

## Gen 5 Turntide NMC Battery Pack Range

Turntide's new lithium-ion modular battery solutions combine high-performance battery packs with system controllers for temperature and voltage measurement and internal cell balancing. The Turntide battery solution provides a flexible and scalable energy storage solution with nominal voltage of 44V and a standardized modular design. They are ideal for many off-highway applications from constructions and agricultural to marine and material handling.



### Features

- Integrated charger controls
- UN38.3 certified: approved for global shipping
- Rated capacity from 4.5 to 6.8 kWh
- Scalable: Increase capacity without additional controllers
- High Voltage: connect modular packs in series for systems up to 455V
- Environmental protection enclosure: fully plastic case (IP65)
- Battery housing to allow ease of mounting on at least 3 axis

### Applications



#### TURNTIDE ELECTRIFICATION

Details are correct at time of publishing

*Turntide Technologies designs and manufactures breakthrough electric motors, power electronics and energy storage solutions that optimize performance, reliability, and efficiency in all things that move.*

Turntide Transport Ltd, Eighth Avenue, Team Valley Trading Estate, Gateshead, NE11 0QA, UK

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# Specification

Key Features			
Nominal Vdc	44V	44V	
Stored Energy (kWh)	4.5	6.8	
Usable Energy (kWh)	4.2	6.3	
Working Voltage Range (V)	37.2 – 50.4	37.2 – 50.4	
Nominal Capacity (Ah)	100	150	
Continuous Charge Current (A)	100*	150*	
10s Peak Charge Current (A)	300*	300*	
Continuous Discharge Current (A)	130*	195*	
10s Peak Discharge Current (A)	300*	300*	
Gravimetric Energy Density (Wh/kg)	173	177	
Volumetric Energy Density (Wh/l)	224	233	
* Dynamically de-rated BMS message over CAN depending on cell condition			
Environmental			
Operating cell temperature	Charge: -10°C to +50°C	IP Rating	IP65
	Discharge: -15°C to +50°C		
Storage Condition	Temperature	Humidity	Duration
	-30 °C to 55°C	<85 RH%	< 7 days
	-30 °C to 30°C	<85 RH%	< 6 months
Safety and Compliance			
Temperature	<ul style="list-style-type: none"><li>• EN 60068-2-1</li><li>• EN 60068-2-2</li><li>• EN 60068-2-14</li><li>• EN 60068-2-30</li></ul>	Shock & Vibration	<ul style="list-style-type: none"><li>• EN 60068-2-64 (Random)</li><li>• EN 60068-2-6 (Sinusoidal)</li><li>• EN 60068-2-27 (Shock)</li></ul>
Transport	<ul style="list-style-type: none"><li>• UN38.3</li></ul>	EMC	<ul style="list-style-type: none"><li>• EN 61000-6-2</li><li>• EN 61000-6-3</li></ul>
Road Electric Vehicles	<ul style="list-style-type: none"><li>• ECE-R100</li></ul>	Battery Regulation	<ul style="list-style-type: none"><li>• CE marking</li></ul>
Safety Requirements for industrial applications †	<ul style="list-style-type: none"><li>• EN62619</li><li>• EN62620</li></ul>		
† Subject to final validation			
Performance Data			
Cycle life (Cell level) ††	<ul style="list-style-type: none"><li>• Over 3000 cycles at 85% capacity retention</li></ul>		
†† Conditions: 1C Step Charge & 1C Discharge 100% DOD, at 25°C			
BMS			
Battery Control Unit (BCU)	<ul style="list-style-type: none"><li>• All battery systems will require a battery control unit</li></ul>	Communications Protocols	<ul style="list-style-type: none"><li>• CAN J1939</li></ul>
Enclosure	<ul style="list-style-type: none"><li>• 15% GF PC/ABS plastic</li></ul>	Mounting Points	<ul style="list-style-type: none"><li>• M8</li></ul>

