



2017 PREMIUM ELECTRIC OUTBOARD MOTORS

The Electric Outboard Manufacturer



INNOVATION - THE FUTURE OF SUSTAINABLE ELECTRIC PROPULSION

ePropulsion proudly presents premium electric outboard motors for sustainable and clean electric boating without exhaust or oil. Dedicated designers and engineers have introduced the latest Hydrocarbon and Nitrogen Oxide-free technology to these clean and efficient outboards. Through continuous innovation, ePropulsion's mission is to design and manufacture safe and reliable electric motors that work in harmony with lakes, rivers, and oceans.

Motors from ePropulsion do not discharge exhaust into the water, and are safe and simple with no smells and no leaks. They are designed with a unique and well-balanced efficiency utilizing a unique brushless DC motor design. There are no

gears, thus ensuring a quiet operation without vibration, while still delivering high torque output and density. The high efficiency rating is achieved by delivering a high propulsive power rating from the available battery power.

Along with premium engineered performance backed by a 2 year warranty, ePropulsion motors bring electric on-water transportation to a new level. The motors are elegantly designed and will make any boat owner proud to have on their dinghy, inflatable, or fishing boat.



About Us

ePropulsion Technology Limited was founded in 2012 by four engineers based in Hong Kong in order to provide innovative electric propulsive power. These premium electric propulsion motors deliver a better boating experience. The R&D road map plans for a full range of sustainable power systems as well as solar boat solutions. Electric propulsion is the core of ePropulsion but there are even more exciting products coming!

SPIRIT 1.0

The Spirit of Watersports

Equivalent to 3HP gasoline outboards and designed for tenders, dinghies and sailboats, SPIRIT 1.0 is the perfect choice for fishing and short trips.

#S1000000 – Spirit 1.0 Shortshaft #S1000000L – Spirit 1.0 Longshaft

- 1KW power, equivalent to 3hp gas outboards
- Suitable for boats up to 3,000 lbs.
- **Waterproof IP67** housing and plug connections when connected or unconnected
- 1017Wh lithium-polymer battery allows for cruising duration **2x longer** than other electric outboard motors
- Available in two shaft lengths
- High overall propulsive power efficiency
- **Ultra low noise** - max 60dB
- **Safe and unsinkable battery design** - it floats, if accidentally mishandled
- **Light weight** - 21.5lbs / 9.8kg excluding battery
- Integrated and detachable battery and foldable tiller, for easy storage and carry from daysailor to dinghy or car
- Battery and motor are similar in weight, allowing for better weight balancing when carrying
- Integrated on-board computer with audible alarm for battery charge
- **No regular service requirement**



Brilliant Design Simplifies Your Life

This 3HP motor is designed to be portable while remarkably robust. It weighs only 21.5lbs / 9.8kg for the convenience of single-hand carrying. The integrated tiller eliminating the annoyance of carrying a tiller separately guarantees you delight in your journey.

Performance – Speed and range for boat up to 3000 lbs.*

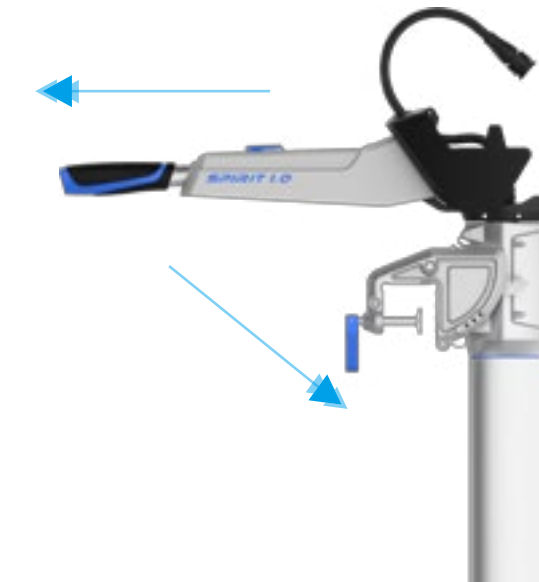
	Speed (MPH / KMH)	Range (MILE / KM)	Runtime (HH:MM)
Slow Throttle	2.3 / 3.7	46.0 / 74.0	20:00
Half Throttle	3.4 / 5.5	23.8 / 38.5	7:00
Full throttle	5.7 / 9.2	5.7 / 9.2	1:00

*Depends on type of craft, boat, load weight, propeller, and weather conditions. Speed and range data table does not represent a legal guarantee of speed and range.



