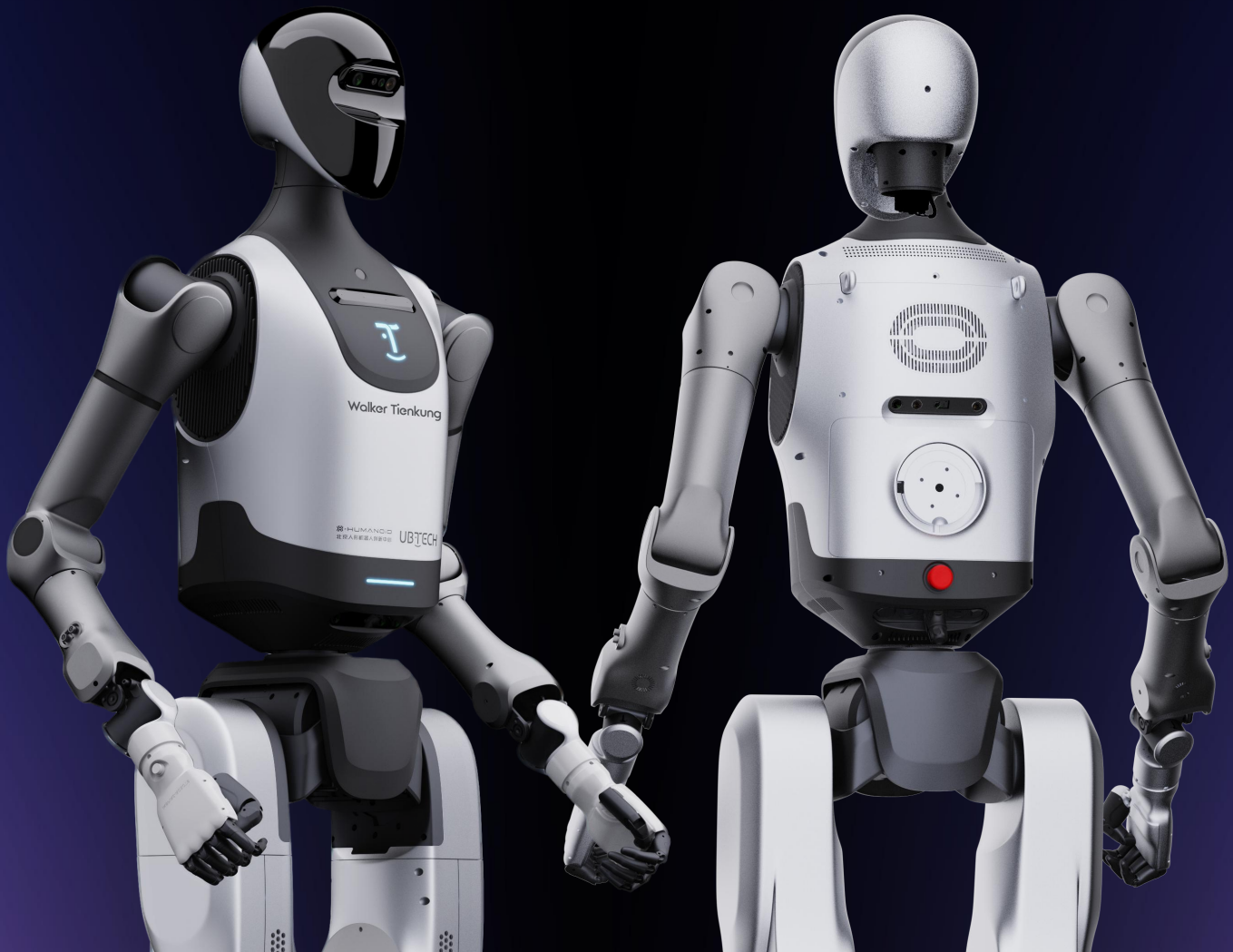
UBTECH EDUCATION

Walker Tienkung

Full-Size Humanoid Robot for Educational Research & Secondary Development

Empower tech youth to innovate in humanoid robots, achieve original tech breakthroughs, and foster embodied intelligence talents



X-HUMANOID UBTECH

Product Positioning

A full-size, high-performance, research-grade humanoid robot for universities, research institutions, and developers. Open-source architecture supports scientific research and scenario-based innovation, driving technological advancement and practical applications.

