eTower 2

Specification Sheet - Configuration Overview

Backward Compatibility

Forced Air Cooling

Now with Bluetooth & Wi-Fi

Monitor via Android or iOS App

The following specifications pertain to the Freedom Won eTower 2 modular stackable $LiFePO_4$ battery, designed for smaller residential and light commercial applications with options of 1, 2, 3, 4, 5 or 6 modules in a tower per system. The eTower 2 is backwards compatible with previous generation eTower systems, allowing for seamless integration and system expansion.









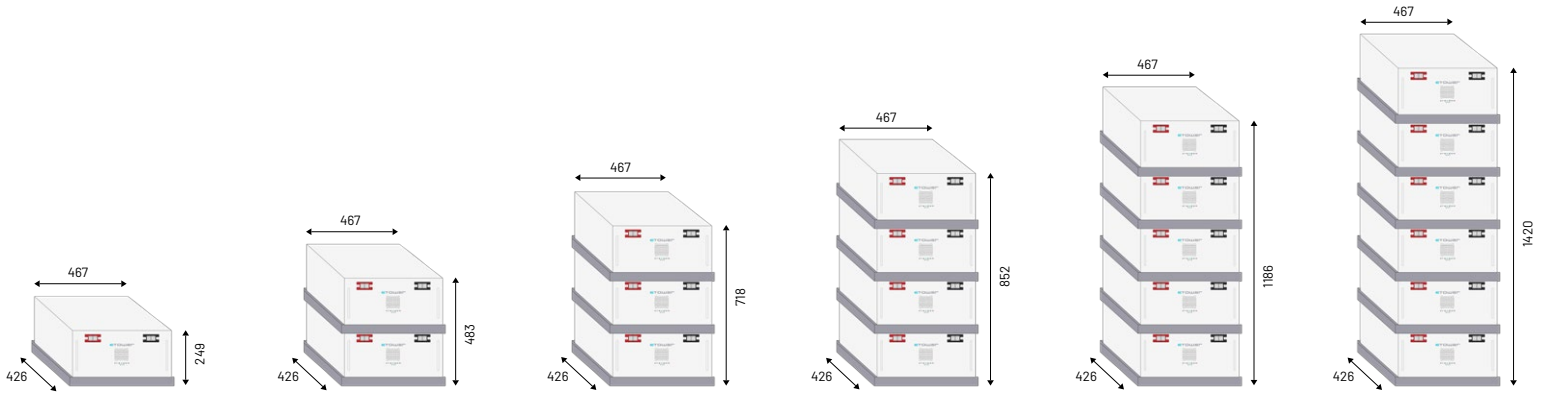




	1 x eTower 2	2 x eTower 2	3 x eTower 2	4 x eTower 2	5 x eTower 2	6 x eTower 2
Total Energy Capacity [kWh]	5.12	10.24	15.36	20.48	25.60	30.72
Energy, 90% DoD [kWh] [1]	4.5	9	13.5	18	22.5	27
Current Capacity [Ah]	100	200	300	400	500	600
Max/Cont. Charge Current [A] [2]	80/70	144/126	216/189	288/252	360/315	432/378
Max/Cont. Charge Power [kW] [2]	4.2/3.6	7.5/6.6	11.2/9.8	15/13.1	18.7/16.3	22.5/19.7
Max/Cont. Discharge Current [A] [2]	100/90	180/160	270/240	360/320	450/400	540/480
Max/Cont. Discharge Power [kW] [2]	5.2/4.7	9.4/8.4	14/12.6	18.7/16.8	23.4/21	28/25.2
Max Inverter Rated Power [kVA]	5	10	15	20	25	30
Nominal Voltage [V]	51.2V, to suit 48V Inverters, min 47V, max 56V. *Do not connect modules in series (for high voltage batteries, refer to Freedom Won HV range).					
Dimensions when eTower 2 placed horizontally: H x W x D (front to rear) [mm]	Single unit with pedestal: 249x467x426	Single unit with pedestal: 483x467x426	Single unit with pedestal: 718x467x426	Single unit with pedestal: 952x467x426	Single unit with pedestal: 1186x467x426	Single unit with pedestal: 1420x467x426
Dimensions - H x W x D (excluding busbars on front) [mm]	Single unit without pedestal: 224x442x384					
Crated Dimensions - H x W x D (per module) [mm]	310x532x502					
Combined Weight [kg]	52	104	156	208	260	312
Crated Weight (per module) [kg]	55					
DC Leads to Inverter or DC Bus per positive & negative connection - minimum cable size *Cables excluded (see optional accessories) [mm^2]	1 x 35	1 x 35	2 x 35	2 x 35	3 x 35	3 x 35
Installation Method	Stacked horizontally onto each other to form a tower with pedestals (one per module required as accessory option), or 19" rack mounted with brackets (sold as an accessory). Vertical mounting on floor or wall (shelf/bracket) with terminals facing upwards also acceptable (wall-mount bracket available as accessory). Generally up to 6 x eTower 2 modules per system. For larger capacity requirements, see Freedom Won ENVA 16.					
Enclosure	Steel - Painted off-white, rated for indoor use only, out of direct sun and away from other heat sources. Includes forced air cooling fan. Do not obstruct air inlets and outlet.					