Easy Battery Installation

Align slots and blocks to place the battery on battery base



Integrated Tiller Design

This 3HP motor is designed to be portable while remarkably robust. It weighs only 21.5lbs / 9.8kg, and easy to carry with one hand. The integrated tiller eliminates carrying the tiller separately.

Folding the Tiller for Storage

Draw the tiller along axial direction to the end point and fold the tiller down to the lock position.

When Performance Combines With Elegance



Smart LCD Display:

The concise LCD displays battery charge level, voltage level, real-time power, and warnings.

Emergency Magnetic Kill Switch:

Once the emergency magnet is detached, the motor stops immediately, for safe operation of the boat and passengers on it.

Stepless Throttle:

Stepless throttle offers superior forward and reverse shifting smoothness.



Clamp:

This patented clamp allows for maximum stability of the engine while underway.

Charging Port:

When connected to charger through household sockets, full re-charge occurs in approximately 6 hours.

Plug-in and Go:

With an IP67 waterproof connector, the battery remains unaffected in rain or immersion situations. Its concise design ensures a perfect fit when installing the battery.

Long Duration Battery:

This 1000Wh battery offers smart Battery Management System (BMS) built inside, offering run time twice as long as other electric outboard engines.

Unsinkable Battery Design:

With its unique floating design, the SPIRIT Battery will not sink even it falls into water.

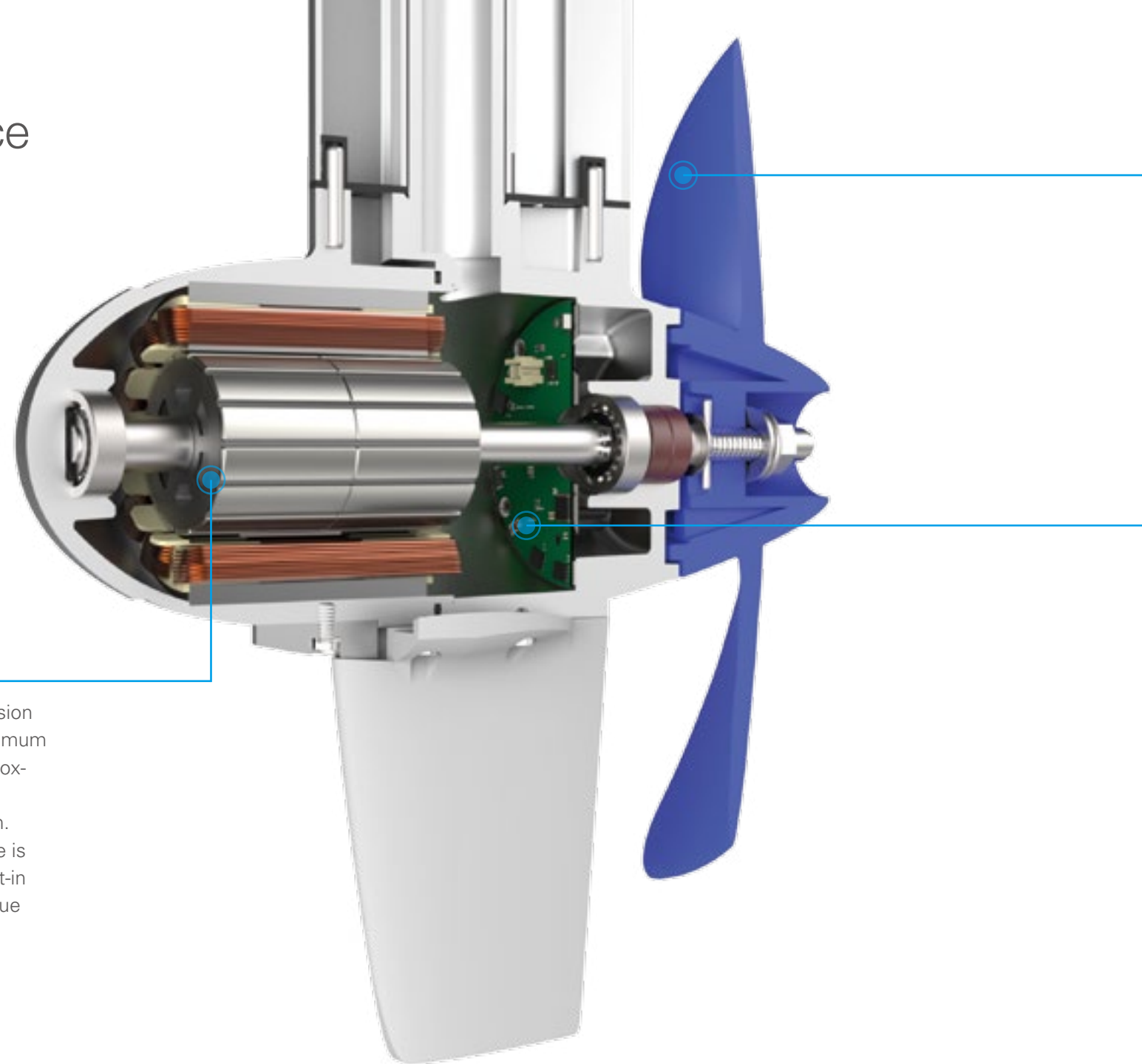
Advanced Design and Engineering for Performance

