

Hypershell X Ultra Exoskeleton



Model: HSX-ULT

Manufacturer: HYPERHELL

EAN: 6977518000089

Product Code: 801996

R38,021

Hypershell X Ultra Exoskeleton

The Hypershell X Ultra is a flagship motion-assistance exoskeleton that combines AI MotionEngine technology, advanced materials engineering, and extreme resistance to external conditions. The device analyzes the user's movement up to 1,000 times per second and responds with a latency of just 2 milliseconds, ensuring smooth assistance even during dynamic running. Thanks to its powerful peak output of 1,000 W, the system actively relieves the lower body, reducing physical effort by 39% and enabling movement at an assisted speed of up to 25 km/h. A foldable design with a record-low weight of 1.8 kg, a lightweight diamond-weave nylon support system, a range of up to 30 km, and full reliability at temperatures as low as -20°C make the Hypershell X Ultra an uncompromising tool designed for professionals and the most demanding users.

AI MotionEngine - precise real-time motion analysis

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AI MotionEngine technology is responsible for the exoskeleton's intelligent operation and constitutes its most important component. The system uses a set of advanced sensors, including inertial measurement units (IMUs), gyroscopes, and barometers, to continuously analyze the user's movement. With a data processing rate of 1,000 analyses per second, the device is able to react instantly to changes in pace, direction, and terrain incline. With a latency of just 2 milliseconds, the support remains natural and seamlessly synchronizes with the body's biomechanics even during dynamic running or traversing difficult terrain, ensuring precise assistance regardless of the intensity of the effort.

High performance and lower-body relief

The exoskeleton actively supports the lower body, assisting both in lifting the legs and in dynamically propelling them forward. In practice, this translates to a dramatic reduction in fatigue while walking and running, especially in demanding terrain. Utilizing a powerful peak power of 1000 W, the system is able to relieve the user, reducing total physical effort by up to 39%, which is crucial during long-distance trips or when moving with heavy gear. Additionally, the Hypershell X Ultra generates extra propulsion, providing assistance at speeds up to 25 km/h, which makes it easier to tackle steep ascents and move dynamically at a pace unattainable with standard solutions.

Ergonomic design and full freedom of movement

The Hypershell X Ultra was designed to not restrict the body's natural biomechanics even during the most intense exertion. The device offers up to 300 degrees of rotational freedom, allowing the user to freely perform dynamic movements such as running, cycling, turning, or climbing. The durable construction, based on SpiralTwill 3000 carbon fiber and SinterShell sintered titanium alloy, ensures exceptional durability and rigidity while maintaining an exceptionally low weight of just 1.8 kg (without the battery). This means the exoskeleton feels like no burden at all, and the unique, foldable design—approximately 43 cm long—makes it easy to transport in a standard hiking backpack.

AeroFlex SoftSuit - comfort even during hours of use

Comfort is ensured by the advanced AeroFlex SoftSuit system, which consists of ten layers with a total thickness of 4 millimeters. The outer layer of the carrying system is made of lightweight

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diamond-weave nylon, ensuring exceptional durability and resistance to damage. The material is designed to provide both adequate ventilation and moisture resistance, maintaining comfort even during intense physical activity. The padding conforms to the user's body, reducing pressure points and minimizing the risk of chafing. As a result, the exoskeleton can be worn for hours without discomfort, regardless of the thickness of the clothing worn.

Durability and reliability in extreme conditions

The Hypershell X Ultra exoskeleton is designed to operate in the most demanding environments, making it a reliable tool for expeditions and professional fieldwork. The housing meets the IP54 standard, ensuring effective protection against dust, mud, and splashes, allowing the device to be used freely in harsh weather conditions. The device maintains full functionality in an extreme temperature range from -20°C to 60°C, enabling its use in high-altitude conditions, during freezing winters, and in the summer heat. Its robust construction, combined with electronics protection, ensures high durability and resistance to heavy-duty field use, where the device is exposed to accidental impacts or changing weather conditions.

