

AGIBOT X2

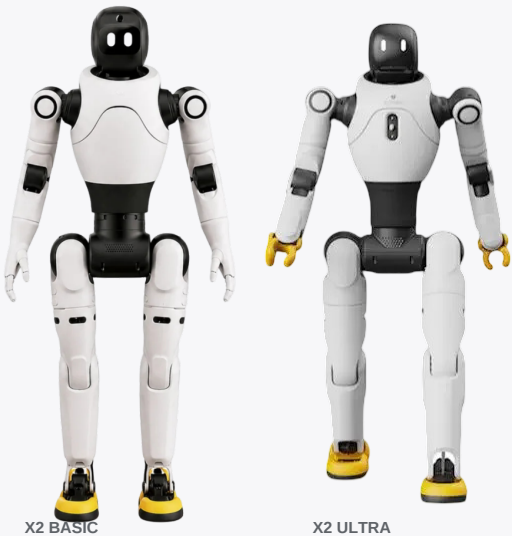
X2 Basic & X2 Ultra

Humanoid platform for interaction, autonomous motion, research and development

131 cm height

35 / 39 kg

25 / 30 active DoF



Product overview

The AGIBOT X2 is a compact humanoid robot combining bipedal locomotion, multimodal interaction and autonomous navigation. X2 Basic provides the main functions released by AGIBOT. X2 Ultra adds more degrees of freedom, extended sensors, higher-performance computing hardware and interfaces for research and development.

Performance data

PEAK TORQUE	120 Nm
WALKING BASIC	up to 1.8 m/s; typical ≤ 0.8 m/s
ARM REACH	558 mm without end effector
PAYLOAD	up to 3 kg*
TEMPERATURE	-10 °C to 40 °C

* In specific postures; ≤ 1 kg across the full motion range, excluding the end effector.

Energy & operation

BATTERY BASIC	approx. 500 Wh
RUNTIME BASIC	approx. 2 h at 0.5 m/s
CHARGING BASIC	≤ 1.5 hours
POWER SUPPLY	direct charging, swappable battery
AUTO DOCKING	Ultra: optional charging dock

Typical applications

INTERACTION

Reception, visitor information and dialogue-based communication

RESEARCH

Human-robot interaction, embodied AI and motion research

ENTERTAINMENT

Shows, dance routines and coordinated full-body motion

DEVELOPMENT

Python, C++ and ROS2 projects with X2 Ultra

Technical data & variants

X2 BASIC

Standard functions for interaction, navigation and motion. No secondary development at platform level.

25 DoF · no LiDAR · no RGB-D

X2 ULTRA

Extended platform for research, development and autonomous applications.

30 DoF · LiDAR · RGB-D · Orin NX

Mechanics

X2 BASIC

Dimensions	1,310 × 460 × 210 mm
Weight	approx. 35 kg
Degrees of freedom	25 active
Neck	0 DoF
Arms	2 × 5 DoF
Waist	3 DoF
Legs	2 × 6 DoF
Arm reach	558 mm without end effector
Joint torque	120 Nm peak
Temperature	-10 °C to 40 °C

X2 ULTRA

Dimensions	1,310 × 460 × 210 mm
Weight	approx. 39 kg
Degrees of freedom	30 active
Neck	1 DoF
Arms	2 × 7 DoF
Waist	3 DoF
Legs	2 × 6 DoF
Arm reach	558 mm without end effector
Joint torque	120 Nm peak
Temperature	-10 °C to 40 °C

Motion and payload

X2 Basic reaches a maximum walking speed of 1.8 m/s. Payload is up to 3 kg in specific postures and no more than 1 kg across the full motion range, excluding the end effector.

Sensors and communication

X2 BASIC

RGB camera	interactive RGB camera
3D LiDAR	not equipped
RGB-D camera	not equipped
Touch sensor	head touch sensor
Audio	microphone array, wireless mic, speaker
Display	interactive screen and lighting effects
Wireless	Wi-Fi and Bluetooth
USB	1 × Type-A, 1 × Type-C
Network	not available
Video output	not available

X2 ULTRA

RGB cameras	interactive, front dual RGB, rear RGB
3D LiDAR	equipped
RGB-D camera	equipped
Touch sensor	head touch sensor
Audio	microphone array, wireless mic, speaker
Display	interactive screen and lighting effects
Wireless	Wi-Fi, Bluetooth and 4G/5G
USB	2 × Type-A, 2 × Type-C
Network	2 × RJ45
Video output	Mini DisplayPort

Power supply

BASIC: BATTERY	approx. 500 Wh
BASIC: RUNTIME	approx. 2 hours at a walking speed of 0.5 m/s
BASIC: CHARGING TIME	up to 1.5 hours
BOTH MODELS	direct charging and swappable battery
ULTRA: AUTO DOCKING	optional automatic charging dock

Computing platform and software

X2 BASIC

2 × RK3588. Mobile app, handheld controller and OTA updates. No secondary development at platform level.

X2 ULTRA

2 × RK3588 plus Jetson Orin NX with 157 TOPS. AimDK_X2, Python, C++ and ROS2.

Software and integration

BASIC: SYSTEM MAINTENANCE

Mobile app, handheld controller and OTA updates.

BASIC: DEVELOPMENT

No secondary development; LinkCraft and LinkSoul support according to the supplier.

ULTRA: SDK

AimDK_X2 with task-related APIs, sensor streams and motion control.

ULTRA: LANGUAGES

Python and C++.

ULTRA: INTEGRATION

ROS2 support for research and development.

ULTRA: INTERFACES

2 × USB Type-A, 2 × USB Type-C, 2 × RJ45 and Mini DisplayPort.

Interaction and autonomy

Both models support multimodal interaction through visual perception, speech, touch and gestures. A microphone array, wireless microphone, speaker, interactive screen and lighting effects complement communication. Autonomous navigation and proactive obstacle avoidance support motion sequences without continuous remote control.

X2 Ultra extensions

EXTENDED PERCEPTION	3D LiDAR, RGB-D camera, front dual RGB camera and rear RGB camera provide spatial and visual environment data.
AUTOMATIC POWER SUPPLY	An optional charging dock supports automatic approach and charging.
DEVELOPMENT PLATFORM	AimDK_X2, Python, C++ and ROS2 support research and integration projects.
COMPUTING PERFORMANCE	A Jetson Orin NX rated at 157 TOPS complements the two RK3588 computing units.
COMMUNICATION	Wi-Fi, Bluetooth and a 4G/5G module provide wireless connectivity.
WIRED INTERFACES	Two USB Type-A, two USB Type-C and two RJ45 ports plus Mini DisplayPort are available.

Scope of delivery

Robot, charger, handheld controller, microphone, quick-start guide, certificate of conformity and battery.

Notice

Technical specifications are based on the provided manufacturer and product information. Specifications are subject to change. Equipment differs between X2 Basic and X2 Ultra.