

# LITE COMMERCIAL HV+ RANGE

## Range Overview Specification Sheet



	Commercial 230/184 HV+	Commercial 300/240 HV+	Commercial 400/320 HV+	Commercial 500/400 HV+	Commercial 700/560 HV+	Commercial 800/640 HV+
Total Energy Capacity [kWh]	230	300	400	500	700	800
Energy, 80% DoD [kWh]	184	240	320	400	560	640
Energy, 90% DoD [kWh]	207	270	360	450	630	720
Current Capacity [Ah]	400	400	600	800	1000	1200
Max/Cont. Charge and Discharge Current [A] <sup>1</sup>	400/300	400/400	600/600	800/700	800/700	800/700
Max/Cont. Charge and Discharge Power [kW] <sup>1</sup>	230/173	300/300	400/400	500/457	574/502	533/466
Nominal Voltage [V]	576	736	678	653	717	666
Max/Min. Operating Voltage [V]	639/513	817/655	753/604	724/581	795/638	738/593
Max Recommended Inverter Total Rated Power (cont.) [kVA]	230	300	400	500	630	500
Short Circuit Current [kA]	10	10	15	19	24	29
Battery Dimensions - H x W x D [mm] <sup>2</sup>	1388x2300x540	1460x2410x730	1576x2870x730	1406x3850x750	1410x4880x730	1395x5580x730
Crated Dimensions - H x W x D [mm]	1575x2485x630	1575x2645x815	1695x3105x835	1575x3990x835	On-site build	On-site build
Battery Weight [kg]	1718	2238	3098	3918	6180	7000
Crated Weight [kg]	1882	2426	3332	4198	On-site build	On-site build
DC Connection - Fly Leads (no. per electrode) [mm <sup>2</sup> ] <sup>3</sup>	1 x 120mm <sup>2</sup> Permpower	1 x 185mm <sup>2</sup> Permpower	1 x 185mm <sup>2</sup> Polybraid	1 x 185mm <sup>2</sup> Polybraid	1 x 185mm <sup>2</sup> Polybraid	1 x 185mm <sup>2</sup> Polybraid
Round Trip Efficiency [%]	96-97					
Enclosure	3mm thick Aluminium, powder coated, tamper proof, indoor use, rated to IP20					Heavy duty custom Aluminium powder, tamper proof, indoor use, rated to IP20. Container options - 6m up to 2 x 800/640 models, 12m up to 4x 800/640+ models (shipping weight restrictions might require partial site assembly of battery for weight above 22T).
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					
Control Interface	CAN Bus for diagnostics & troubleshooting. RJ45 Strictly for BMS & inverter communication					
Human Interface	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					
On-board Management	Full battery management system and internal trip protection					
Battery Chemistry	Lithium Iron Phosphate (LiFePO4)					
Cell Form Factor	Large Format heavy-duty prismatic cells of 200Ah each and 3.2V nominal voltage, laser welded electrode connections					

### Notes to Specification Sheet

The LITE Commercial high voltage range is available in two variants, namely the HV and HV+. The HV models are suitable for the ATESS HPS range of hybrid battery inverters and the HV+ is suitable for the PCS range of battery inverters and associated PBD DC charge controllers. The 230/184HV+ model is suitable for both the HPS and PCS ranges. Note that integration with other inverter brands is feasible - please contact Freedom Won for assistance.

- For capacity more than 800kWh, multiple of these models must be configured in parallel on the same DC bus or with separate DC bus with inverters linked on the AC bus.
- The maximum values given apply to both charge and discharge. For systems requiring more power, two or more batteries must be installed in parallel. Max current duration 5min every 10min. 1.5 x Max overload can be handled for 5 seconds. Current limits rated for 10°C to 25°C battery temperature. Derating will apply outside this temperature range..
- Excluding protrusions.
- 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-hand side near the floor on all the LITE Commercial HV and HV+ models. This is to suit the bottom entry of the floor standing ATESS inverters. A cable trench is recommended for routing this cable along with all the other cables going to and from the inverter (a cable tray is an alternative).
- 800/640 HV+: Heavy duty custom aluminium enclosure. Container options - 6m up to 2 x 800/640 models, 12m up to 4x 800/640+ models (shipping weight restrictions might require partial site assembly of battery for weight above 22T).
- Charging below 0°C not permitted. Extended time above 35°C not recommended for optimal battery life.
- See Freedom Won Warranty document for further detail.

**DISTRIBUTORS AND RESELLERS**

Contact your nearest Accredited Freedom Won Distributor or Reseller Installer for further sales and technical support.

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Battery Cooling	Natural convection (heat generation is negligible inside the battery)			Forced air cooling		Fan and louver cooling solution
Suitable Ambient Temp [°C] <sup>4</sup>	0°C to +35°C					
Extreme Operating Temp [°C] <sup>4</sup>	-20°C to +60°C					
Warranty <sup>5</sup>	Standard Warranty: 10 years (or 6000 cycles) 80% DoD, 0.5C Max Discharge, 0.25C Max Charge, Max 25°C					
Service Life <sup>5</sup>	>16 years (>5 500 cycles) expected life at 80% DoD per cycle, >20 years (>7 500 cycles) at 50% DoD					

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