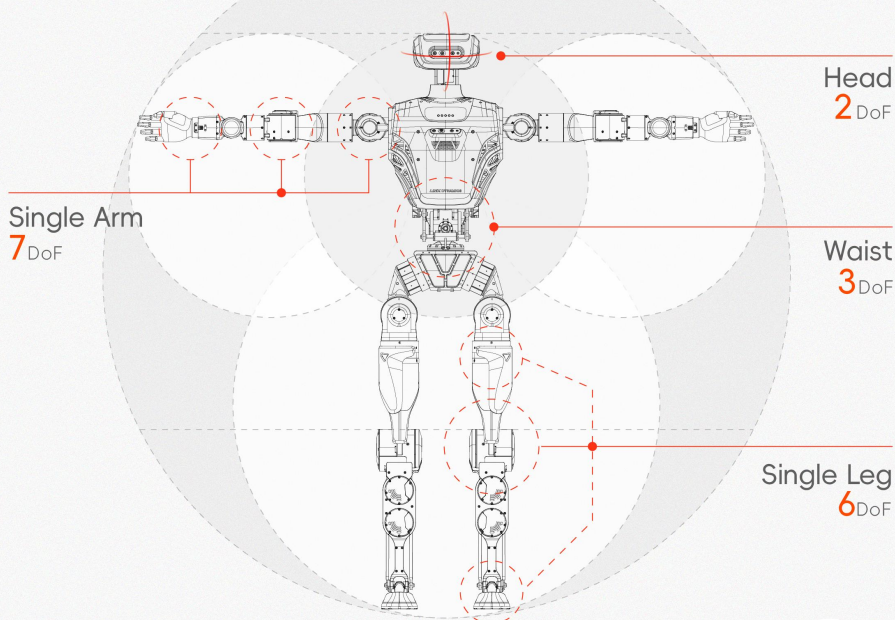LIMX DYNAMICS

LIMX Oli

Full-Size General-Purpose Humanoid Robot

CROSS THE LIMITS WITH OLI

Full-Size. Full-DoF.

As a full-size humanoid robot, LimX Oli stands 165cm tall and boasts impressive 31 degrees of freedom (DoF), combined with outstanding motion performance, Translating any motion you imagine into smooth, human-like movement.

Head
2 DoF

Single Arm
7 DoF

Waist
3 DoF

Single Leg
6 DoF

LIMXOli

Full-Size Human-sized

Height:
165cm
Weight:
55kg

End-effectors

Multiple Options Available

Modular Design

Fast Disassembly & Assembly

Multi-Sensor Fusion

6-Axis IMU
Head-Mounted Depth Camera
Chest-Mounted Depth Camera
Abundant External Interfaces

Agile Motion Redefined

Body Degrees of Freedom (DoF):
31 (expandable)

Innovator's Accelerator

| Modular SDK | Direct-Access Low-Level Interfaces |
| Intuitive High-Level Interfaces | Full Python Development Support |

Comprehensive Perception. Boundless Exploration.

Equipped with Self-Developed IMU and depth cameras, plus extensive electrical interfaces for seamless integration of external sensors like LiDAR and additional cameras, enabling comprehensive perception capabilities for complex environment motion control and diverse application scenarios.

Self-Developed IMU	IMU
Head-Mounted Depth Camera	Intel® RealSense™ D435i
Chest-Mounted Depth Camera	Intel® RealSense™ D435i

Ethernet Port	USB Ports	Power Interfaces
1,000Mbps RJ45	3.0/3.2	24V 5A 12V 5A

LIMX DYNAMICS

Lowering the Barrier to Reinforcement Learning, Advancing the Embodied Intelligence Revolution.

Python support

Modular SDK

High-Level & Low-Level Interfaces

Motion Libraries supporting OTA Update

Zero gap URDF for Sim2Real

Offering Comprehensive User Manuals, Developer Documentation, and Case Studies

Support Major Simulation Platforms: NVIDIA Isaac Sim, MuJoCo, Gazebo, etc.