A higher efficiency could be considered as a major advantage over gasoline outboards. This electric motor features a gearbox-free design, which means the motor is maintenance free. Together with its optimized motor structure, SPIRIT achieves an overall efficiency of more than 50%.



Motor:

The motor is one of the most important components in a marine propulsion system. ePropulsion uses high quality brushless DC motors with a maximum efficiency of 90% and high efficient water cooling. They feature a gearbox-free design to eliminate noise and reduce the maintenance concerns associated with other motors on the market that have a gear box design. If a user accidentally has the propeller strike an underwater object, there is no concern about costly gear box repair with an ePropulsion motor. Built-in motor protection slows and/or shuts down the motor, by sensing a torque difference when striking an underwater object.



Propeller:

The propeller of conventional small power outboards usually has a small diameter and high rotational speed due to insufficient torque output of gasoline engines at low speed. The large torque output of the ePropulsion product enables the motors to use a large diameter, low rotational speed propeller, which is much more efficient than conventional propellers. The propeller efficiency is optimized by using a variable-pitch design, which also keeps the propeller in high efficiency at a wider speed range.

Motor Driver:

An advanced motor driver based on Field Oriented Control (FOC) uses vector control algorithms designed to ensure the motor runs at high efficiency and low noise. FOC was originally developed for high performance motor applications that are required to operate smoothly over the full speed range, and utilizes higher efficiency and lower electromagnetic noise. ePropulsion has now brought this technology to the small electric outboard market. The controller has an efficiency of at least 98%, so almost all the power goes directly to the motor.

The intelligent motor driver ensures better protection against high-temperature, motor stall, short circuit and under/over voltage.



TECHNICAL SPECIFICATION

Input Power (from battery)	1KW
Battery	1017Wh Lithium Polymer
Propulsive Power (thrust x speed, shaft power x propeller efficiency)	500W
Comparable Gasoline Outboards (propulsive power)	3HP
Comparable Gasoline Outboards (thrust power)	4HP
Max Overall Efficiency	50%
Max Propeller Speed	1200rpm
Weight (including battery)	S: 18.6kg / 41lbs L: 18.9kg / 41.6lbs
Weight (w/o battery)	S: 9.8kg / 21.5lbs L: 10.0kg / 22.1lbs
Weight of Battery	8.8kg / 19.5lbs
Battery Size	416mm x 275mm x 202mm 16.37inch x 10.82inch x 7.95inch
Shaft Length	S: 630mm / 24.8inch L: 754mm / 29.7inch
Standard Propeller Diameter	280mm / 11.5inch
Rated Current	24.6A
Nominal Voltage	40.7V
Final Charging Voltage	46.2V
Cut-off Voltage	33V
Temperature Range Operation	-10°C~40°C / +14°F - 104°F
Battery Charge Time (empty to full)	Standard charger: 5.1hrs Fast charger: 2.2hrs
Cycle Life (to 80% of rated capacity)	> 500 cycles
Static Thrust	66lbs
Control	Tiller
Trim Device	4 Steps (0°, 7°, 14°, 21°)

