

Plug into the current future with



Unit 23, Ruimsig Boulevard Shopping Centre, Amorosa, Roodepoort, 1724, South Africa / PO Box 1449, Ruimsig 1732

Reg. No: 2012/102270/07 / VAT No: 4430267486 / T: 082 256 7430 / lizette@freedomwon.co.za

SPECIFICATION SHEET- Freedom Lite Commercial 52V COMMERCIAL SCALE LiFePO4 ENERGY STORAGE

The following specifications pertain to the **Freedom Lite Commercial** range of 52V lithium iron phosphate batteries manufactured by Freedom Won with capacities fitting in above the **Freedom Lite Business** and below the **Freedom Lite Industrial** ranges.

Freedom Lite Commercial	100/70	120/84	140/98	160/112	200/140	300/210	400/280	500/350	600/420	700/490
Total Energy Capacity [kWh]	100	120	140	160	200	300	400	500	600	700
70% DoD Energy [kWh]	70	84	98	112	140	210	280	350	420	490
90% DoD Energy [kWh]	90	108	126	144	180	270	360	450	540	630
Current Capacity [Ah]	2 000	2 400	2 800	3 200	4 000	6 000	8 000	10 000	12 000	14 000
Max. Cont. Charge and Discharge Current (1) [A]	2 000	2 000	2 400	2 400	2 400	2 800	2 800	2 800	2 800	2 800
Max. Cont. Charge & Discharge Power (1) [kW]	100	100	120	120	120	140	140	140	140	140
Nominal Voltage (2) [V]	52									
Max. Inverter Cap. [kVA]	90	90	108	108	108	135	135	135	135	135
Total Weight [kg]	1 040	1 250	1 500	1 700	2 200	3 300	4 300	5 300	6 300	7 400
Height [mm]	2 100									
Depth (from wall) [mm]	350					750				
Length (width along wall) [mm]	1 400	1 850	2 300	2 750	3 200	4 600	3 200	4 100	4 600	5 500
DC Connection – Fly Leads, [no. per electrode] (3) [mm ²]	3x120	3x120	4x120	4x120	4x120	6x120	6x120	6x120	6x120	6x120
Round Trip Efficiency	96-97%									
Enclosure	3mm thick Aluminium, powder coated, tamper proof, indoor use									
External Interface (4)	CAN Bus									
On-board Management	Full 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, CANdapter 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 ultra-heavy-duty prismatic cells of 200Ah each and 3,2V nominal voltage, fully sealed in plastic casing with bolt on electrode connections									
Battery Cooling	Natural Convection (heat generation is negligible inside the battery)									
Suitable Ambient Temp [°C]	0°C to +40°C									
Extreme Operating Temp [°C] (5)	-20°C to +60°C									
Remote Monitoring	Real time data logging and transmission via WiFi to online portal of key battery information									
Warranty (6)	10 years or 4 000 cycles for average 80% DoD, and max 90% DoD									
Design Life – Cycles	>16 years (>6 000 cycles) expected life at 70% DoD per cycle, >20 years (>7 500 cycles) at 50% DoD									

Plug into the current future with



Notes to Specification Sheet:

1. The maximum (peak) and continuous current and power ratings are the same for the Lite 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.
2. Higher voltage batteries are available on request ranging up to 750V DC (nominal).
3. Fly Leads 3.0m 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 5m long available at extra cost (must be specified in order). Note that the fly leads exit the battery as follows according to the model:
 - Model 100/70 and 120/84 – Exit is on the right-hand side of the battery enclosure near the top
 - Other models – Exit is on the top of the battery near the right-hand side
4. Potential free contacts and analogue outputs also available on request for several control features (details on request).
5. Charging below 0°C not permitted. Extended time above 45°C not recommended for optimal battery life.
6. See Freedom Won Warranty document for further detail.