

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

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

For Critical Power Applications



UPS

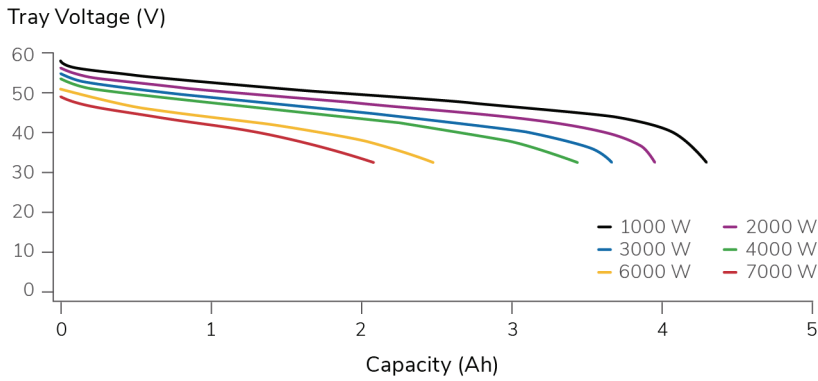
Data Centers, IT / Network closets, Industrial and other mission critical sites.



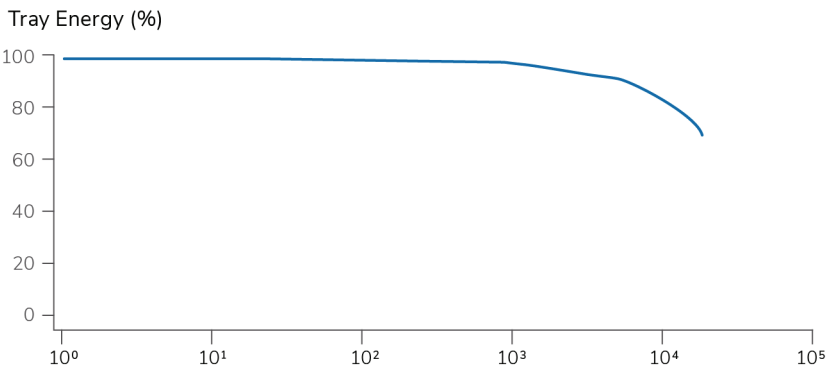
Telecom

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

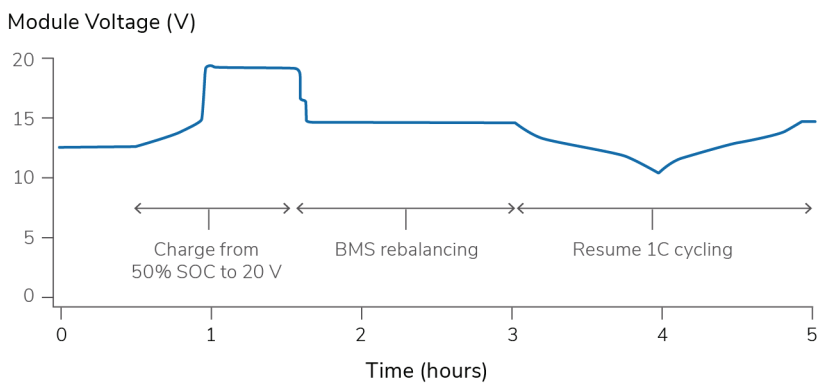
Discharge Performance



Cycle Life, >90% Energy Utilization



Voltage During Overcharge Test



Additional Information

<https://natron.energy/resources/resource-library>

Specifications

Performance

Run Time, Load	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

0-99% Recharge Time	8 min
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Energy, 1 hour	0.27kWh
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Capacity, 1 hour	5.6 Ah
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Energy Efficiency (1C-1C)	>90%
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Coulombic Efficiency (1C-1C)	>93%
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Cycle Life (90% Energy Utilization)	>25,000
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Thermal

Operating Temperature Range	-20° to 40° C
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Survival Temperature Range (1 hr)	-20° to 50° C
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Mechanical

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

Nominal Voltage	50.3 V
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Recommended Float Voltage	58 to 59.5 V
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Operating Voltage Range	32 to 59.5 V
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Survival Voltage Range	0 to 80 V
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Maximum Discharge Current	142 A
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Maximum Charge Current	72 A
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Monitoring and Communications

Sate of health monitoring	
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Precision cell voltage and temperature monitoring	
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Supported communication protocols	Modbus RTU
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Safety Certifications*

Completed	UL 1973 cells; Certified UL 9450A for cells; No thermal runaway
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UL 1973 Listed complete battery
UL 991 Listed complete battery

*Full UL report available upon request

Updated: 10.09.20