NAVY 6.0

Shape your lifestyle

This 6kw, equivalent to 9.9HP, electric outboard offers a solution for reliable and durable clean boating, while being able to get a boat to planning speed. The motor is perfect for a 4m-6m / 14ft-20ft fishing jon boat. Its high efficiency and low noise design make it perfect for cruising and fishing. The intelligent remote throttle with integrated display simplifies equipment installation and provides essential information for your cruising.

#N6R00000 – Navy 6.0 Remote Shortshaft #N6T00000 – Navy 6.0 Tiller Shortshaft
#N6R00000L – Navy 6.0 Remote Longshaft #N6T00000L – Navy 6.0 Tiller Longshaft



Wireless Intelligent Remote Throttle:

Stepless throttle control offers superior forward and reverse shifting smoothness, and offers live feedback for cruising including remaining battery power, real-time velocity, input power, etc.



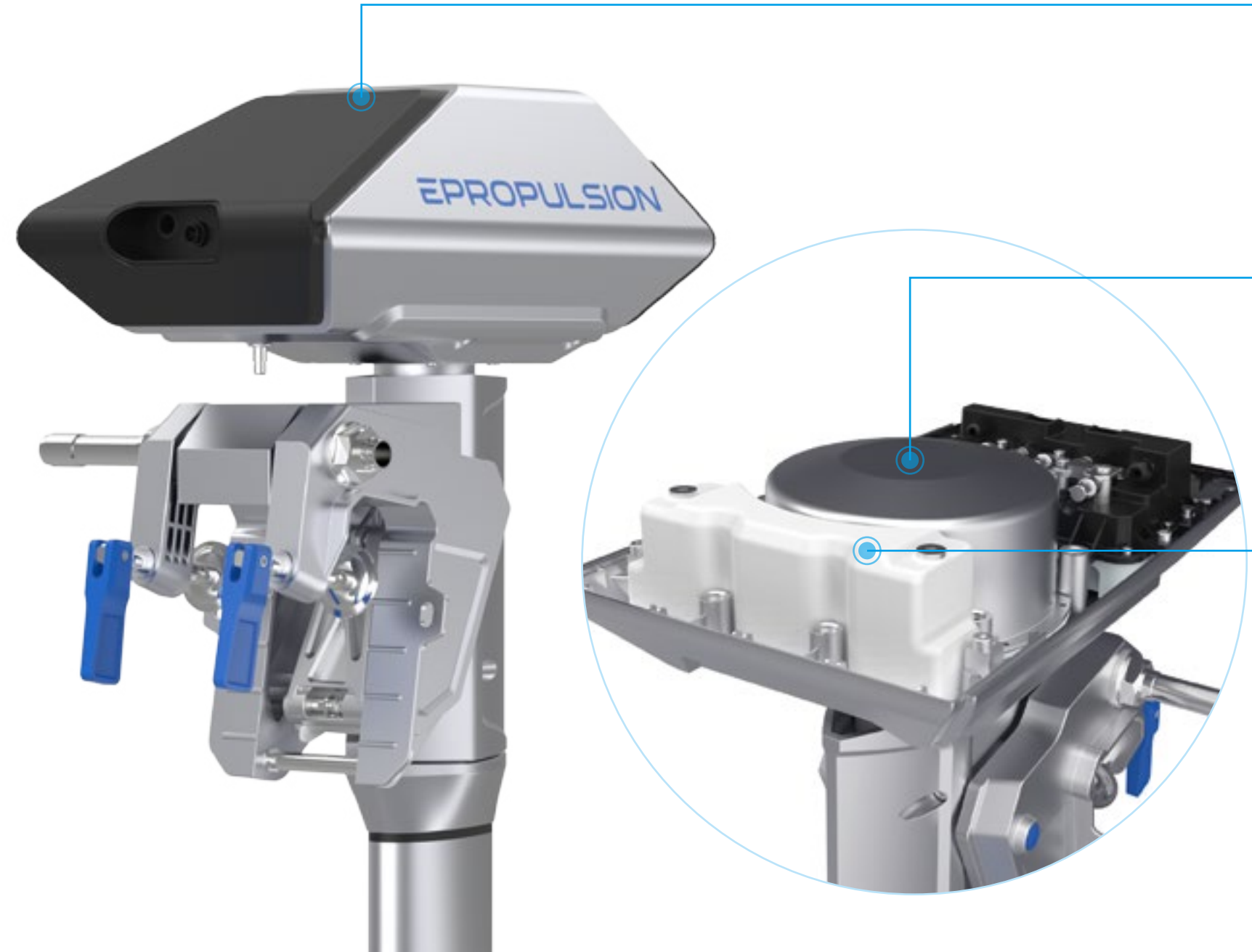
Outstanding Features

- 6KW, equivalent to 9.9HP
- Suitable for boats up to 6,000 lbs.
- **Waterproof IP67** housing and plug connections when connected or unconnected
- 48V lithium-ion battery pack, 25% of traditional AGM battery weight
- Available in remote or tiller design, along with two shaft lengths
- Highest power-weight ratio in the market, along with high overall efficiency
- **Light weight** - 28.8kg / 63.5lbs excluding battery
- User friendly design - iF World Design Guide: [Design Excellence Award 2015](#)
- Battery is easy to carry and install
- **Wireless intelligent remote control** with integrated LCD display for all relevant information
- **Embedded GPS** - for providing velocity data and estimated distance
- Changing of gear oil is only maintenance required

Performance – Speed and range for boats up to 6000 lbs. with 2 x Navy Battery*

	Speed (MPH / KMH)	Range (MILE / KM)	Runtime (HH:MM)
Slow Throttle	4 / 6	64 / 96	16:00
Half Throttle	8 / 13	40 / 65	5:00
Full throttle	12 / 20	12 / 20	1:00

