

## Corvus Dolphin Energy

The Dolphin Energy ESS is specifically designed for lightweight applications. Dolphin Energy combines outstanding energy density and a reasonable power density with the highest level of safety, setting new industry standards for maritime energy storage systems.

The flexible design of the Dolphin Energy allows the system to be stacked in various directions enabling high space efficiency in compact installations.



### Applications

Dolphin Energy is ideal for ships with long, slow charges and discharges where lightweight is essential.

Typical vessels are:

- Tourist vessels
- Canal boats
- Yachts
- Sightseeing vessels
- Ferries

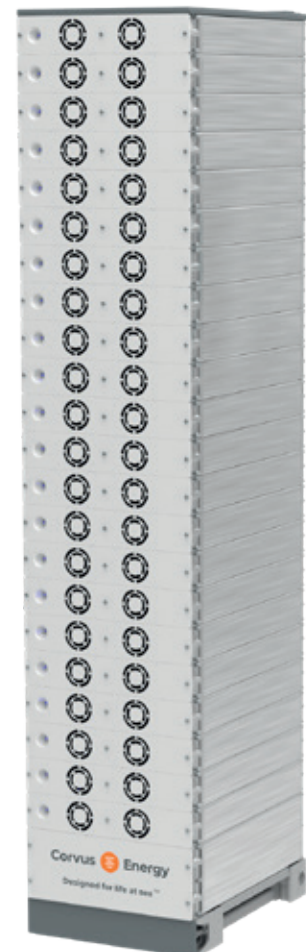
### Features

- Low C-rate for slow charge and discharge
- Low weight
- Designed for voltages up to 1200 VDC
- Flexible installation
- Low life cycle cost
- Easy and safe plug and play connections
- Very flexible and modularised design
- Passive single-cell Thermal Runaway protection
- Scalable capacity and voltage according to vessel requirements
- Industry-proven Battery Management System (BMS)
- Remote monitoring capabilities
- Enhanced EMI immunity design for maritime environments

### Corvus Energy safety innovations

#### Passive-Single - Cell-level Thermal Runaway (TR) Isolation

- True cell-level thermal runaway isolation
- TR does not propagate to neighbouring cells
- Isolation NOT dependant on active cooling



## Technical Specifications | Corvus Dolphin Energy

### Performance Specifications

C-Rate - Peak (Discharge / Charge)	1,0C / 1,0C for 10 seconds
C-Rate - Continuous (Discharge / Charge)	0,5C / 0,5C

### System Specifications

Single Module Size / Increments	8,3 kWh / 50 VDC
Single Pack Range	116 - 199 kWh / 504-1195 VDC
Max Gravimetric Density - <b>Pack</b>	168 Wh/kg   5,96 kg/kWh
Max Volumetric Density - <b>Pack</b>	217 Wh/l

### Example Pack - 24 Modules

Energy	199 kWh
Voltage	Max: 1195 VDC   Nom: 1046 VDC   Min: 864 VDC
Dimensions	Height: 2725 mm   Width: 500 mm   Depth: 672 mm   1183 kg

### Example System - 30 Packs

Energy	3972 kWh
Voltage	Max: 797 VDC   Nom: 697 VDC   Min: 576 VDC
Dimensions	Height: 1850 mm   Width: 3980 mm   Depth: 4030 mm   23460 kg

### Safety Specifications

Thermal Runaway Anti-Propagation	Passive cell-level thermal runaway isolation
Fire Suppression	Per SOLAS, class and Corvus recommendation
Disconnect Circuit	Cell individual fail-safe for over-temperature and over-voltage
Short Circuit Protection	Fuses included on cell, module and pack level
Emergency Stop Circuit	Hard-wired
Ground Fault Detection	Integrated
Disconnect Switchgear Rating	Full load

### General Specifications

Class Compliance	DNV, Lloyds Register, Bureau Veritas, ABS, RINA
Ingress Protection	IP55
Cooling	Forced air
Vibration and Shock	UNT38.3, DNV 2.4
EMC	DNVGL-CG-0339

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