | I2C, Serial Port (UART), SSH |
| Programming Language | Python / C++ |
| **Motor Specification** | |
| Dimensions | Length 12mm, radius 4mm |

| | |
|---|---|
| Weight | 100g |
| Working Voltage | 6~24V |
| Working Current | ≤80mA (no-loading) |
| Rated speed | 100rpm |
| No load speed | 130rpm |
| Locked-rotor current | ≤3.0mA |
| Locked-rotor torque | 6.0kg.cm |
| Reduction ratio | 1:45 |



| LIDAR Sensor | |
|---|---|
| Model | XR-Lidar S1 |
| Working Voltage | 4.75~5.25V |
| Working Current | 150~300mA |
| Scan Frequency | 9.5~10.5Hz |
| Voltage Ripple | ≤100mV |
| Noise | ≤65db |
| Working Temperature | 0~50ºC |
| Measuring Radius | 8m |
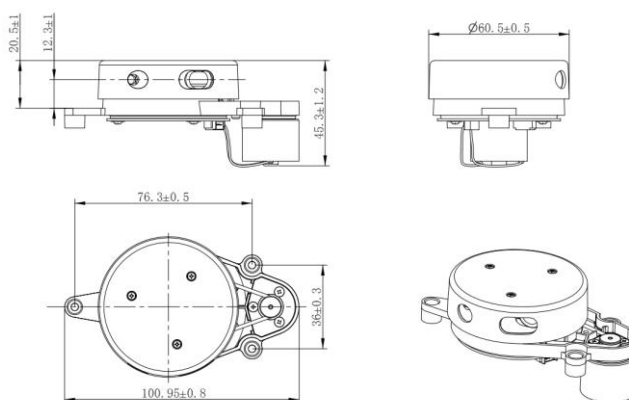


## 4. Package List

The robot car is shipped in an unassembled state. Please refer to the attached tutorial for the assembly method, The package list as follow:

| Accessories | Quantity |
|---|---|
| Raspberry Pi 4B Mother Board | 1 |
| Driver Board | 1 |
| Stainless Steel Chassis with Motor | 1 |
| Acrylic Car Body | 3 |
| 720P HD Camera | 1 |
| XR-Lidar S1 LIDAR | 1 |
| 3.5 inch OLED Touch Screen | 1 |
| 9-Axis Gyroscope | 1 |
| M3 Single-Head Copper Pillar | 8 |
| M3 Double-Headed Copper Pillar | 4 |
| M3 Screw | 15 |
| M3 Screw Nut | 15 |
| M2.5 Screw | 8 |
| M2.5 Screw Nut | 4 |
| M2.5 Nylon Column | 4 |
| Velcro | 2 |
| 16G SD Card | 1 |

*note: 1.The product does not contain lithium batteries.

2.The robot car is suitable for 12.6V lithium battery.

## 5. Product Document

Provide supporting training textbooks and courses, covering from getting started with Raspberry Pi to fully grasping IoT development and artificial intelligence technology. Teaching features include: Start with assembly, remote control operation, environment construction, basic courses and advanced development, etc., and support secondary development.