Learn More https://github.com/limxdynamics
Support for Innovators,Developers,System Integrators with Continuous Updates

Product Specifications

- Not available, o Optional, ⊘ Standard Version

Model	Oli Lite	Oli EDU	Oli Super
Height	165cm/ 5'5"	165cm/ 5'5"	175cm/ 5'9"
Shoulder Width	55cm / 21.7in	55cm / 21.7in	60cm / 23.6in
Arm Length	70cm / 27.6in	70cm / 27.6in	80cm / 31.5in
Weight (Battery Included)	≤55kg / 121.3lbs	≤55kg / 121.3lbs	≤60kg / 132.3lbs
Maximum Load Capacity(Single Arm)[1]	3kg / 6.6lbs	3kg / 6.6lbs	5kg / 11.0 lbs
Maximum Moving Speed	5km/h	5km/h	5km/h
Maximum Joint Torque[2]	150N·m	150N·m	250N·m
DOF (Total)	31	33	43
Single Leg DOF	6	6	6
Single Arm DOF	7	7	7
Waist DoF	3	3	3
Neck DoF	2	2	2
Humanoid Hand	⊘	⊘	⊘
2-Finger Gripper (1 DOF)	-	⊘	⊘
5-Finger Hand (6 DOF)	-	o	⊘
Self-Developed 2-Finger Gripper (1 DOF)	-	o	o
Self-Developed 3-Finger Gripper (4 DOF)	-	o	o
Remote Controller	⊘	⊘	⊘
Emergency Stop (Handheld)	-	o	⊘
Thermal Management	Air-Cooled Main Control Area	Optimized Air-Cooled Main Control Area	Enhanced Air-Cooled Main Control Area
Communication Interfaces	WiFi 6	WiFi 6	WiFi 6
	BLE 5.4	BLE 5.4	BLE 5.4
	-	USB3.0/3.2 x 1 (USB Hub Supported)	USB3.0/3.2 x 1 (USB Hub Supported)
	-	Gigabit Ethernet (RJ45) x 1	Gigabit Ethernet (RJ45) x 2
	-	-	Type-C x 1 (USB Hub Supported)
	-	-	5G
Power Supply Interfaces	-	24V 5A*2	24V 5A*4
		12V 5A*2	12V 5A*4

Model	Oli Lite	Oli EDU	Oli Super
Slide-Out Battery Module	-	⊘	⊘ (x2)
Perception Sensors	6-axis self-developed IMU	6-axis self-developed IMU	9-axis self-developed IMU
	-	Head Depth Camera	Head Depth Camera
	-	Chest Depth Camera	Chest Depth Camera
	-	-	Wrist Depth Camera Mount
	-	-	Hip Depth Camera
	-	-	LiDAR
Battery Capacity	9,500mAh	9,500mAh	9,500mAh
Charger	58.8V 10A	58.8V 10A	58.8V 10A
Computing Configuration (SoC/RAM/Storage)	Motion Control RK3588/8G/64G	Motion Control RK3588/8G/64G	Motion Control RK3588/16G/256G
	-	Perception Orin NX (100TOPS)/16G/1T	Perception Orin NX (100TOPS)/16G/2T
Computing Backpack[3]	-	-	o
Battery Life[4]	about 2h	about 1.5h	about 1.5h
Voice Interaction Module	-	⊘	⊘
LED Indicators	⊘	⊘	⊘
System Status Monitoring	⊘	⊘	⊘
Basic Motion Library[5]	⊘	⊘	⊘
Motion Library Expansion Service	o	⊘	⊘
Development Support	-	⊘	⊘
Remote Control API	-	⊘	⊘
Sensor API	-	Visual Perception Data	Visual Perception Data
	-	IMU Data	IMU Data
	-	-	LiDAR Data
Low-Level Motion Control API[6]	-	⊘	⊘
High-Level Motion Control API[7]	-	⊘	⊘
OTA Updates	⊘	⊘	⊘
Studio Package (Optional)[8]	-	o	⊘
Warranty	12 Months	12 Months	12 Months

[1] Arm's maximum load varies with extension posture. Data may vary under different postures. Please refer to the actual performance.

[2] The maximum torque of each motor varies. This value represents the maximum torque of the highest torque motor.

[3] The computing backpack configuration includes: AGX Orin chip / 64GB RAM / 275 TOPS computing power.

[4] The data above is measured in the LimX Dynamics lab. Actual data may vary due to factors such as environment, usage, device status, and software version. Please refer to the actual performance.

[5] Action libraries included: Standing, humanoid walking, waving, bowing, punching, modern dance, ethnic dance.

[6] Supports joint control and end-effector control.

[7] Supports humanoid walking, mobile operation, stationary operation, and remote operation.

[8] Supports hardware status management, voice configuration management, data collection management, motion choreography management, and one-click simulation verification.

Contact Us

Products are continuously iterated and optimized, and appearance or configuration may change. Please consult with the sales team before purchasing.

The data shown above may vary based on environmental conditions, usage, device status, and software version. Please refer to the actual performance.

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