Product Specifications & Functions

Items	Specifications
Dimensions (Standing)	86.3 cm × 47 cm × 48 cm
Dimensions (Folded)	73.4 cm × 47 cm × 24.4 cm
Degrees of Freedom (DOF)	18
Weight	Approx. 20 kg (net), approx. 30 kg (with packaging)
Max Walking Speed	1.8 m/s
Max Obstacle Height	20 cm
Max Slope Adaptability	40°
Payload Capacity	Rated: 10 kg, Max: 15 kg
Joint Range of Motion	Front/Mid Hip: −60° to 180°
	Rear Hip: −60° to 239°
	Lower Leg: −30° to −160°
	Body Tilt: ±38°
Battery Capacity	504wh
Battery Life	2.5 hours
Motor Peak Torque	33 Nm (knee joints)
Noise Level	Operating noise ≤ 55 dB
	*Test environment: indoor carpeted floor; decibel meter placed approximately 1 meter from the robot.
Control Platform Architecture	X86_64 architecture
	CPU: Intel Core i7/i5, 6 cores and 16 threads
Compute Platform	GPU performance: 40 TOPS
Speaker	Supported
LiDAR	Livox Mid360
Depth Camera (RGB-D)	Intel RealSense D435
External Expansion	Supports the integration of collaborative robotic arms (*available in future versions)
	Long-range remote control and image transmission (*available in future versions)
	Wireless auto-charging (*available in future versions)

SDK for Secondary Development

Item	Description
Operating System	Ubuntu 22.04, pre-installed with ROS2 Humble
Control Interface Types	ROS2, low-level and high-level SDKs (Python/C++)
Data Interfaces	Real-time sensor data, motion status feedback, IMU, motor joint data, etc.
Custom Algorithm Access	Supports integration of custom modules for motion control, terrain recognition, path planning, etc.
Third-party Hardware Support	Compatible with external LiDAR, depth cameras, voice modules, edge computing boxes, collaborative arms, etc.
Documentation & Tools	Includes detailed development docs, simulation environments (ROS2, MuJoCo), debugging tools, and interface examples

*Product color, model specifications, and technical parameters are subject to change without prior notice. Please refer to the actual product.

*This product is intended for civilian, commercial, and research/educational use only. Please ensure compliance with local laws and regulations during use.

www.dobot-robots.com

sales@dobot-robots.com

www.linkedin.com/company/dobotrobotics/

www.youtube.com/@DobotRobotics

China | Germany | USA | Japan | Thailand | Malaysia

D20250721

DOBOT Hexplorer Six-legged Bionic Robot

Ultra-Stability | Ultra-Low Noise
High Payload Capability | Multi-Terrain Adaptability

DOBOT Hexplorer
Six-legged Bionic Robot

DOBOT Hexplorer is featured with superior stability, quiet operation, heavy-payload capacity, and adaptability to complex terrain. With modular expansion and multi-scenario task support, it's ideal for education, scientific research, industrial inspection, and intelligent service applications.

Key Features

Bionic Six-legged Design for Enhanced Stability

With its biologically inspired six-legged design, DOBOT Hexplorer uses a stable tripod gait that keeps three legs grounded at all times. Dynamic center-of-gravity control and anti-disturbance algorithms minimize posture fluctuations and enable autonomous self-recovery in complex environments. This ensures excellent stability, anti-tip performance, and shock resistance—ideal for slippery, uneven, or narrow-ground scenarios.

High Payload and Modular Expansion

DOBOT Hexplorer features a lightweight, high-strength frame and high-torque motors, supporting up to 10 kg payload and pulling loads five times its own weight. Its modular design enables easy integration with robotic arms, sensors, and instruments—ideal for mobile tasks in research, inspection, and field operations.

*Actual payload may vary based on test conditions.

Quiet and Human-Friendly Operation

With a low-impact gait and noise-optimized motors, DOBOT Hexplorer moves smoothly and quietly, reaching noise levels as low as 50 dB. It's designed for quiet environments where humans and robots work side by side.

*Test environment: thin carpeted floor.
*Test distance: sound level meter positioned approximately 1 meter from the product.

Smart Sensing and Terrain Adaptability

Powered by AI-driven control, DOBOT Hexplorer combines LiDAR, depth cameras, IMUs, and proprioceptive sensing for real-time terrain sensing and adaptive gait adjustment. It handles slopes and uneven surfaces with speed and agility.

Application Scenarios

Scientific Research & Education

DOBOT Hexplorer serves as a multidisciplinary research platform that integrates mechanical design, AI, and sensor technologies. It supports robotics development and testing, interdisciplinary research, and early-stage exploration of real-world applications across industries.

Guided Tours & Interactive Services

DOBOT Hexplorer can be deployed in museums, science centers, scenic attractions, and other public venues to provide voice-guided tours, route planning, and site introductions. With customizable movements and performance routines, it enhances visitor engagement and entertainment value.

Security Patrol & Inspection

Equipped with various inspection modules, DOBOT Hexplorer is capable of handling repetitive patrol tasks in environments such as airports, railway stations, industrial parks, office buildings, residential areas, shopping malls, substations, and underground utility tunnels—reducing the need for human presence in routine monitoring.

Exploration & Rescue Operations

Thanks to its compact design and terrain adaptability, DOBOT Hexplorer can assist scientists and first responders in field exploration, reconnaissance, disaster search and rescue, and fire emergency missions—performing tasks in areas that are dangerous or inaccessible to humans.

Standard Capabilities

Walking | Slope Climbing | Stair Climbing | Obstacle Crossing
Obstacle Avoidance | Waist Rotation | Crouching | More...

Adaptable Terrains

Grassland | Sand | Wet Surfaces | Flat Ground
Gravel | More...

*Actual performance subject to field testing.

Item	Remarks
DOBOT Hexplorer Six-legged Bionic Robot	Standard configuration includes depth camera, LiDAR, built-in battery, adapter, and wireless remote controller.
Remote Operation & Image Transmission Kit	Optional (To be released later)
Wireless Auto-Charging Kit	Optional (To be released later)
Collaborative Arm Integration Kit	Optional (To be released later)