

Hypershell X Carbon Exoskeleton



Model: HSX-CBN

Manufacturer: HYPERHELL

EAN: 6977518000157

Product Code: 1085358

R29,850

Hypershell X Carbon Exoskeleton

The Hypershell X Carbon is a flagship motion-assist 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 800 W, the system actively relieves the lower body, reducing physical effort by 30% and enabling movement at speeds of up to 20 km/h. A foldable design with a record-low weight of 1.8 kg, a support system with a waterproof membrane, a range of up to 17.5 km, and full reliability at temperatures as low as -20°C make the Hypershell X Carbon 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 is 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 800 W, the system is able to relieve the user, reducing total physical effort by up to 30%, which is crucial during long-distance expeditions or when moving with heavy gear. In addition, the Hypershell X Carbon generates additional propulsion, providing assistance at speeds up to 20 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 Carbon 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 carbon fiber, a 3D-printed titanium alloy, and an aluminum 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—measuring approximately 43 cm in length—makes it easy to transport in a standard hiking backpack.

AeroFlex SoftSuit - comfort even during hours of use

The advanced AeroFlex SoftSuit system ensures comfort, utilizing a high-performance waterproof membrane in the Carbon model. The construction consists of ten layers with a total thickness of 4

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millimeters, which guarantees not only durability but, above all, an active barrier against moisture. The membrane effectively protects against rain and snow while allowing the skin to breathe and efficiently wicking away heat during intense exertion. The lining precisely conforms to the body, reducing pressure points and minimizing the risk of chafing.

Durability and reliability in extreme conditions

The Hypershell X Carbon 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, guaranteeing effective protection against dust, mud, and splashes, allowing for unrestricted use of the device 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.

Intelligent operating modes tailored to the situation

The Hypershell X Carbon automatically adapts 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 Carbon model is Hyper Mode, which unleashes the device's full power (800 W), offering maximum support during the most demanding moments. Additionally, the device supports ten smart modes that automatically activate depending on the situation: Walking, Speed Walking, Running, Cycling, Mountain, Gravel, Uphill , Downhill, Up Stairs, and Down Stairs. This allows the exoskeleton to respond precisely to every change in terrain and activity type, optimizing support in real time.

Power that keeps up with your pace

The 5000 mAh (72 Wh) battery allows you to cover a distance of up to 17.5 kilometers on a single charge. These specs 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

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minutes to charge the battery to 50%, 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 set includes two easily interchangeable batteries, providing a total range of up to 35 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 assist 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 Carbon 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 equipment, or surveyors working in challenging terrain. With assistance up to 20 km/h and dedicated operating modes, the Carbon 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 (800 W), the Hypershell X Carbon becomes a versatile tool for professionals and outdoor enthusiasts who want to push the limits of their endurance regardless of the season.

Included:

- Exoskeleton
- Battery x2
- USB-C cable
- User manual

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Manufacturer	Hypershell
Model	X Carbon
Color	Deep black
Dimensions when folded	430 × 260 × 125 mm
Weight	1.8 kg (excluding battery)
Construction materials	Carbon fiber, 3D-printed titanium alloy, aluminum alloy
Carrying system material	High-performance waterproof membrane
Maximum power	800 W
Physical effort reduction	30%
Maximum assist speed (while running)	20 km/h
Battery range	17.5 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, Down Stairs, Downhill, Gravel, Mountain, Running, Speed Walking, Up Stairs, Uphill, 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: 19,50, GPSR
Link: https://psr.innpro.pl/sport/sg_sport__exoskeleton.pdf, Information about data generation:
<https://dataact.innpro.pl/hypershell/6977518000157>, PPWR: <https://ppwr.innpro.pl/en/hypershell>

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