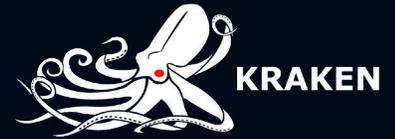


SeaPower™



Pressure-Tolerant Batteries

Kraken's SeaPower™ pressure-tolerant batteries have the best energy-to-weight ratio on the market for deep sea batteries and are capable of providing 100+ hours of continuous operation while running a full survey payload. SeaPower's deep-sea proven design operates at depths up to 6,000 m.

Undersea systems are exposed to extremely high-pressure environments. SeaPower silicone encapsulated lithium-polymer cells are protected from the harmful effects of the seawater while still leaving them flexible and stable. This silicone encapsulation eliminates the need for pressure-tolerant housings and components, reducing both weight and costs.

SeaPower's batteries can be used singularly or connected in modular banks, depending on your requirement for capacity and voltage. Each battery block is equipped with an integrated Battery Management System (BMS) allowing you to quickly and easily monitor the status and health of the battery.

Kraken's proprietary vacuum technique for encapsulating the battery cells allow for a depth rating for up to 6,000 m



BM450V45

Features

- Reliable, rugged design
- High-energy density
- Oil compensation not required
- Modular system
- Diverse connector options
- Integrated Battery Management System (BMS)
- Data interfaces: CAN, RS485, or customer-specific

Applications

- Autonomous Underwater Vehicles (AUVs)
- Subsea Resident UUVs
- Stationary platforms
- Subsea energy supply

BM450V45 - Specifications

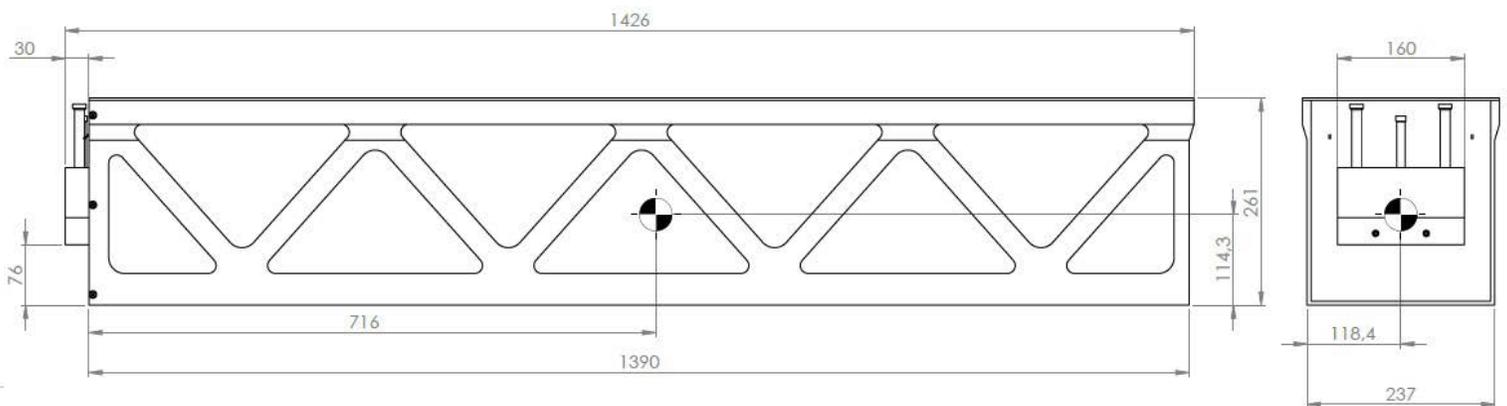
Operational depth	6,000 m
Energy capacity	20 kWh; 450 Ah
Voltage (Max)	50.4V EOC
Voltage (Nominal)	44.4 V
Voltage (Minimum)	36V EOD
Current (Continuous discharge)	28 A
Current (Continuous charge)	28 A
Charge time	16-18 hours
Operating temperature	
Charging	10° C to 45° C
Discharging	-10° C to 55° C @ 60±25% R.H.
Life cycles	1,000 cycles, 80% retention
Life calendar	Up to 10 years, 80% retention
Life storage	Up to 10 years, 80% retention, SOC 50 ±5%
Weight (in air)	158 kg
Weight (in fresh water)	72 kg
Dimensions (LxWxH)	1426 mm x 249 mm x 261 mm



The image above shows Kraken's SeaPower™ BM450V45 pressure-tolerant batteries installed in the Kongsberg Hugin AUV operated by Ocean Infinity.

This battery configuration has enabled Ocean Infinity to accomplish several dives deeper than 5,000 m and an unprecedented mission of over 100 hours without the need to recharge.

Kraken has achieved an industry first for AUV survey mission longevity, and considerably more flexibility to optimize mission plans, increase area coverage, manage weather impact, reduce launch and recovery operations, and significantly increase value for their customers in even the most remote parts of the world's oceans.



Measurements above are in millimeters

