

Li^{TE} Commercial 52V Range

The following specifications pertain to the Freedom Won Li^{TE} Commercial range of 52V lithium iron phosphate batteries manufactured by Freedom Won with capacities fitting in above the Freedom Won Li^{TE} Home and Business and below the Freedom Li^{TE} Industrial ranges.

	100/80	200/160
Total Energy Capacity [kWh]	100	200
80% DoD Energy [kWh]	80	160
90% DoD Energy [kWh]	90	180
Current Capacity [Ah]	2 000	4 000
Max. Cont. Charge and Discharge Current ¹ [A]	2 000	2 400
Max & Cont. Charge and Discharge Power ¹ [kW]	100	120
Nominal Voltage ² [V]	52	52
Max. Inverter Cap. [kVA]	90	108
Total Weight [kg]	883	1760
Height [mm]	1550	1550
Depth (from wall) [mm]	370	370
Length (width along wall) [mm]	1261	2 456
DC Connection - Fly Leads, [no. per electrode] ³ [mm ²]	3x120	4x120
Round Trip Efficiency	96-97%	
Enclosure	Aluminium enclosure painted white, for use indoors or fully protected under-cover environments, rated to IP20	
External Interface	CAN Bus	
On-board Management	Comprehensive battery management system and internal trip protection	
Human Interfaces	On and Off Buttons, State of Charge Display (0 to 100%), Error light, Error Reset Button, USB plug for Programming and data access with PC, main breaker	
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 ₄)	
Cell Form Factor	Large Format heavy-duty prismatic cells of 200Ah each and 3,2V nominal voltage, fully sealed in plastic casing with laser welded electrode connections	
Battery Cooling	Natural Convection (heat generation is negligible inside the battery)	
Suitable Ambient Temp [°C]	C to +35°C	
Extreme Operating Temp [°C] ⁴	-20°C to +60°C	
Warranty ⁵	10 years or 4 000 cycles for average 80% DoD, and max 90% DoD	
Service Life - Cycles & Years	>16 years (>5 500 cycles) expected life at 80% DoD per cycle, >20 years (>7 500 cycles) at 50% DoD	

Notes to Specification Sheet

- The maximum (peak) and continuous current and power ratings are the same for the Li^{TE} Commercial battery range.
The maximum values given apply to both charge and discharge. For systems requiring more than 140kW, two or more batteries must be installed in parallel.
- For higher battery voltages refer to the Freedom Won Li^{TE} Commercial HV and HV+ ranges.
- Fly Leads 4.0m long as standard, power cable Red= Positive, Black= Negative, conductors in table refer to one electrode i.e. per positive and negative connections. Up to 8m long available at extra cost (must be specified in order).
Note that the fly leads exit the battery on the right end side near the top.
- Charging below 0°C not permitted. Extended time above 45°C not recommended for optimal battery life.
- See Freedom Won Warranty document for further detail.