Elephant Robotics 大象机器人

大象奥创机械臂

ultraArm P340

多功能智能码垛机械臂
Multifunctional Intelligent Palletizing Robot Arm

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在使用本产品之前，请阅读本手册中所有说明及警告提示。

- 为避免火灾或电击危险，请勿将产品暴露在雨中或潮湿的地方。
- 请勿将产品放在火中或靠近火处。
- 请勿将本产品放置或使用在炎热潮湿的地方。
- 请勿暴力拆卸本产品。
- 请勿将产品暴露在过度的冲击下，如从高处跌落。
- 不要将产品暴露在超过60℃(140℃F)的高温下。

⚠ 开机必读

本册为 ultraArm 奥创机械臂产品画册

⚠ 关于本产品的操作使用及二次开发，请先在大象机器人官网阅读并下载相关指导说明：
　　1. Gitbook; 2. 用户手册; 3. 开发引导手册

下载链接：https://www.elephantrobotics.com/ultraarm-p340/cn

ultraArm P340

零基础入门级-多功能智能码垛机械臂

ultraArm P340是一款超小型桌面机械臂，全身采用经典金属结构设计，本体占用面积只有A4纸张的一半，灵活使用。搭载高性能步进电机，能够实现±0.1mm重复定位精度和高稳定性。可进行写字画画，激光雕刻，可自由搭配滑轨、传送带、智能小车、视觉等配件，根据不同需求完成不同实训项目，广泛应用到高等教育科研教学、职业应用教育等多个领域。

视觉教育套装

提供开源的AI算法，配套相关的教学应用场景，视觉抓取，滑轨识别，传送带识别多种套装，静态视觉，动态视觉的一站式体验快速上手。
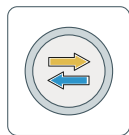
丰富的开发编程
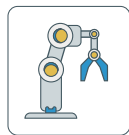
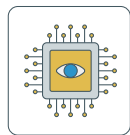可视化积木式编程工具myBlockly；Python 二次开发接口；开源的控制代码，深入学习机械臂控制。

OpenCV	Python编程	逆运动学	机器人控制原理	视觉识别	末端执行器使用

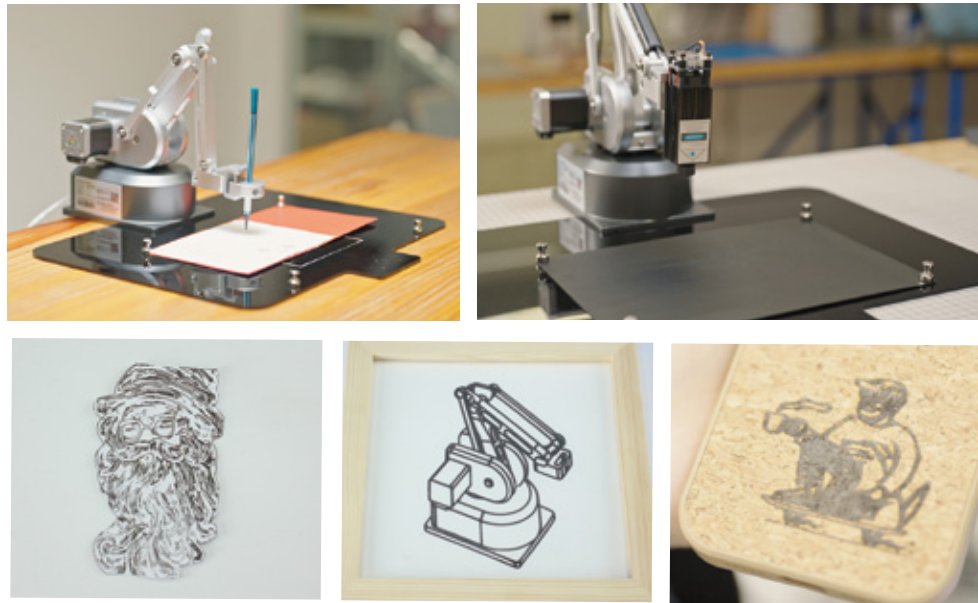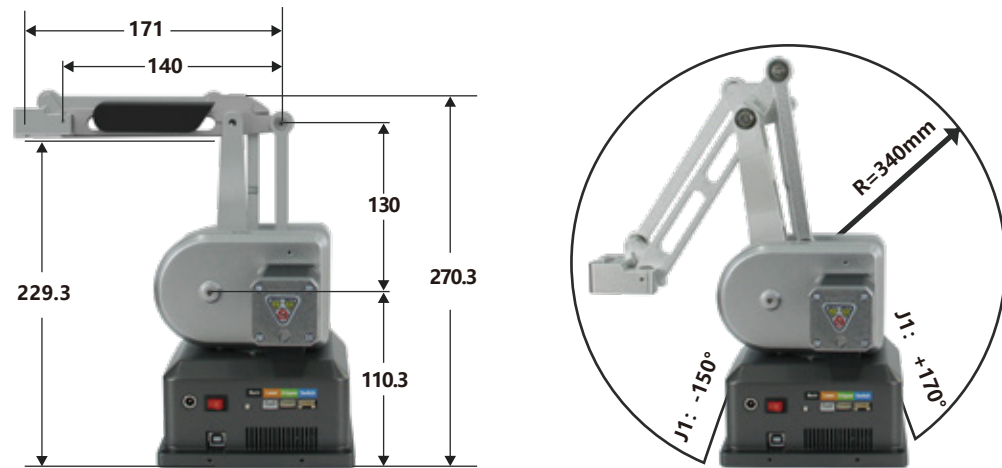## 高配置，性能强大