Core Advantages

Full-Size & High-Performance Humanoid Robot

- Anthropomorphic Design: 172cm height, 42 DOF configuration, supports 10km/h sprinting and complex movements
- Lightweight Structure: Proprietary integrated joint modules, 300Nm peak torque, aerospace-grade aluminum + titanium alloy construction
- Dual-Battery Thermal Management: 30Ah+3Ah hot-swappable batteries, full-body air duct cooling
- Work smarter, not hotter: 3-hour continuous motion, 8-hour non-stop performance

Modular Design with High scalability

- Body Expansion: 7-DOF collaborative arms, 6-DOF dexterous hands, 3-DOF head module
- Perception & Computing: Depth cameras, AI voice kit, six-axis force sensors, 550 TOPS Orin computing board
- Application Scenarios: University Research, Commercial services, complex terrain navigation, industrial logistics, healthcare, home assistance, power inspection

Open-Source Ecosystem

- Open Interfaces: Motor control, sensor data, motion control APIs with ROS2 compatibility
- Development Suite: High-precision URDF models, open training framework, access to “KaiWu" platform (robot trajectory data, meta-skills, open OS)
- Comprehensive Resources: Mature development guides + sample code for embodied intelligence control and precision motion research

University-Industry-Research Collaboration

- UBTECH Humanoid Research Fund: A cross-industry initiative propelling robotics innovation through standardization, grants, and global competitions, backing academic R&D in humanoid technologies.

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Product Parameters for Walker Tienkung Voice and Vision Version

It has 21 degrees of freedom, is equipped with language and vision modules, and has a computing power of 275 Tops. In addition to the basic version functions, it can be used for interactive research scenarios such as voice interaction and access to large language/vision models.

Height	172cm
Net Weight	≈61kg
Total DOF	21
Head/Neck DOF	/
Per Arm DOF	4, Shoulder*3, Elbow*1
Per Leg DOF	6, Hip*3, Knee*1, Ankle*2
Depth Camera	Depth Camera ×3
High-precision IMU	✔
Six-axis Force Sensor	/
AI Voice Kit	Linear MIC*4, Speaker*1, Sound Card*1, 720P Monocular Camera*1
5-finger Dexterous Hand	/
Battery Capacity	30Ah+3Ah
Runtime	6h (Standing), 3h (Working)
Onboard Computer	CPU Intel core i7; Main Frequency up to 4.7GHz; Memory: 16GB; SSD: 256GB
AI Compute Board	NVIDIA Jetson AGX Orin ×1 (275 TOPS)
Openness	Whole-body Motor Control and Sensor Interface Open
Middleware	ROS2
Internal Comms	Full-body CAN/EtherCAT Bus Communication, Maximum Control Rate of 1000Hz
External Comms	WiFi, Bluetooth 5.2, Ethernet
Heat Dissipation Capacity	Continuous Working Without Overheating
Support Capacity	Dancing; Waving; Walking; Conversation

Note: Specifications subject to change. Final interpretation reserved by manufacturer.

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Product Parameters for Walker Tienkung Embodied Intelligence Version

It has 42 DOF, is equipped with a five-finger dexterous hand, and has a high computing power of 550 Tops. In addition to the basic functions, it can be used for interactive research scenarios such as voice interaction and language/visual large model access. It can also be used for embodied operation research scenarios such as hand-eye coordination and dexterous operation.

Height	172cm
Net Weight	≈73kg
Total DOF	42
Head/Neck DOF	3-DOF Head Module (Standard)
Per Arm DOF	7, Shoulder*3, Elbow*1, Wrist*3
Per Leg DOF	6, Hip*3, Knee*1, Ankle*2
Depth Camera	Depth Camera ×3
High-precision IMU	✔
Six-axis Force Sensor	2 (Standard)
AI Voice Kit	Linear MIC*4, Speaker*1, Sound Card*1, 720P Monocular Camera*1
5-finger Dexterous Hand	6-DOF Dexterous Hand ×2 (Standard)
Battery Capacity	30Ah+3Ah
Runtime	6h (Standing), 3h (Working)
Onboard Computer	CPU Intel core i7; Main Frequency up to 4.7GHz; Memory: 16GB; SSD: 256GB
AI Compute Board	NVIDIA Jetson AGX Orin ×2 (550 TOPS)
Openness	Whole-body Motor Control and Sensor Interface Open
Middleware	ROS2
Internal Comms	Full-body CAN/EtherCAT Bus Communication, Maximum Control Rate of 1000Hz
External Comms	WiFi, Bluetooth 5.2, Ethernet
Heat Dissipation Capacity	Continuous Working Without Overheating
Support Capacity	Dancing; Waving; Walking; Conversation; Dexterous Hand

Note: Specifications subject to change. Final interpretation reserved by manufacturer.

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Systematic Open Source and Open Resource Support

Application Interfaces	Voice recognition | Semantic recognition | Vector walking | Full-body movement | Arm trajectory planning | ···
Hardware Interfaces	Joint motor | IMU | Depth camera | Dexterous hand control | Six-axis force sensor | ···
Support	High-precision URDF | Open Source Dataset | SDK | ...

*Open-source and open resources are updated irregularly, and the randomly provided SDK documentation shall prevail.

