



Alchemi

SuperTitan™ Battery

SuperTitan™ Battery



- > 1.9 kWh of enduring storage
- > 15,000 cycle lifetime
- > 25 years of performance
- > Charge/Discharge up to 5C

Available as:

55V 34Ah or 2.5V 750Ah



Dimensions

780 x 440 x 270 mm

Description

The Alchemi SuperTitan™ battery features a proprietary spinel superconductor oxide core which offers the battery incredible charge and discharge capabilities with an unprecedented performance lifetime of up to 25 years.

This Alchemi SuperTitan™ Battery Module has been designed as a modular, cost-effective, sustainable, bankable and long lasting solution to your energy storage needs.

This battery can reliably cycle for decades while preventing issues such as capacity fade, sulphation, overheating, memory effect, short lifetime, underperformance, and other battery issues. Additional features include IoT capabilities with an open-source protocol.

Features

- Cycle-life of 15,000+ cycles (25°C) at 100% depth-of-discharge.
- Charge/discharge capability of 5C
- Extreme operational temperatures: -40°C to 60°C
- Calendar life of 25 years
- Achieve up to 6000+ cycles at 45°C ambient
- No thermal runaway or overheating issues. Can be passively cooled.
- Safest battery of Class 9 classification
- Modular design, vertically stackable up to 10 units.



UPS/BATTERY



EV



INDUSTRIAL



MARINE



TELECOMMS



NETWORKING



MEDICAL



AUTOMATION



MILITARY



GOLF CART



THE COMPETITIVE LANDSCAPE

	Lead Acid / Gel / AGM	Lithium Phosphate	Leading NMC Lithium	Flow Battery	SuperTitan™
Usable capacity	50 - 70%	70 - 90%	96%	100%	100%
Battery charging temperature	-20°C / +40°C	0°C / 40°C	0°C / + 30°C	+10°C / +35°C	-40°C / +60°C
Max power (C-rate)	< 3C	< 3C	< 0.35C	< 4C	< 5C
Cyclelife 25°C	1,500	3,000	3,200	10,000	> 15,000
Cyclelife 45°C	500	1,000	1,200	10,000	> 6,000
Degradation per year	3%	6%	4.4%	6%	0.4%
Usable lifetime (daily use)	< 5 years	< 7 years	< 8 years	< 20 years	< 25 years
Swaps during solar panel life	6 retrofits	4 retrofits	4 retrofits	No replacement	No replacement
Application	Legacy	Electric vehicles	Electric vehicles	Energy Storage	Energy Storage
Safety	Toxic	Medium	Unsafe	Toxic	Safest in class
Disposal cost	Recyclable	High	High	Very High	Deferred
Warranty	Up to 3 year	10 year, 40% loss	8 year, 30% loss	10 year, 0% loss	Up to 15 year, 10% loss
Warrantied kWh cost	\$0.23/kWh	\$0.15/kWh	\$0.23/kWh	\$0.85/kWh	\$0.07/kWh
LCOE*	\$0.16/kWh	\$0.13/kWh	\$0.19/kWh	\$0.34/kWh	\$0.05/kWh