*Depends on type of craft, boat, load weight, propeller, and weather conditions. Speed and range data table does not represent a legal guarantee of speed and range.



GPS Module(built in):

The integrated GPS module indicates real-time cruising information eg. speed, distance, time, etc. via smart screen on the remote controller.

High-efficient Motor:

ePropulsion motors use high quality brushless DC motors with a maximum efficiency of 90% and closed-loop liquid cooling technology.

Closed-loop Liquid Cooling Technology:

The system carries away heat generated by motor and driver in a much more effective way compared with traditional cooling methods. It also avoids constant system maintenance traditionally required.

Navy Battery

The 48V lithium-ion battery pack is specially designed for NAVY with safety as its first priority. With high energy density lithium ion battery cells, it is only one-fourth the weight and half the volume of traditional AGM batteries, but still delivers output energy of more than 3000Wh. The automotive grade battery management system, together with 18650 cells from first-class manufacturers, ensures high performance and reliability of the battery pack. The battery communicates with the outboard system through the RS485 protocol.

In multiple battery applications, parallel strategy supports up to eight batteries, allowing them to charge and discharge simultaneously as if they are a single battery.



Over - Discharge Protection Short - Circuit Protection Over - Current Protection



Over - Charge Protection Overheat Protection Battery Unit Protection

Battery Management System:

As the brain of all battery cells, BMS is not only in charge of accurate gauge calculation and normal operation, but also protects the battery against over charge/discharge, current fluctuations, excess temperature, and short circuit. Together with redundant safety design, the battery is guaranteed to be safe even when it encounters a failure. In addition, the BMS extends the battery lifetime with the cell balancing technology and smart "deep sleep" design.