Wall-mount example



DISTRIBUTORS AND RESELLERS

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

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1 x eTower 2



2 x eTower 2



3 x eTower 2



4 x eTower 2



5 x eTower 2



6 x eTower 2

DC Connection - Integrated Terminals on Front	2 x M6 bolts each for positive and for negative terminals for DC leads to inverter and optional accessory busbars for connection of parallel e5000's in tower or rack configuration.
Tower Interconnecting Busbars - minimum cross section area *Busbars excluded (see optional accessories) [mm^2]	70 (17mm x 4mm busbar available in accessories) *Note that the Freedom Won busbar accessories are designed for the pedestal tower dimensions, not for 19" rack mounting, which has different spacing.
Communication and Control Interfaces (see manual for further details)	• CAN Bus (RJ45 socket x 1) - For interfacing with compatible inverters and system controllers (the eTower is fully compatible with all common CAN bus compatible brands) • RS485 (RJ45 Socket x 1) - For interfacing with the Voltronics Axpert range of inverters equipped with a RS485 lithium battery interface and the applicable firmware • RS232 (RJ45 socket x 1) - For interfacing with a PC for firmware and setting updates (only by Freedom Won technicians) • RS485 (RJ45 x 2) - For the communication connection of parallel batteries up to six in tower • Digital outputs x 2 - For controlling external relays based on pre-set functions • Bluetooth - For local connection to Android or iOS App • Wi-Fi - For remote access to battery information via the App.
Protection	Internal electronic protection including overcurrent, cell under and over voltage, temperature out of range, weak cell detection, minimum SoC control, active voltage based charge current limiting *DO NOT short circuit or connect in reverse polarity
Prospective Short Circuit Current [kA]	5
Recommended Ambient Operating Temperature Range [°C]	10 - 25
Human Interface	• State of Charge Display (0 to 100% indicated by six green LED's) • Alarm LED (red) • Run LED (green) • On LED (green) • BMS Reset button • Main power On/Off switch • BMS On/Off switch • Serial RS232 plug for programming via PC (by Freedom Won only) • Dip Switch block for selecting module addresses • Android or iOS App
Warranty [3]	5 Years (or 4000 cycles)
Service Life [4]	>10 Years
Optional Accessories (enquire with your distributor) [5]	• Freedom Won eTower wall mount bracket • Freedom Won eTower 19" rack mount brackets/cleats (pair) • Freedom Won eTower parallel stacking accessory kit - One parallel busbar pair and eTower-to-eTower communication cable • Freedom Won eTower DC cable kit - One pair of DC cables ($35mm^2$ x 1.8m) • Freedom Won eTower pedestal
Packaging	One eTower 2 per cardboard box (optional accessories packaged separately)
Certificate of Compliance	UN 38.3 / *IEC 62619

*In Progress

Notes to Specification Sheet

1. DoD = Depth of Discharge, max recommended 90% DoD. Max permissible DoD is 100%.
2. Max discharge and charge (current and power) duration - 5 minutes per 30-minute cycle.
3. Refer to eTower warranty document for further details.
4. Assumed moderate cycling and ideal conditions of temperature, charge and discharge rates, and depth of discharge per cycle.
5. Inverter interface communication cables excluded.

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