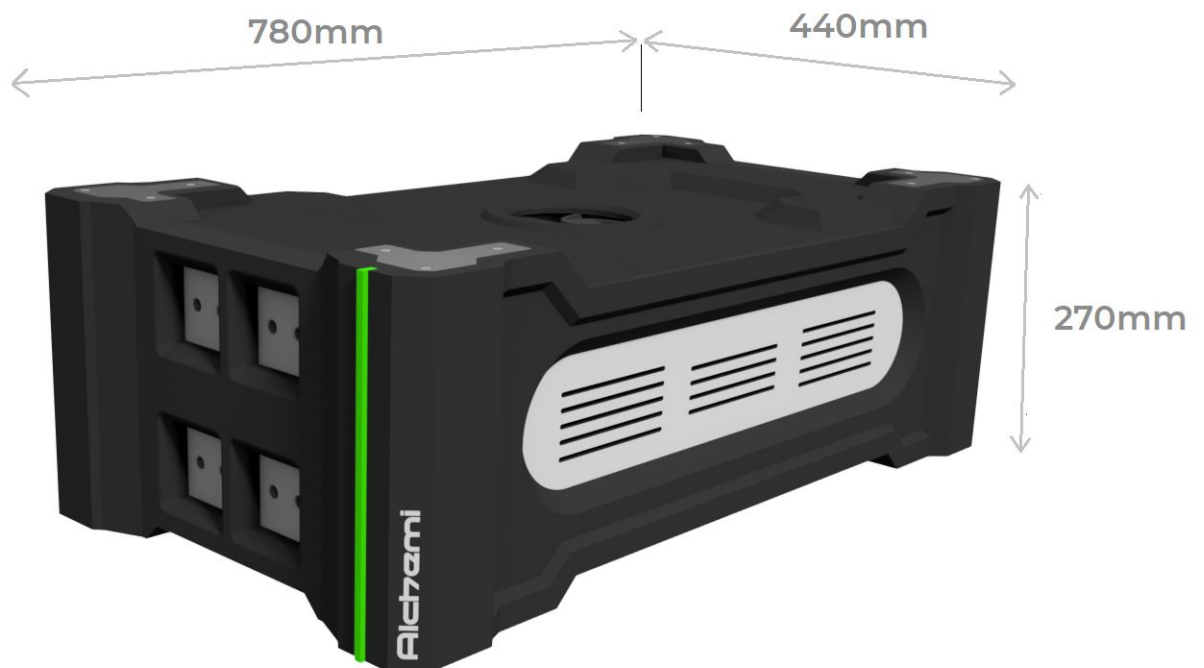
TECHNICAL SPECIFICATIONS

MODEL:		SuperTitan™ 55V	SuperTitan™ 2.5V
OUTPUT	CHEMISTRY	Titanium Superconductor	
	BATTERY VOLTAGES	55V Nominal	2.5V Nominal
	CAPACITY	1.9 kWh (34 Ah)	1.9 kWh (750 Ah)
	MAXIMUM VOLTAGE	59.4 VDC	2.7V
	VOLTAGE TOLERANCE	+- 1.0 %	
INPUT	RECOMMENDED CHARGE VOLTAGE	59.4 VDC	2.7V
	RECOMMENDED CHARGE CURRENT	34A (1C)	750A (1C)
	CHARGING RIPPLE	Less than 50 mV	Less than 10mV
	ROUND TRIP EFFICIENCY	>85% Efficient (0 - 100% SOC) >90% Efficient (20 - 80% SOC)	
	MAX INPUT CURRENT	170A (5C)	1000A (10s)
BMS PROTECTIONS	OVERLOAD	>170A	>1000A
	OVER TEMPERATURE	> 60°C	
	OVER VOLTAGE	>62V	>2.8V
	BALANCING	Active Balancing	Active Balancing
	LOW VOLTAGE	< 39V DISCONNECT	<1.6V
OPERATING ENVIRONMENT	WORKING TEMP.	- 40 °C to +60 °C (recommend -5°C to 35°C)	- 40 °C to +60 °C (recommend -5°C to 35°C)
	STORAGE SOC	40-60%	40-60%
	STORAGE TEMP.	- 5°C to + 30°C	- 5°C to + 30°C
SAFETY	SAFETY TESTS	Overdischarge, Overcharge, Short circuit, 1.5m Droptest, Heattest 130°C, Stress test cycling from -40°C to 85°C, Crush tests of 200kN, Puncture tests, Salt water immersion, Low	Overdischarge, Overcharge, Short circuit, 1.5m Droptest, Heattest 130°C, Stress test cycling from -40°C to 85°C, Crush tests of 200kN, Puncture tests, Salt water immersion, Low



		pressure test, UN38.3 pending	pressure test, UN38.3 pending
OTHER	LIFETIME	>25 years at 25°C	
	UNIT WEIGHT	52 kg	52kg
	SHIPPING WEIGHT	55 kg	
	DC CABLE	BUSBAR LINK	
	CASING TYPE	Enclosure	
	PACKING	1 pcs/box, 24pcs/pallet	

DIMENSIONS:



**More details available upon request.*

The SuperTitan™ MODU-TEK:

The Alchemi Modu-TEK™ energy storage stacking method is a cost effective, sustainable and scalable solution to expanding your battery pack capacity. Units can be stacked vertically up to 10 units high and are connected with our standard bus bar connector.



KEY FEATURES:

- Modular Expansion up to 2MWh+
- Easy installation and assembly
- High-voltage or -current config
- Low-resistance busbar design
- Proprietary stacking technology
- Eco-friendly enclosure design
- Enclosure is 100% recyclable.
- Enhanced airflow design
- Easy troubleshooting