4-DOF Multifunction Robotic Arm for Desktopr

1. Key Properties

4 Degree of Freedom

350mm Working Radius

200g Playload

1080P HD USB Camera

Electric gripper

ROS Framework

Input Voltage 12V DC

2. Features

Lightweight design	Small size, light weight, portable and easy to install.
ROS Framework	Using the ROS framework, it is easy for secondary development.
Image recognition	Object sorting, Color recognition, Shape recognition, Face following
Teaching Function	The user manually pushes and pulls to move the robotic arm while recording the motion trajectory.
Voice Control	Built-in voice recognition module, use voice control switching function.
Plug-in Design	Quick release structure design, Quickly replace terminal devices for different application scenarios.

3. Specifications

Technical Specifications	
Weight	3 kg
Vertical Workspace	300 mm
Horizontal Workspace	300 mm
Working Voltage	12V DC
Voltage Display	0.4 inch red 7 Segment
Maximum Working Radius	350 mm
Playload	200 g

Robotic Arm Axis Specifications	
Axis-1	±180°
Axis-2	±120°
Axis-3	±130°
Axis-4	±180°
Gripper	0° ~ 165°

Hardware Structure Specifications	
Structure Type	Series
Number of Axes	4 (not including end device)
Controller	Industrial Computer
Body Shell Material	Aluminum Alloy
Installation Method	Desktop
Motor	Serial Digital Servo

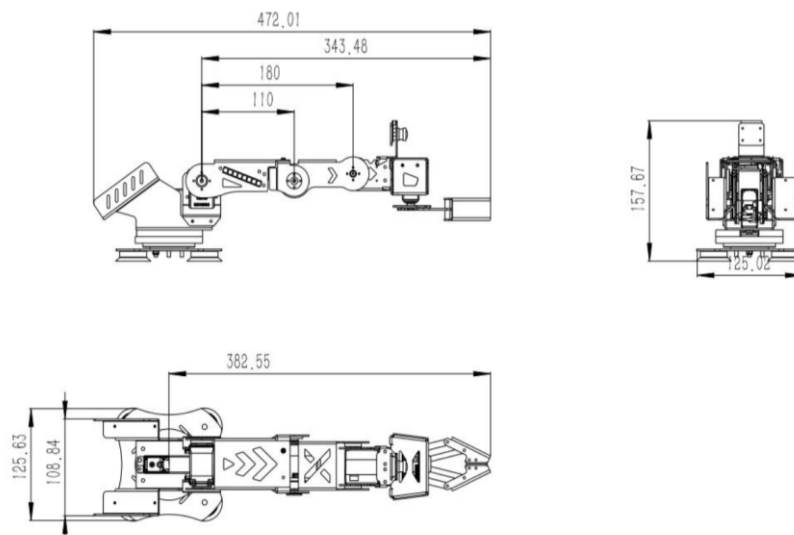| Industrial Computer Specifications	
CPU	I3 4020Y
Architecture	x86
RAM	4GB
ROM	60GB SSD
Working Voltage	12V DC
Display	HDMI
Dimension	110mm x 90mm x 35mm
System	Ubuntu 16.04 ROS Framework Support
Programming Language	C / C++ / Python
Communication Interface	USB(UART)、Ethernet (SSH)

4. Dimensions
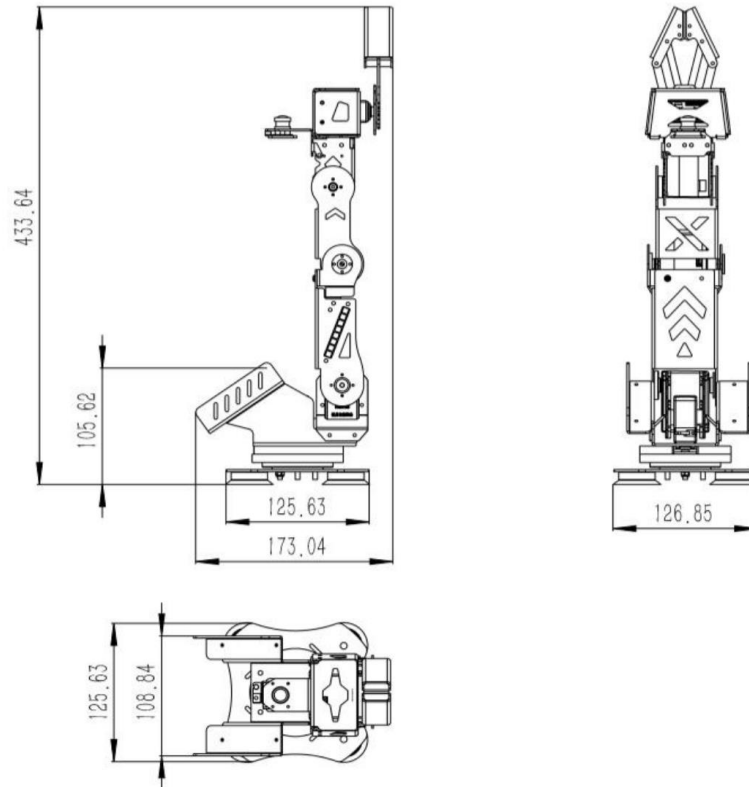

Figure 1 Horizontal Dimensions of Robotic Arm

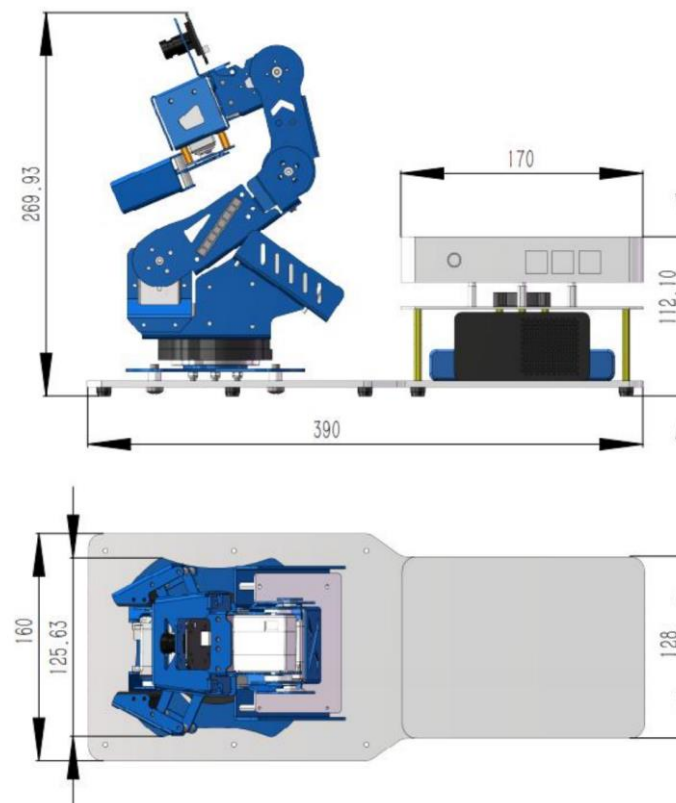Figure 2 Vertical Dimensions of Robotic Arm

Figure 3 Overall Dimensions

5. System Structure

The industrial computer equipped with Ubuntu 16.04 operating system and ROS framework. The system uses inverse kinematics to calculate control commands, and then sends to serial servo motor to drive the robotic arm.

The industrial computer can also get the image return from camera, use image data to recognition or calculate the target position.

The robotic arm is also equipped with a voice control module. User can coding the secondary development program integrated in the system, so that the corresponding function can be called through the voice module.