

ROKAE

Wheeled Dual-Arm Robot

Helios »

Helios is a wheeled dual-arm robot independently developed by ROKAE. Through deep integration of multi-modal fusion perception technology and artificial intelligence algorithms, combined with SLAM, it can autonomously navigate and make decisions in complex environments to accomplish challenging tasks.

With 43 degrees of freedom throughout its body, Helios possesses efficient mobility and flexible operation capabilities, making it suitable for various fields such as industrial production, commercial services, and educational research.

Total DoF

43

Arm Operation Accuracy

±0.1 mm

Operating Height

2.2 m(Vertical) **1.5 m**(Horizontal)

Multi-Modal Fusion Perception

Tactic of Pose + Vision + Force

Max. Payload per Arm

5 kg

Industrial-Grade Mobile Positioning Accuracy

10 mm



ROKAE Robotics

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Parameter Specifications

Parameter Category		Parameter	
Hardware Specifications	Height	Dimensions(Extended) : ≤ 680×640×1736mm	
		Dimensions(Folded) : ≤ 680×640×1142mm	
	Weight	Approx.190kg	
	Degrees of Freedom	Head: 2	
		Arms: 7 for each (left and right)	
		Torso: 4	
		Fingers: 10 for each hand	
Arm		Mobile Base: 3	
	Number of Joints	7	
	Reach	650mm	
	Single-Arm Payload	5 kg (excluding end - effector)	
	Precision	Repeatability ±0.1 mm	
Dexterous Hand (Optional)	Joint Performance	Lightweight compact force-controlled joints with built-in torque sensors, dual encoders, and EtherCAT communication	
	DoF per Hand	10 (6 active)	
	Number of Joints	12	
	Payload	3 kg	
	Weight	540 g	
	Grip Force	Thumb: 15 N; Others: 10 N	
Mobile Base	Thumb Movement Range	65°	
	Movement Method	Differential drive	
	Maximum Speed	1.5m/s	
	Navigation Method	SLAM navigation algorithm, dual laser radar	
Endurance Performance	Surmountable Obstacle Height	10mm	
	Battery Capacity	48V 30AH	
	Operating Time	6h	
	Charging Time	1.5h	
	Charging Method	Manual, automatic, battery quick swap	
Main Control Platform	Charger Input	220VAC/50-60Hz	
	Main Control	NX 8GB (standard configuration: 117 TOPS)	AGX Orin 64GB (Optional 275TOPS)
		NVIDIA Ampere architecture, equipped with 1024 NVIDIA CUDA® cores and 32 Tensor Core cores	NVIDIA Ampere architecture, equipped with 2048 NVIDIA CUDA® cores and 64 Tensor Core cores
		RAM: 8GB 128-bit LPDDR5 102.4GB/s	RAM: 64GB, Built-in storage: 64GB
		One gigabit network port	One gigabit network port
		DP/1 USB/4 TYPE-C/2 40-pin GPIO	DP/1 USB/4 TYPE-C/2 40-pin GPIO
Sensors	Head Vision	Orbbec Gemini 335L	
	Obstacle Avoidance Vision	Base 3D vision obstacle avoidance A4 (optional)	
	Interaction	Microphone, Speaker	
Secondary Development	Interfaces	Provides low-level joint and sensor interfaces as well as high-level motion interfaces	
		Compatible with ROS2 communication protocol, with uniformly encapsulated SDK interfaces	
Working Environment	Communication Interfaces	Ethernet, WIFI	
	Working Temperature	0~40°C	
	Working Humidity	5% ~ 95%	
	Environment Requirements	Dust-free, no corrosive gases, no static particles, no flammable or explosive materials	

Applications

Suitable for mobile operation scenarios in warehouses and workshops:
Transporting / Picking / Assembling / Inspection



For Chinese Version