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RB-A630-2 Robot Arm

RAYBOT



01

Carbon Fiber Lightweight Structure — Maximum Weight Reduction Without Compromising Precision

High-strength carbon fiber square tubes replace traditional aluminum alloy, reducing structural weight by approximately 60%. Moving parts weigh only 2.25 kg, with a total weight of 4.6 kg. Despite a 630 mm arm reach,280°/s joint speed, a nd 2 kg sustained payload. Lightweight design and high precision combined for flexible deployment and rapid reconfig uration.

02

RK3588 Edge Computing + EtherCAT 4 kHz Real-Time Bus

Powered by an RK3588 octa-core processor with 6 TOPS NPU, delivering local inference capability for AI and vision models. EtherCAT industrial real-time bus enables microsecond-level multi-axis synchronization, with 4 kHz closed-loop control frequency ensuring ultra-smooth and precise motion. Supports Linux + Docker ecosystem, balancing real-time control with algorithm deployment.

03

Software-Hardware Co-Designed Modular Architecture — Significantly Improved Workflow Efficiency

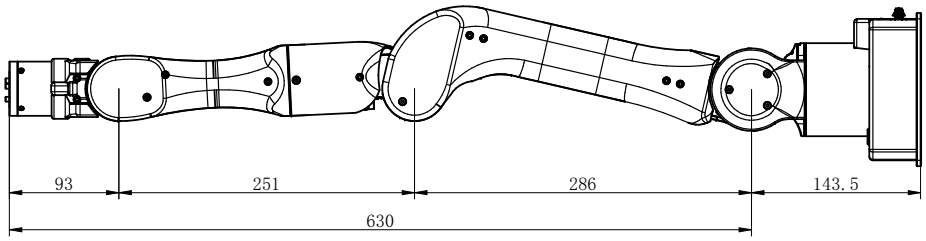
Hardware quick-disconnect structures enable tool-free assembly and disassembly, while software URDF modular composition allows on-demand model reconfiguration. Efficiency is significantly improved across configuration switching, component maintenance, and secondary development. Paired with a ROS 2 full-stack software architecture, integrating drag teaching, VR teleoperation, VLA data collection, and collision detection.

RB-A630-2 Robot Arm

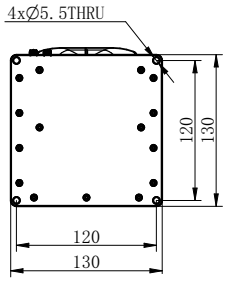
The RB-A630-2 is a new-generation 6-axis robotic arm designed for education, scientific research and desktop automation. Adopting a carbon fiber square tube structure, it achieves approximately 60% weight reduction compared with aluminum alloy alternatives. The moving components weigh 2.25 kg, with an overall machine weight of 4.6 kg and a reach of 630mm. It a maximum joint speed of 280°/s.

Equipped with the RK3588 (6 TOPS NPU) and EtherCAT real-time bus, the robot supports closed-loop control up to 4 kHz for smooth and precise motion. Built on ROS 2, it supports gravity-free teaching, VR teleoperation, VLA data collection, and millisecond-level collision detection.

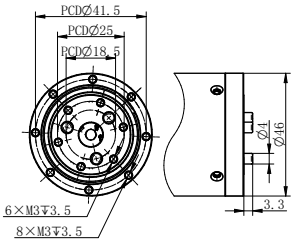
The robot features fully modular hardware and software architecture, enabling tool-free quick disassembly. Its URDF model supports flexible reconfiguration, greatly facilitating maintenance and secondary development. It is suitable for scientific research experiments, precision manipulation and desktop automation scenarios.

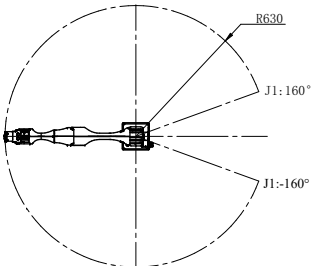


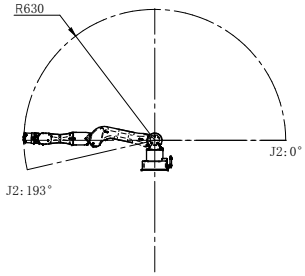
Overall Dimensions



Base Dimensions







Mechanical Parameters	Values
Arm Reach	630 mm
Weight	4.6kg
Rated Payload	2kg
J1	-160° ~ +160°
J2	0° ~ +193°
J3	0° ~ +180°
J4	-130° ~ +130°
J5	-81° ~ +81°
J6	-180° ~ +180°

Electrical Parameters	Values
Rated Voltage	48 V
Rated Power	751.8W
Communication	CAN/Ethercat

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