

ATOM 01



Full-stack self-Developed Bionic Humanoid Robot

165-175cm
Height

200kg
Weight

1.25m/s
Mobile Speed

12.5kg
Maximum Single-Arm Payload

27 DOF
Total Degrees of Freedom

430N·M
Total Output Torque

High-Performance Controller

Driven by powerful computing, enabling ultimate real-time control. 170 TOPS ensures worry-free decision-making, with microsecond-level jitter elimination, achieving precise command-to-joint control.



Multimodal Perception Network

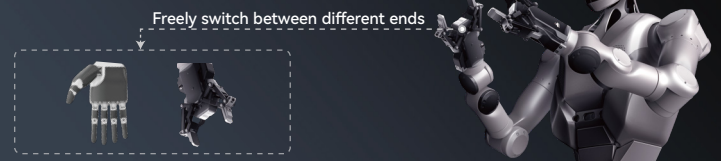
Equipped with a diverse matrix of sensors across the entire system, it dynamically perceives the operating environment in 360°, constructing a comprehensive safety awareness network.

Autonomous Navigation Intelligent Reach Across the Entire Domain

By integrating laser SLAM technology with vision, autonomous navigation remains undaunted in complex environments, endowing robots with millimeter-level precision in movement and intelligence.

Human-like Compliance Control Robotic Arm

Featuring a 7-axis symmetric design that replicates the agility of human movement, this robotic arm integrates lightweight joints for exceptional ease of maintenance and operation. It enables effortless handling of heavy loads and allows seamless switching between different end-effectors, including two-finger grippers and five-finger dexterous hands.



STEWART Original Parallel Mechanism Waist

Combining Rigidity and Flexibility, Effortless Heavy Lifting. The innovative parallel STEWART waist adopts a high-stiffness posture, balancing multi-degree-of-freedom flexibility with high load-bearing performance.



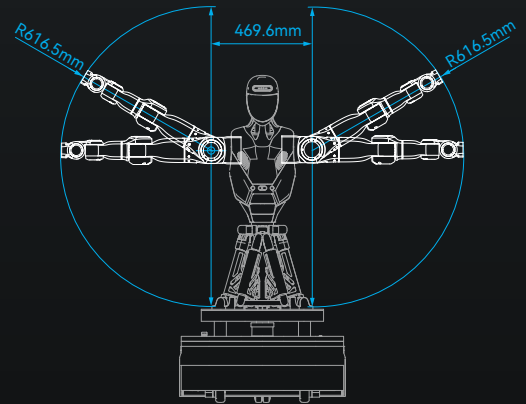
Omnidirectional Moving Chassis

Dual-steering wheel drive combined with universal follow-up movement enables true omnidirectional mobility with zero turning radius, allowing seamless navigation even in tight spaces.

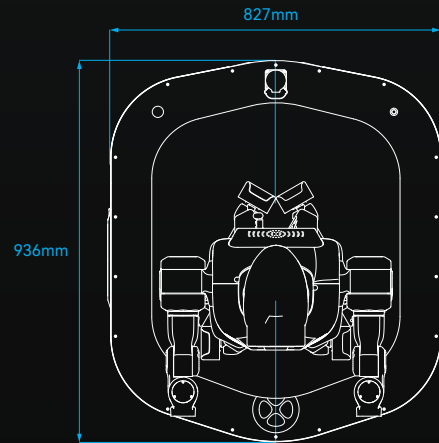


Product Parameters

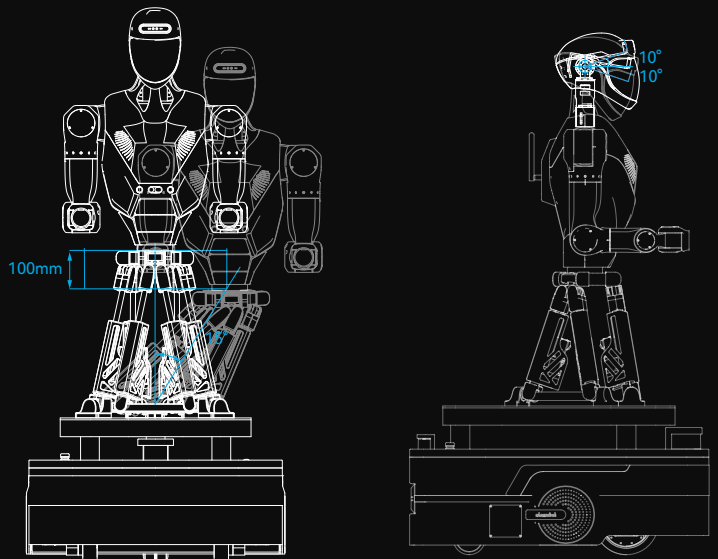
Structural Function	Attribute	Details
Mechanical Specification	Height	165-175cm
	Weight	200kg
	Total Degree of Freedom	27 DOF
	Total output Torque	430N · M
Locomotion Capability	Max Moving Speed	1.25m/s
Perception System	—	Depth Camera x1 Identification Camera x1 LiDAR x1 Obstacle Avoidance Radar x1 Gyroscope x1
Motion Control Algorithm	CPU Solution	8*Arm Cortex-A78AE cores
	GPU Solution	1792 NVIDIA CUDA cores
Enduranc	Rated voltage	48V
	Battery Life	4h
	Charging method	Wired / Automatic Charging
Interaction Method	Communication Methods	Voice Control / Wi-Fi 6 / Bluetooth
Bionic Design	Joint DOF Distribution	Arm DOF: 7 DOF x 2 Neck DOF: 2 DOF Waist DOF: 7 DOF Base DOF: 4 DOF
	Single Arm DOF (Excluding End Effector)	7 DOF
	Single Arm Max Payload	12.5kg
	Single Arm Reach	616.5mm
	Waist DOF	7 DOF
	Body Materials	7075, 40Cr, ABS
Perception System	Vision Solutions	Depth Camera + LiDAR
Secondary Development Support	—	Yes
Autonomous Decision-making	—	Yes



Arm reach



Footprint



Range of Motion of the Waist

Range of Motion of the Neck