Applicable Scenarios

Scientific Research	Motion control algorithm research, Language/visual large model interaction research, embodied operation research, etc.
Talents Cultivation	Robot engineering practice, Digital acquisition job skills training and teacher training
Innovation Scenario	Explorations in commercial, terrain, logistics, medical, home service, power inspection scenarios, etc.

Standard Configurations

- Humanoid robot body ×1
- Power adapter ×1
- Wireless controller ×1
- User manual ×1
- Development support: SDK; URDF

Basic Accessories Package

Flight Case | **Safety Rope** | **Display Rack**

Basic Accessories Package Applicable Scenarios

Basic accessory pack can be used for equipment storage, transportation, and daily use

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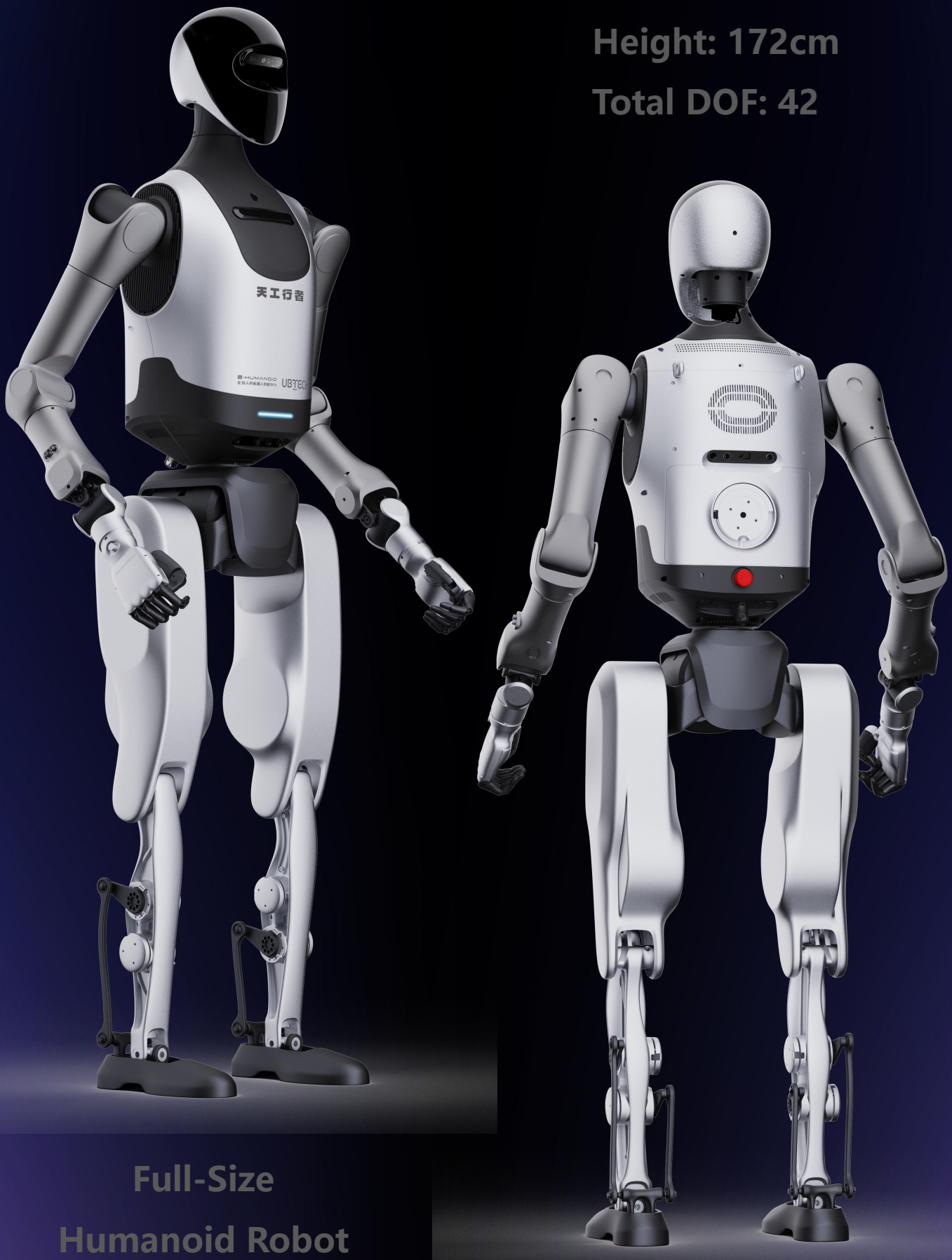
Height: 172cm

Total DOF: 42



Full-Size

Humanoid Robot

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Walker Tienkung

Start your research journey of embodied intelligence and create the future together!

Follow us for more information

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