System Communications:

Two identical communication ports with dual function on the battery top cover provide the most flexibility for system connections. One function is for parallel battery communication up to eight batteries at the same time, while the other function is for communicating with the NAVY controller for implementing intelligent control strategy and displaying battery information on the monitor.

Power Switch:

The simple ON-OFF switch allows user the ability to set the battery in "deep sleep" mode directly and easily, which can reduce the consuming power and extend the storage time of the battery.

Housing:

The aluminum alloy body is made by high strength extrusion with precision machining technology, which provides better thermal conduction and stronger structure to protect the battery cells.

IP67 Waterproof:

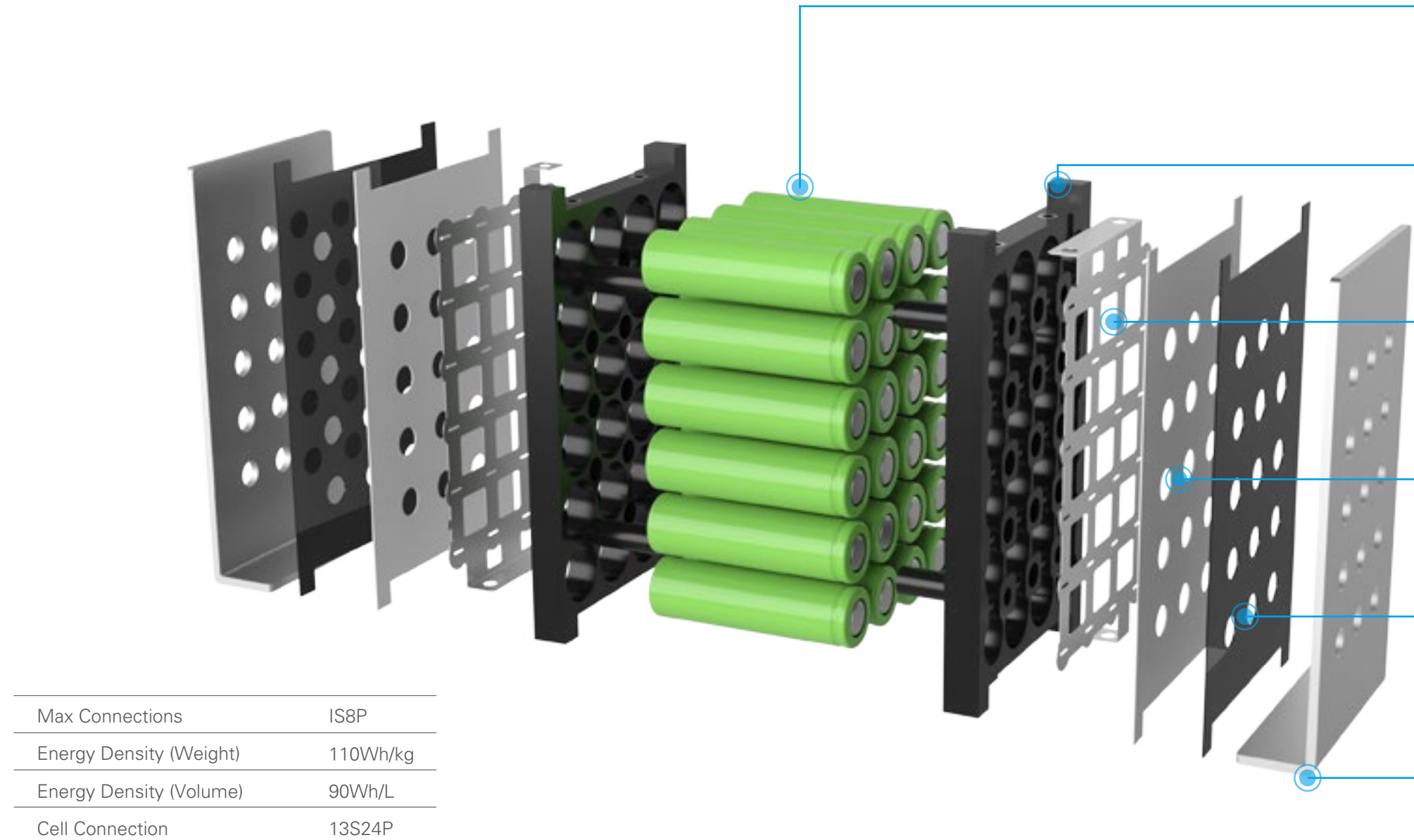
The battery carries the IP67 waterproof housing and plug connections. Rigorous testing ensures quality before packing.