采用步进电机，实现准确控制，可以达到±0.1mm的重复定位精度。满足7 X 24小时长时间工作，让长时间的科创研究不在受限。全身金属骨架，金属光泽配合工业风格硬朗的外观。

兴趣DIY套装

一键轨迹生成可视化软件，配有工作平台，笔夹，激光雕刻，温馨时刻在线制作，DIY制作铭牌，手机壳，AI画图，跟随时尚潮流热点，享受创作快感。

ultraArm P340 大象奥创机械臂 尺寸与工作范围图

产品参数

名称	奥创机械臂
型号	ultraArm P340
自由度	3DOF / 4DOF
有效负载	650g
工作半径	340mm
重复定位精度	±0.1mm
重量	2.9kg
使用寿命	5000小时，支持7X24小时
输入电源	12V 5A
关节范围	J1 -150° ~ +170°
	J2 -20° ~ 90°
	J3 -5° ~ 75°
噪音	60 dB
最大末端速度	100mm/s

电源适配器	50-60Hz
底座接口	激光雕刻接口
	自适应夹爪接口
	吸泵接口
	烧录开关
TCP末端速度	100 mm/s
安装方式	桌面水平安装
动力模块	高性能步进电机
编程方式	Elephant Luban， 图形化编程myBlockly， Python，ROS2
工作温度	0°~45°
工作环境湿度	5%-80%

电气接口介绍

标签名	信号名	功能	备注
Burn	按键开关	烧录功能打开/关闭	烧录功能打开时，串口连接会重启开发板，如不需要重启请关闭烧录功能
Laser	PWM GND 12V	激光雕刻接口	PWM 控制激光雕刻功率大小
Gripper	DATA 8.4V GND	夹爪接口	DATA 控制夹爪/舵机数据
Switch	OUT1 OUT2 5V GND	吸泵接口	5V-OUT-PIN 输出：控制电磁阀和吸泵开关

ultraArm P340 奥创机械臂

快换吸泵

快换自适应夹爪

快换激光雕刻头

快换舵机

快换笔夹

快换乐高转接法兰

大象机器人面向机械臂扩展应用，打造"ultra-系列"产品线。相关配件的上新，请关注官方淘宝店铺。

店铺名称：大象机器人

⚠ Warning

BEFORE USING MYPALLETIZER READ ALL INSTRUCTIONS AND CAUTIONARY MARKINGS IN THIS MANUAL

1. Do not expose the product to rain or moisture to reduce fire or shock hazard.
2. Do not place the product in or near fire.
3. Do not leave the product in a car in hot or humid weather.
4. Do not disassemble, crush or pierce the product.
5. Do not expose the product to excessive shock such as dropping from a high place.
6. Do not expose the product to high temperatures above 60 °C (140 °F).

⚠ Attention

⚠ Regarding the operation and secondary development of ultraarm-p340, please read and download the related files before using it.
1、Gitbook　2、User Manual　3、Development Manual

Official Website：https://www.elephantrobotics.com/en/ultraarm-p340-en/

ultraArm P340

For Robot Starters - multifunctional desktop robot arm

ultraArm is a small desktop robotic arm. It is designed with classic metal structure and occupies only an area of A5 paper. It is equipped with high-performance stepper motor, and it owns ±0.1mm repeated positioning accuracy and high stability. UltraArm can achieve the precise writing and drawing, laser engraving, and can be freely matched with multiple accessories such as slide rail, conveyor belt, myAGV and cameras. It can complete different practical training projects according to different needs, and is widely used in many fields such as higher education, scientific research, vocational application education, etc.

