ATOM-W
Wheeled Humanoid Robot

Designed for Real-world
Industrial Performance in AI Embodied Robotics

Industrial-Grade Precision, Human-Level Dexterity

- 7-DOF bionic dual arms achieving ±0.05 mm precision (payload-to-weight ratio > 0.5).
- Force control enables smooth, compliant manipulation for precision assembly.
- 32 upper-limb degrees of freedom deliver high-fidelity human motion mapping.

Autonomous & Stable Mobility for Dynamic Industrial Scenarios

- ±10 mm positioning repeatability ensures precise navigation.
- Passes through corridors as narrow as 500 mm.
- Designed to adapt to complex and diverse industrial environments.

All-Purpose AI Robot Advancing Toward Smarter Intelligence

- Exceptional on-device AI computing capability.
- Integrated large language model supporting industry knowledge graphs and customizable dialogue personas.
- VLA architecture enables end-to-end autonomous reasoning and operation.

Data Collection & Evolution to Lower Research Barriers

- Immersive VR data collection suite.
- Embodied data toolchain enabling continuous self-evolution.
- Companion App for data management and visualization.

Product Specifications

Model	Specification

ATOM-W

Robot Body

Product Dimensions	Approx. 1785mm(H) x 500mm(W) x 500mm(D)
Total DOF (excluding dexterous hand)	20
Head DOF	2
Arm DOF	7 x 2
Waist DOF	4

Robot Arm Operational Capability

Single Arm Rated Payload	3.5Kg
Arm Span (excluding dexterous hand/gripper)	600mm
Repeatability	±0.05mm
Dexterous Hand (Optional)	6 DOF

Perception Capability

Head Vision	Depth Camera *1, High-Definition Binocular Camera *1
Hand Vision (Optional)	Depth Camera * 2
Waist Vision (Optional)	Depth Camera * 2
Hand Force Sensing (Optional)	End Effector Six-Axis Force/Torque Sensor
Audio Equipment	360° Pickup Microphone * 1 + Calibrated Speaker * 2

Chassis Parameters

Battery	45Ah
Chassis Speed	1.5m/s
Navigation Method	LiDAR Navigation
Vertical Positioning Accuracy	±10mm (Center-to-Point Accuracy)

Data Collection & Training

Off-board Computing Module	Intel i9 (24 Cores, 32 Threads) + High-performance Discrete Graphics Card (FP32 GPU Compute Power: 41.15 TFLOPS)
Data Collection Method (Optional)	Embodied Data Toolchain and Immersive VR Data Collection Kit Support
Pre-installed Model (Optional)	Embodied Manipulation Model VLA
Secondary Development	Supporting SDK for Secondary Development

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