Battery Module

Each battery pack is produced by a strictly controlled and managed assembly process. This honeycomb-structure design ensures the safety distance between each cell. The layered flame-resistant structure, heat conduction material, and aluminum alloy shell shield the cells comprehensively.

Technical Specification

Battery Type	Lithium-ion
Weight	31.5kg / 69.4lbs
Dimensions	594mmx209mmx283mm / 23.4inchx8.2inchx11.1inch
Waterproof	IP67
Nominal Voltage	46.8V
Rated Capacity	65Ah
Nominal Energy	3042Wh
Max Cont. Discharging Current	80A
Charging Voltage	54.6V
Discharge Cut-off Voltage	39V
Charging Temperature	0°C~40°C / 32°F~104°F
Discharging Temperature	-20°C~65°C / -4°F~149°F
Cycle Life (to 80% of rated capacity)	500 cycles with approx. 20% capacity loss



Max Connections	IS8P
Energy Density (Weight)	110Wh/kg
Energy Density (Volume)	90Wh/L
Cell Connection	13S24P

High Quality Battery Cells:
Each of the uniform cells has a PTC (Positive Temperature Coefficient) component to protect it from overheating.

Flame Resistant Bracket:
Fastens battery cells and makes sure there is a safe distance between each cell.

Electricity Connection Tablet:
Connecting battery cells by machine welding assures the resistance uniformity of each cell.

Silicone Pad:
Transfers heat efficiently with good insulation effect.

Insulating Layer:
Provides extra insulated protection between electricity connection tablet and aluminum plate.

Aluminum Plate:
High thermal conductivity allows it to transfer heat to body shell efficiently.



TECHNICAL SPECIFICATION

	NAVY 6.0	NAVY 3.0
Input Power (from battery)	6KW	3KW
Comparable Gasoline Outboard	9.9HP	6HP
Max Overall Efficiency	55%	55%
Max Propeller Speed	1550rpm	1800rpm
Weight (without battery)	S: 28.8kg / 63.5lbs L: 29.6kg / 65.3lbs	S: 26.8kg / 59lbs L: 27.3kg / 60lbs
Shaft Length	S: 650mm / 25.6inch L: 774mm / 30.5inch	S: 650mm / 25.6inch L: 774mm / 30.5inch
Standard Propeller Diameter	High: 320mm / 12.6inch Low: 340mm / 13.4inch	320mm / 12.6inch
Rated Current	125A	63A
Rated Voltage	48V	48V
Gear Ratio	1.85:1	/
Pitch	High: 274mm / 10.8inch Low: 216mm / 8.5inch	165mm / 6.5inch
Cooling	Closed-loop Liquid Cooling	Natural-convection Heat Transfer
Control	Remote Throttle or Tiller	Remote Throttle or Tiller
Trim Positions	4 steps + tilt	4 steps + tilt
Tilt Angle	Manual: 60°	Manual: 60°

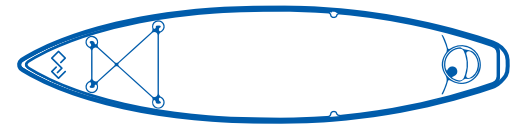
LAGOON

Take You Further

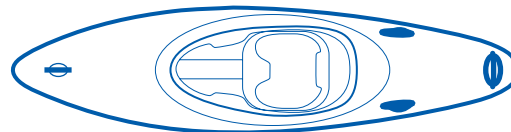
The well-adapted Lagoon can be used nearly all kinds of SUPs, kayaks, canoes, hobbies as well as most other small-sized boats. The small-but-mighty power system supports 1.1 hours full-speed running, perfectly back you up whether you need a rest or want to go further.