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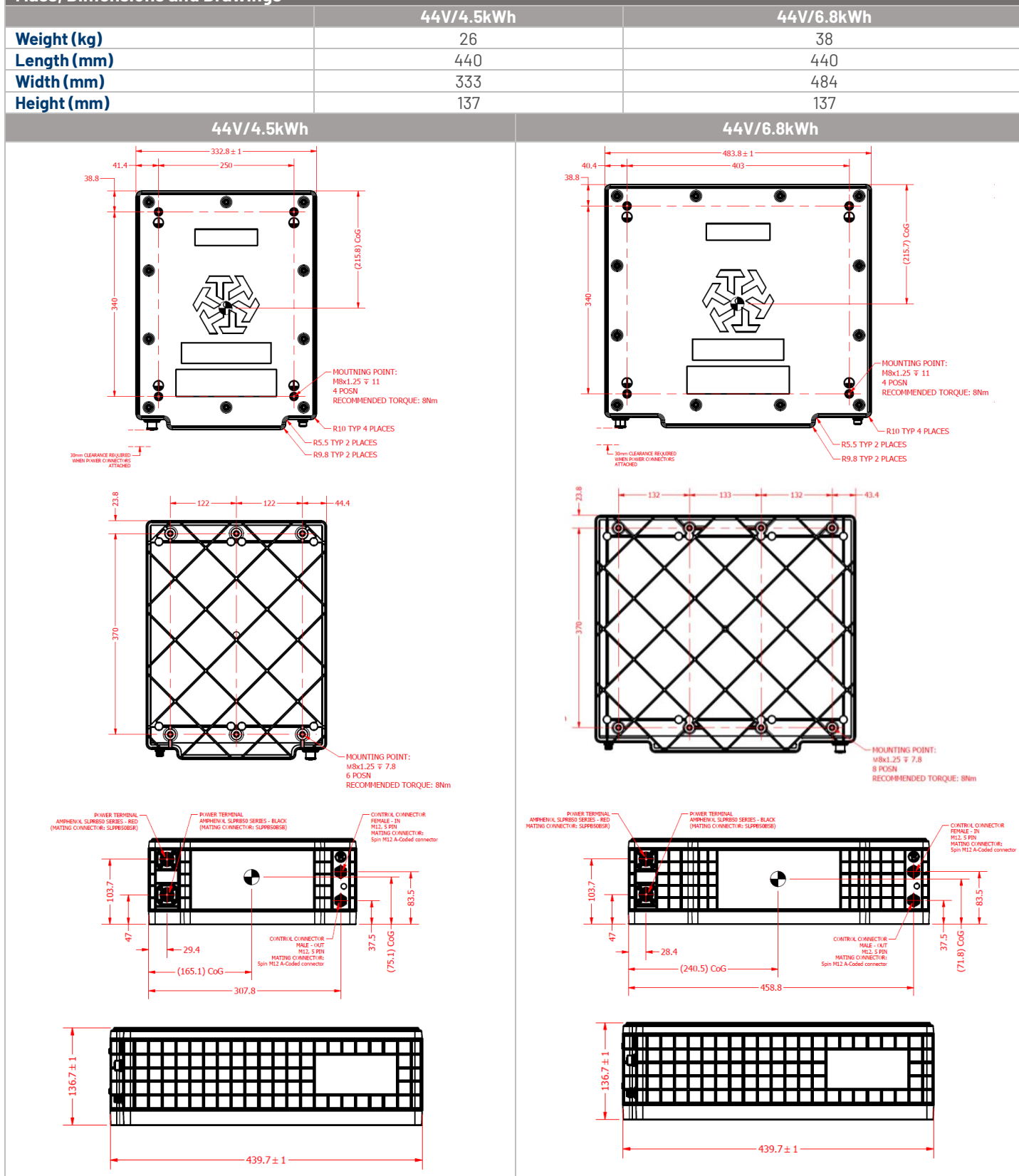
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## Mass, Dimensions and Drawings



For more information on this product or Turntide's range of inverters, motors, batteries, pumps and fans, please visit our web-site or contact our team of experts at [electrificationsales@turntide.com](mailto:electrificationsales@turntide.com).

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