

UNITREE G1 Edu - U2

Gamintojas: **UNITREE** · Modelis: **077312** · EAN: **5907085525624** · Prekės kodas: **760410**



53 712,90 €

Kaina su PVM

Be PVM: **44 390,83 €**

Sandėlyje



Prekė internetu

Nuskenaukite kodą arba apsilankykite www.shopro.lt



Aprašymas

Unitree G1 EDU U2

The G1 EDU U2 is an enhanced version of the Unitree G1 humanoid robot, created as an advanced avatar of artificial intelligence for education and scientific research. It is great for research on locomotion, motion planning and human-robot interaction. It is perfect for technical universities, scientific institutes and research and development teams. Its advanced motion capabilities also make it an excellent tool for experiments and impressive technology presentations and demonstrations. The device retains the compact size known from the basic version (about 130 cm in height and 35 kg in weight), but offers much greater movement capabilities. With speeds of up to 2 m/s and 29 degrees of freedom, the robot moves even more smoothly and precisely, maintaining better control over the entire body.

Natural, expressive movement dynamics

The G1 EDU U2 expands on the movement capabilities known from the Basic version, providing even more realistic and fluid motorization. The robot can run, jump, climb stairs, dance and demonstrate martial arts-inspired sequences, while efficiently changing positions without losing balance. The increased number of degrees of freedom allows for a smoother combination of individual movements and greater freedom to perform complex arrangements. This makes the G1 Edu U2 perfect for research and testing applications as well as impressive presentations.

Even higher level of stability

The EDU U2 version has been equipped with as many as three degrees of freedom at the waist, allowing for more natural trunk work and more precise control of balance during walking, running and sudden changes in direction. In addition, each leg of the robot has six degrees of freedom,

allowing for smooth body weight transfer and stable movement even on uneven surfaces such as stones. As a result, the device maintains a high level of stability both in confined spaces and in more challenging terrain.

Greater freedom of arm work

The G1 Edu U2 variant offers seven degrees of freedom in the arms, paving the way for the realization of much more complex maneuvers. The robot can easily reach objects close to obstacles and operate precisely in confined spaces. Combined with powerful PMSM motors, industrial cross bearings and dual encoders in the joints, the design ensures high precision, repeatability and full motion control. These are key features especially in the research and development of advanced robotic arm systems.

Expanded hand manipulation capabilities

The Unitree G1 EDU U2 can be equipped with an advanced Dex3-1 three-fingered manipulator hand. This design offers seven degrees of freedom, including independent control of the thumb, index finger and middle finger, enabling confident grasping and precise manipulation of objects. Thanks to the hybrid force and position control, the robot is able to safely work with a variety of objects while maintaining high accuracy of movements. With the G1 EDU U2 hand attached, it can, among other things, handle a hammer, move small parts and perform many other tasks that require skillful manipulation.

Advanced 3D spatial perception

The robot uses an advanced perception system that combines an Intel RealSense D435i depth camera with a Livox MID-360 3D LiDAR sensor. This set of sensors provides the precise data necessary for autonomous navigation, detailed analysis of the environment and planning of movement trajectories. As a result, the Unitree G1 EDU U2 can effectively detect and avoid obstacles, as well as efficiently navigate complex spaces, providing solid support for research on perception and spatial orientation of humanoid robots.

Natural voice communication

Thanks to an advanced audio system, including a 5 W stereo speaker and a set of four microphones with noise reduction and echo cancellation, the robot can effectively recognize voice commands in challenging acoustic environments, as well as clearly reproduce audio messages. This makes interaction with users natural and intuitive. G1 EDU U2 can therefore actively participate in demonstrations, educational activities and various types of experiments.

Humanoid AI platform

The G1 EDU U2 educational robot is much more than a device that executes pre-programmed sequences of movements - it is designed as an open platform for working with artificial intelligence algorithms in a real-world environment. It supports imitation learning and reinforcement learning, allowing it to develop new skills based on observations and its own experiences. This is complemented by the proprietary UnifoLM model, which allows AI to be used in a wide range of tasks and scenarios. This makes the G1 EDU U2 ideal for AI-based humanoid robot development research, while also being able to act as an intelligent assistant.

Extended runtime and mobility

The 9,000 mAh smart battery provides up to about two hours of operation on a single charge. This makes it possible to test the robot's capabilities, use more functions and prepare the device for presentations without rushing. Such a solution suits well the needs of intensive use in educational and research environments. In addition, the quick battery replacement system minimizes downtime, allowing research, teaching or demonstrations to continue smoothly. In addition, the EDU U2 variant, like the other models in the G1 series, can be folded to a compact size (69 × 45 × 30 cm). Such a solution facilitates transportation and storage, allowing the robot to be moved quickly and conveniently between laboratories, teaching rooms and research stations.

General

Manufacturer	Unitree
Model	G1 EDU U2
Dimensions in standing position	1320 × 450 × 200 mm
Dimensions in folded position	690 × 450 × 300 mm
Weight (including battery pack)	more than 35 kg
Basic computing power	8-core high-performance processor
Sensors and communications	Depth camera + 3D LIDAR
Directional microphones	yes
5W stereo speaker	yes
WiFi 6, Bluetooth 5.2	yes
High computing power module	NVIDIA Jetson Orin
High computing power module	none
Manual controller	yes
OTA updates	yes
Possibility of further development	yes

Degrees of freedom

Total number of degrees of freedom	23-43
Single leg	6
Waist	1 + optional 2 additional degrees of freedom
Single arm	5
Single hand	7 + optional force control for three-fingered hand + 2 additional degrees of freedom for wrist
Dex3-1 hand parameters	Thumb: 3 active degrees of freedom; Index finger: 2 active degrees of freedom; Middle finger: 2 active degrees of freedom
Optional installation of tactile sensors	yes
Joint bearings	Industrial cross roller bearings (high precision, high load carrying capacity)
Joint motors	Synchronous motors with permanent magnets and low inertia internal rotor (better response speed and heat dissipation)
Knee joint torque	120 N·m
Maximum load on the arm	approximately 3 kg
Calf + thigh length	0,6 m
Arm span	approximately 0.45 m

Joint range of motion

Waist	Z ±155°, X ±45°, Y ±30°
Knee	0~165°
Hip	P ±154°, R -30~+170°, Y ±158°
Wrist	P ±92.5°, Y ±92.5°
Full internal wiring routing	Yes
Joint encoder	dual encoder
Cooling system	Local air cooling

Power supply

Battery type	Lithium (13 cells)
Quick exchange capability	Yes
Capacity	9000 mAh
Charger	54V 5A
Operating time	approximately 2 hours

Gross weight: 50000, Net weight: 40000, Box length: 88,00, Box width: 53,00, Box height: 42,00, GPSR Link: https://psr-assets.innpro.pl/robots/robots_humanoid_robots.pdf, Information about data generation: <https://dataact.innpro.pl/unitree/5907085525624>

Techninė specifikacija

Specifications	
Sandėlio grupė	Robots/Roboty Humanoidalne/Seria G1 [+3][-1]
Matmenys ir svoris	
Matmenys (l × P × A)	88,00cm × 53,00cm × 42,00cm
Svoris	50,00kg