



DATASHEET

# BlueTray™ 4000

Rack-Mounted Battery Pack



## Features



### High Power

Up to twice the power of lead acid with full discharge in as fast as 30 seconds.



### Long Life

Battery life exceeds rack life— >50,000 cycles.



### Sustainable

No lead, acid, rare-earth metals, or conflict minerals. No thermal runaway.

## Safe, high-power, long-life sodium-ion battery for critical power applications.

- Safe by design—constructed using safe, commodity materials
- Lower CAPEX and improved 5-year TCO compared to traditional batteries
- Significantly improves PUE (Power Usage Effectiveness)—no dedicated cooling required
- 0-99% SOC (State of Charge) in 8 minutes means quick return to service (for peak shaving, software defined power and other high cycle-rate applications)
- Sits at float charge indefinitely with no adverse effects
- 10x faster cycling ensures consistent availability
- Frequent rapid charging does not affect battery performance
- Half the footprint of lead acid batteries
- **UL 9540A cell test results show no thermal runaway\***

\*Full UL report available upon request

## For Critical Power Applications



### UPS

Data Centers, IT / Network closets, Industrial and other mission critical sites.



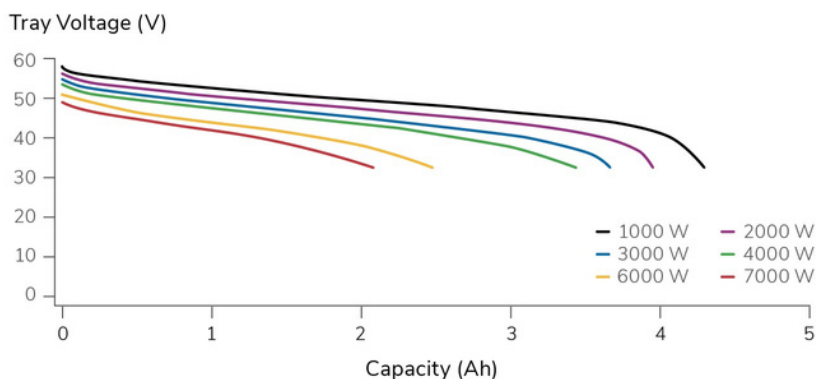
### Telecom

Base Stations, 4/5 G, Edge, Fiber, Cable Landing Stations, and backup power for on and off-grid sites.

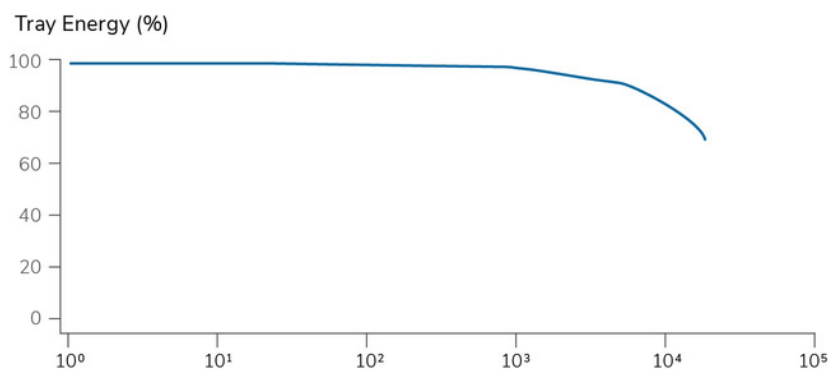
## UL 9540A Cell Test Results

Test	Method	Thermal Runway
1	Short circuit	Not observed
2	Heating	Not observed
3	Nail penetration	Not observed
4	Overcharge	Not observed

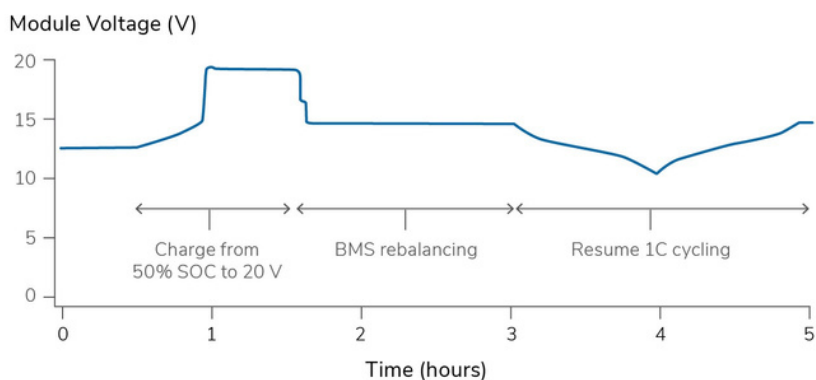
## Discharge Performance



## Cycle Life, >90% Energy Utilization



## Voltage During Overcharge Test



## Specifications

### Performance

<b>Run Time, Load</b>	30 sec	5.7 kW
	1 min	5.5 kW
	2 min	4.0 kW
	3 min	3.1 kW
	5 min	2.0 kW
<b>0-99% Recharge Time</b>	8 min	
<b>Energy, 1 hour</b>	0.27kWh	
<b>Capacity, 1 hour</b>	5.6 Ah	
<b>Energy Efficiency (1C-1C)</b>	>90%	
<b>Coulombic Efficiency (1C-1C)</b>	>93%	
<b>Cycle Life (90% Energy Utilization)</b>	>25,000	

### Thermal

<b>Operating Temperature Range</b>	-20° to 40° C
<b>Survival Temperature Range (1 hr)</b>	-20° to 50° C

### Mechanical

<b>Form Factor</b>	1U Tray
<b>Enclosure Dimensions (H x W x D)</b>	43.7 x 431 x 600 mm
<b>Rail Mount Width</b>	483 mm
<b>Mass</b>	22 kg

### Electrical

<b>Nominal Voltage</b>	50.3 V
<b>Recommended Float Voltage</b>	58 to 59.5 V
<b>Operating Voltage Range</b>	32 to 59.5 V
<b>Survival Voltage Range</b>	0 to 80 V
<b>Maximum Discharge Current</b>	142 A
<b>Maximum Charge Current</b>	72 A

### Monitoring and Communications

<b>State of health monitoring</b>	
<b>Precision cell voltage and temperature monitoring</b>	
<b>Supported communication protocols</b>	Modbus RTU

### Safety Certifications\*

<b>Completed</b>	UL 1973 cells; Certified UL 9450A for cells: No thermal runaway UL 1973 Listed complete battery UL 991 Listed complete battery
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\*Full UL report available upon request

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