Vision education kit

These kits compose of open source AI algorithm, support related teaching application scenarios, identifying and sorting objects, on slide rail or conveyor belt. There are a variety of sets with static vision or dynamic vision in a one-stop platform to help users get started quickly.

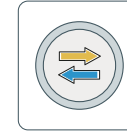## Multiple programming environments supporting

Drag-and-drop programming visualization software: myBlockly;Provides the interface for Python developing;Provides open-source code to help users deeply learn robotics.
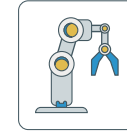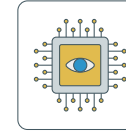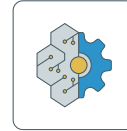

OpenCV   Python   Inverse kinematics   Principles of Robot Control   Visual recognition   End–effector use

Hardcore configuration

It is equipped with stepper motor, and it owns ±0.1mm repeated positioning accuracy;It supports 24/7 highly intensive operation;It is compact and though with classic metal structure.

DIY kit

This is a one-click track generation in visualization software with operation plate, pen clip, laser engraving head. Users will enjoy warm moments of online production, nameplate and phone case DIY production, AI drawing.
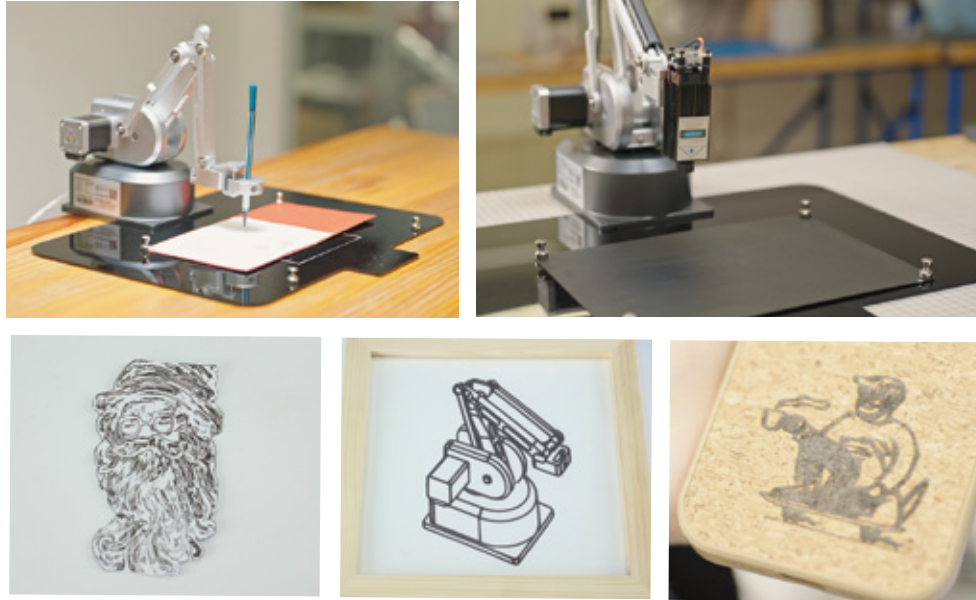
ultraArm P340 Size and working space

171

140

229.3

130

270.3

110.3

R=340mm

J1: +170°

J1: -150°

Parameter

Name	ultraArm P340
Degree of freedom	3DOF / 4DOF
Payload	650g
Working radius	340mm
Repeatability	±0.1mm
Weight	2.9kg
Working lifespan	5000h, support7X24h
Power input	12V 5A
Available angle of joints	J1 -150° ~ +170°
	J2 -20° ~ 90°
	J3 -5° ~ 75°
Noise	60 dB
Working speed	100mm/s

Adapters	100-240VAC 50-60Hz
Interfaces	Laser engraving interface
	Adaptive gripper interface
	Suction pump interface
	Burning switch
TCP terminal	100 mm/s
Installation mode	Desktop level
Power module	High performance stepper motor
Programming mode	Elephant Luban, Graphical programming myBlockly, Python, ROS2
Temperature	0°~45°
Ambient humidity	5%-80%