Smart operating modes tailored to the situation

The Hypershell X Ultra automatically adjusts its operation to environmental conditions, but the user can also select specific operating modes. Transparent Mode allows for free movement without motor assistance, which works well on flat terrain or during rest periods. Eco Mode provides gentle assistance while reducing energy consumption, whereas Fitness Mode introduces controlled resistance, supporting active leg muscle training. A unique feature of the Ultra model is Hyper mode, which unleashes the device's full power (1000 W), offering maximum support during the most demanding moments. Additionally, the device supports twelve smart modes that automatically activate depending on the situation: Cycling+ (cycling), Running+ (running), Dune (dunes), Snow (snow), Down Stairs (going down stairs), Downhill (going downhill), Gravel (loose terrain), Mountain (mountain climbing), Speed Walking (brisk walking), Uphill (climbing uphill), Up Stairs (climbing stairs), and Walking (walking). Thanks to this, the exoskeleton precisely responds to every change in terrain and activity type, optimizing support in real time.

Power that keeps up with your pace

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A 5000 mAh (72 Wh) battery allows you to cover a distance of up to 30 kilometers on a single charge. These specifications ensure the device performs flawlessly during the most demanding activities. Support for the 65W USB-C Power Delivery standard allows for rapid recharging—it takes about 35 minutes to charge the battery halfway, and a full charge (0-100%) takes about 88 minutes. The system was designed with cell safety in mind, which is why the optimal charging temperature ranges from 0°C to 40°C. The kit includes two easily interchangeable batteries, providing a total range of up to 60 kilometers and enabling uninterrupted operation even in extremely low temperatures.

Full control and data analysis with the Hypershell+ app

The dedicated Hypershell+ app is compatible with iOS, Android, and watchOS. Thanks to Apple Watch support, users can access key statistics and assistance settings directly from their wrist—without having to reach for their phone. The software allows for real-time monitoring of movement parameters, analysis of calories burned, and precise adjustment of the assistance level to individual preferences. The app also allows for wireless device software updates (OTA), ensuring constant access to the latest algorithms and performance optimizations. This integration with the mobile ecosystem makes the exoskeleton a smart extension of your body.

Versatile use—from mountain trails to athletic challenges

The Hypershell X Ultra is designed for the most demanding scenarios—from high-altitude expeditions to intense sports activities. The device makes it easier to tackle steep ascents during trekking, providing support for mountaineers, nature photographers carrying heavy gear, or surveyors working in challenging terrain. With assistance up to 25 km/h and dedicated operating modes, the Ultra model also excels during trail running and cycling, significantly reducing muscle fatigue while maintaining high movement dynamics. The exoskeleton is also a reliable aid in professional work requiring prolonged movement with a load in harsh conditions. Thanks to its resistance to extreme cold and powerful output (1000 W), the Hypershell X Ultra becomes a versatile tool for professionals and outdoor enthusiasts who want to push the limits of their endurance regardless of the season.

Included:

- Exoskeleton

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- Battery x2
- USB-C cable
- User manual

Manufacturer	Hypershell
Model	X Ultra
Color	Glossy black
Dimensions when folded	430 × 260 × 125 mm
Weight	1.8 kg (excluding battery)
Construction materials	SpiralTwill 3000 carbon fiber, SinterShell sintered titanium alloy
Frame material	Ultra-lightweight diamond-weave nylon
Maximum power	1000 W
Physical effort reduction	39%
Maximum assisted speed (while running)	25 km/h
Battery range	30 km
Battery capacity	5000 mAh / 72 Wh
Charging time (0-100%)	Approximately 88 minutes (using a 65 W portable charger)
Charging temperature	0°C to 40°C
Operating modes	Transparent, Eco, Hyper, Fitness
Smart modes	Cycling+, Running+, Dune, Snow, Down Stairs, Downhill, Gravel, Mountain, Speed Walking, Uphill, Up Stairs, Walking
Smart control	watchOS, iOS, and Android
Protection rating	IP54
Operating temperature	From -20°C to 60°C

Gross weight: 4710, Net weight: 1800, Box length: 53,00, Box width: 36,50, Box height: 20,00, GPSR
Link: https://psr.innpro.pl/sport/sg_sport__exoskeleton.pdf, Information about data generation:
<https://dataact.innpro.pl/hypershell/6977518000089>, PPWR: <https://ppwr.innpro.pl/en/hypershell>