#L0000000 – Lagoon #L0M00000– Lagoon Motor
#L0B00000 – Lagoon Battery #L0RC0000 – Lagoon Remote Controller

- Adaptable - for SUPs, Kayaks and Canoes
- Long duration and extended travel range
- Intelligent protection
- Quick charge - only 3 hours
- High overall efficiency - excellent performance
- Battery unsinkable design
- Super light - Lagoon including battery weighs only 4kg
- User friendly design - easy to carry and store
- Wireless remote control



SUP



Canoe



Kayak



Outstanding Features

Intelligent Protection:

Lagoon will stop automatically once it detects the remote controller attached to the user or propeller falling into water.

Intelligent LEDs:

The four LEDs indicate not only battery level, but also warning information and pairing status of the remote controller.

Integrated BMS:

The integrated BMS protects the battery against over-charge, over-discharge, short-circuit, over-current and over-temperature.

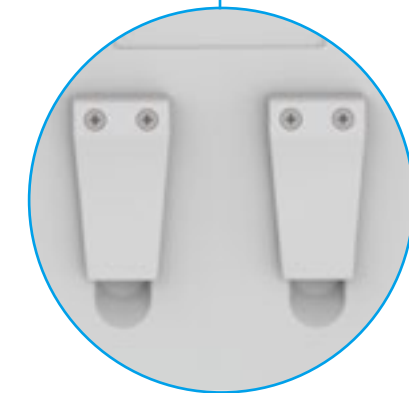
Easy to Fix:

The four hollowed up corners make the battery easily fixed on the board by ropes.



Smooth Speedup:
Slide the bar forward to speed up smoothly.

Small and Wearable:
The small-sized remote controller can either be fixed on a paddle or wear it on wrist like a watch.



The two buckles on the battery bottom offer you another option of fixing the battery.



TECHNICAL SPECIFICATION

Input Power	300W
Static Thrust	25lbs
Nominal Voltage	22.2V
Final Charging Voltage	25.2V
Motor Weight (without battery)	1.5kg / 3.3lbs
Motor Size	162mm×167mm×182mm 6.38inch×6.57inch×7.17inch
Standard Propeller	150mm / 5.9inch
Propeller Pitch	115mm / 4.5inch
Max Propeller Speed	1800rpm
Control	Wireless Remote
Battery Type	Lithium-ion
Battery Capacity	333Wh
Weight of Battery	2.5kg / 5.5lbs
Battery Dimension (LxWxH)	216mm×178mm×100mm 8.5inch×7inch×3.94inch
Cycle Life	500 cycles (to 80% of rated capacity)
Relative Humidity	65 ± 20%RH



Accessories - SPIRIT 1.0



SPIRIT Propeller / S1M00100
Propeller - nylon with fiber glass



SPIRIT Anode/ S1M01100
Zinc block for anti-corrosive purpose



SPIRIT Battery / S1B00000
1000W lithium polymer battery with IP67 rating and unsinkable feature



SPIRIT Skeg/ S1M00400
Skeg - glass fiber reinforced polymer



SPIRIT STANDARD CHARGER / S1C00100
Spirit standard charger with 180W (2A Input, 44V/4A Output)



SPIRIT Fast Charger / S1C00200
Fast Charger-Spirit 1.0 462W Standard (4.62A Input, 46.2V/10A Output)

Accessories - NAVY



NAVY Battery / NB000000

This 48V lithium-ion battery pack is a perfect alternative to the traditional AGM battery. It usually takes two batteries in parallel to power NAVY.



NAVY Charger / NBC00100

Connecting the battery charger, it only takes 2 hours and 40 minutes to fill the charge bank using ordinary household wall socket.



Remote Control / N6RC0000

With wireless communication, the NAVY can be controlled remotely.



NAVY Propeller

N6LU0200H – High Pitch

N6LU0200 – Low Pitch

For the NAVY, designers increase the number of blades of propeller in order to absorb larger power with the increasing blade area ratio.



Dual Remote Control

With Dual Remote Control, you can enjoy the amazing experience from two NAVYs.

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The information is subject to update, please visit our website www.epropulsion.com for the latest information.



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