Introduction of interfaces

Title	Sign-Name	Function	Remark
Burn	Key Switch	Burning function is on/off	When the burning function is turned on, the serial port connection will restart the development board. If you do not need to restart, please turn off the burning function
Laser	PWM GND 12V	Laser engraving interface	PWM controls laser engraving power
Gripper	DATA 8.4V GND	Gripper interface	DATA control claw/servo data
Switch	OUT1 OUT2 5V GND	Suction pump interface	5V-OUT-PIN output: control solenoid valve and suction pump switch

ultraArm P340 Accessory

Suction pump

Adaptive gripper

Laser engraving head

Servo

Pen holder

Lego connectors

Elephant Robotics are targeted at robotic collaboration applications, making "ultra-series" product line. For new information about the accessories, Follow us on Shopify and Twitter.
Shopify: https://shop.elephantrobotics.com/
Twitter: @cobotMy

产 品 保 修 卡

用户信息 (必填)：

购买人 ＿＿＿＿＿＿＿＿＿＿ 订单号 ＿＿＿＿＿＿＿＿＿＿＿＿ 联系电话 ＿＿＿＿＿＿＿

地址 ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿ 物流签收日期 ＿＿＿＿＿＿＿

产品问题描述 (必填)：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

如需退换货，请事先联系客服确认退回相关信息。待客服确认后，填写此卡并将这一页随同产品一起寄回。
注：我司在法律允许范围内保留对本产品保修卡解释和修改的权利。

- 产品自签收起7日内未拆封可无理由退换，因产品退换所产生的费用及其他风险需由客户承担。
- 用户如需产品保修服务需提供相应的购买单据及产品保修卡作为保修凭证。
- 凡属于正常使用下由于产品本身质量问题引起的硬件故障，保修期内大象机器人给予免费维修。
- 保修起始日期为产品购买日或物流签收日。
- 维修更换的配件归大象机器人所有，必要时会收取适当的成本费用。

以下为详细的配件保修服务说明(如需以下产品售后服务，请事先联系客服沟通并确认相关信息)

保修政策	
≤1年	大象机器人提供一次免费的新部件，运费由客户承担。
>1年	用户需付费维修。

特别说明: 在交付产品的保修期内，本公司仅对正常使用机器人时发生的故障进行免费修理。

但在以下情况下，将对客户收取修理费用(即使在保修期内):

(1) 因不同于手册内容的错误使用以及使用不当而导致的损坏或故障

(2) 客户未经授权进行拆卸导致的故障

(3) 属于外壳等部件自然的消耗，磨损及老化

(4) 因调整不当或未经授权进行修理而导致的损坏

(5) 因地震、洪水等自然灾害导致的损坏

　　因此，请严格遵照本手册及相关手册的指示对机器人进行操作。

WARRANTY CARD

Customer Information (Required) :

Purchaser _____ Order No. _____ Phone_____

Address _____ Logistics Receipt Date _____

Product problem description(Required) :

_____

If you need to apply for warranty service, please contact our customer service to confirm the detailed information. After confirmation, please fill in the card and send it back together with the product and the attached invoice. **Note: Our company reserves the right to explain and modify the warranty card of this product within the scope of the law.**

- Return service is limited to goods not opened within 7 days after the receipt date of logistics of the products. The freight or other risks incurred in return shall be borne by the customer.
- Customers should provide the purchasing invoice and warranty card as the warranty certification when a warranty is being asked.
- Elephant Robotics will be responsible for the hardware faults of products caused by the normal using during the warranty period.
- The warranty period starts from the date of purchase or the receipt date of the logistics.
- The faulty parts from the products will be owned by Elephant Robotics, and the appropriate cost will be charged if necessary.

If you need to apply for warranty service, please contact our customer service first to confirm the detailed information.

Warranty policy	
≤1 year	Elephant Robotics offers free new components once, customs shall bear the freight.
>1 year	Customers need to buy it themselves.

During the warranty period of the delivered product, the company only repairs the malfunctions that occur during normal use of the robot for free. However, in the following cases, the customer will be charged for repairs (even during the warranty period):

• Damage or malfunction caused by incorrect use and improper use different from the contents of the manual.
• Failure caused by unauthorized disassembly by the customer.
• Damage caused by improper adjustment or unauthorized repairs.
• Damage caused by natural disasters such as earthquakes and floods.

Therefore, please strictly follow the instructions in this manual and related manual to operate the robot.