

## Li<sup>TE</sup> Marine Range

The following specifications pertain to the Li<sup>TE</sup> Marine range of lithium iron phosphate batteries manufactured by Freedom Won specifically designed for moderately corrosive and moist environments <sup>1</sup>.

	5/4	10/8	20/16	30/24
Total Energy Capacity [kWh]	5	10	20	30
Nominal Voltage [V]	Available in 13V, 26V and 52V options			
Max/Cont. Discharge Current [A] < <sup>2</sup>	200/100 (52V) 300/200 (26V) 300/300 (13V)	300/200 (52V) 300/300 (26V) 300/300 (13V)	480/400 (52V) 480/480 (26V) 480/480 (13V)	480
Max. & Cont. Charge Current [A]	100 (52V) 200 (26V) 300 (13V)	200 (52V) 300 (26V) 300 (13V)	400 (52V) 480 (26V) 480 (13V)	480
Max. Recommended Inverter Total Rated Power (cont.) [kVa]	8 (52V) 8 (26V) 4 (13V)	10 (52V) 8 (26V) 4 (13V)	15 (52V) 12 (26V) 6 (13V)	25 (52V) 12 (26V) 6 (13V)
Max. Daily DoD Suggested (average) [%]	80% DoD	80% DoD	80% DoD	80% DoD
80% DoD Energy [kWh]	4	8	16	24
Round Trip Efficiency [%]	96-98	96-98	96-98	96-98
Height [mm]	282	282	282	282
Width [mm]	320	320	600	600
Length (including end handles or eye bolts) [mm]	600	905	910	1170
Total Weight [kg]	49	89	173	254
Enclosure	Aluminium, powder coated, tamper proof, waterproof IP65, corrosion resistant, handles or eye bolts for lifting, rubber feet			
DC Connection - Fly Leads, [no. per electrode] <sup>3</sup>	1x 50mm <sup>2</sup>	1x 50mm <sup>2</sup>	1x 95mm <sup>2</sup>	1x 95mm <sup>2</sup>
External Interface	CAN Bus (Note that an external relay control harness is an optional item and must be specified with the order if the application needs the battery to control relays such as for alternator regulator remote enable)			
On-board Management	Full battery management system and internal trip protection			
Human Interfaces	USB Plug for Programming and data access with PC, main breaker, error reset button, SoC display, error light			
Protection	Shunt Trip Circuit Breaker sized to suit max current, can be tripped by BMS if critical fault, manual reset. Protection for overcurrent, cell under and over voltage, temperature, weak cell detection and other critical events			
Battery Chemistry	Lithium Iron Phosphate (LiFePO <sub>4</sub> )			
Cell Form Factor	Large Format ultra-heavy-duty prismatic cells of 100Ah each and 3,2V nominal voltage.			
Battery Cooling	Natural Convection (heat generation is negligible inside the battery)			
Suitable Ambient Temp [°C] <sup>4</sup>	0°C to +40°C			
Extreme Operating Temp [°C]	-20°C to +60°C			
Remote Monitoring	Optional: Real time data logging and transmission via WiFi to online portal of key battery information			
Warranty <sup>5</sup>	10 years or 4 000 cycles for average 80% DoD, and max 90% DoD			
Service Life	>16 years (>5 500 cycles) expected life at 80% DoD <sup>1</sup> , >20 years (>7 500 cycles) at 50% DoD			
Essential Accessories	USB "printer" cable (one is supplied with each battery) CAN Bus Termination Resistor - one included with battery CAN Bus cable (RJ45 LAN Cable) - one required per battery (not supplied) Some inverters require a (non-standard pin configuration) cable - see manual			

### Notes to Specification Sheet

- This range is not designed for direct exposure to salt water such as for above deck on a small boat. The intended use is below deck away from actual water spray. The product is also recommended for use on seaside properties where airborne sea moisture is a corrosion concern. For above deck applications please contact Freedom Won for a solution.
- Max discharge load (current) duration where lower than continuous - 30 seconds per 40 second cycle. 1.5 x Max overload can be handled for 5 seconds.
- DC Cables 1.8m long, power cable Red = Positive, Black = Negative, conductors in table refer to one electrode i.e. per positive and negative connections.
- Charging below 0°C not permitted. Extended time above 45°C not recommended for optimal battery life.
- Warranty is 10 years of 4000 cycles at an average of 80% DoD per cycle, 70% capacity guaranteed by end of warranty. This warranty applies to Lites sold after 1 September 2019. For Lites sold prior please contact Freedom Won for warranty information.