

Zenaji Eternity

LTO Energy Storage Systems



The Zenaji Eternity Energy Storage System has been developed to meet the growing demand for larger commercial to grid scale energy storage. Starting with a basic building blocks of 36.3 - 44.9 kWh the system is scalable for commercial users up to the megawatts of power needed by utility power companies.

The ultra-long life of the Eternity makes it the lowest cost per kilowatt hour of energy stored and retrieved over its lifetime, of any Lithium Ion solution currently available. Further, the Eternity takes full advantage of the incredible charge and discharge characteristics of the Titanate chemistry along with its enhanced safety features and ability to operate in hot and cold climates.

Commercial Solutions

- Light Commercial / Industrial
- Larger Residential
- Telecommunications
- Emergency / Portable Power
- Large Scale UPS
- Data / Processing Centres
- Farming and Micro-grid

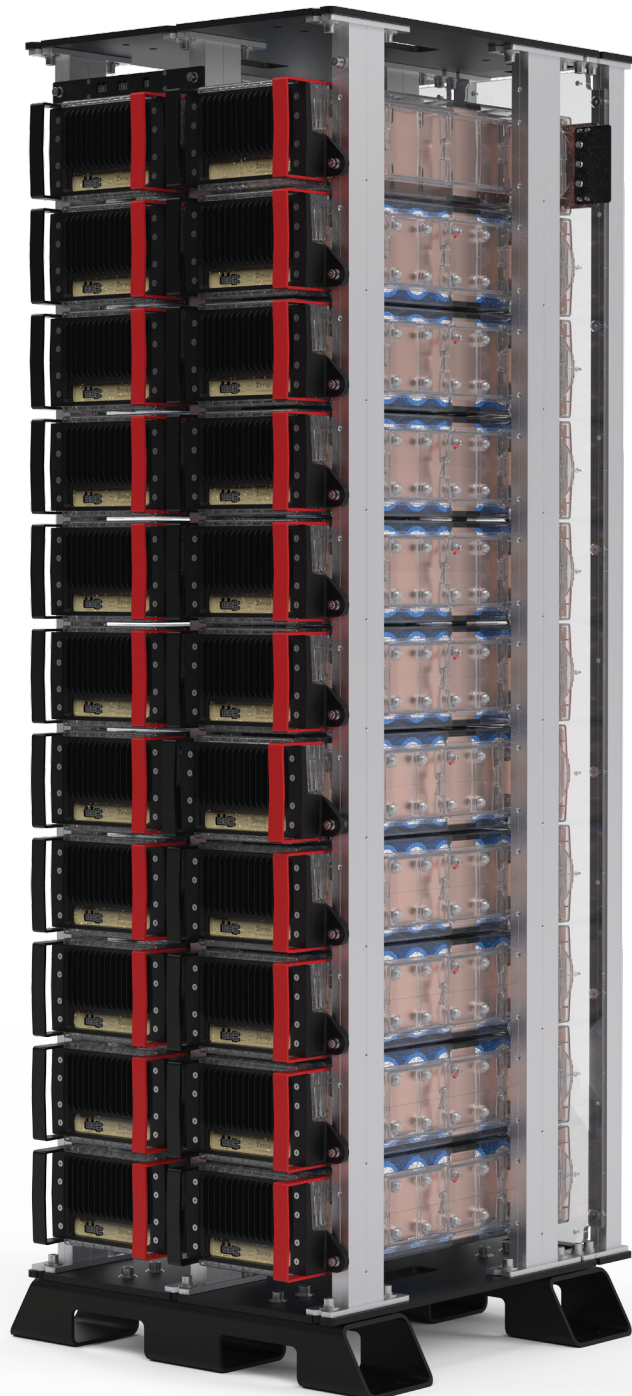
Industrial Solutions

- **36.3 to 44.9 kWh Battery Rack Unit**
 - **Temperatures -40° to 60°C**
 - **Fully scalable from Kilowatts to Megawatts**
 - **Easy to install**
 - **Huge surge current capability**
 - **Long Service life**
 - **Ultra Safe**
 - **CANBUS Battery System Communications**
 - **Systems can be configured in Series or Parallel**
-
- Solar Farms
 - Wind Farms
 - Communities / Substation
 - Utility / Grid backup
 - Peak Smoothing

Contact Us

Zenaji Pty. Ltd.
Australia: +61 448 818 857
International: +61 418 104 496
2 Shearson Cres, Mentone, Victoria 3194
info@zenaji.com

www.zenaji.com



Eternity Battery Specifications

Eternity Module Configuration	21 Modules	22 Modules	24 Modules	26 Modules
Nominal Capacity (25°C ± 5°C)	33.94	35.55	38.78	42 kWh
(Useable Capacity) (kWh)				
Duty Cycle	10 cycles per day			
Cell Cycle Life	22,000 cycles warranted to ≥80% capacity retention			
Depth of Discharge	100% in ideal conditions, recommend 95% for most conditions			
Round Trip Efficiency (1C, 25°C ± 5°C)	97.5%			
Rated DC Charge/Discharge Current (25°C ± 5°C) (A)	619 A			
Rated DC Charge/Discharge Power (25°C ± 5°C) (kW)	33.94 kWh	35.55 kWh	38.78 kWh	42 kWh
Max DC Charge/Discharge Current (10s, 25°C ± 5°C) (A)	1857 A			
Max DC Charge/Discharge Power (10s, 25°C ± 5°C) (kW)	33.94 kWh	35.55 kWh	38.78 kWh	42 kWh
Nominal Charge/Discharge Settings (nominal values only, precise voltages will be installation and inverter dependant and will require testing and tuning per installation conditions)	21 Modules	22 Modules	24 Modules	26 Modules
Nominal Voltage	48.3 V	50.6 V	55.2 V	59.8 V
Bulk Stage Voltage *	54.6 V	57.2 V	62.4 V	67.6 V
Bulk Stage Current	600 A †			
Absorption Stage Voltage	56.7 V	59.4 V	64.8 V	70.2 V
Absorption Stage Current	35 A			
Float Stage Voltage	55.3 V	58.0 V	63.3 V	68.6 V
Float Stage Current	1 - 5 A			
High Cut-off Voltage (Module alarm voltage)	57.7 V	60.5 V	66.2 V	71.8 V
Discharge Cut-off Voltage (Low Cut-off Voltage)	42.0 V	44.0 V	48.0 V	52.0 V
Low Restart Voltage (Reconnect Voltage)	46.0 V	48.0 V	52 V	56.0 V
Battery Information	21 Modules	22 Modules	24 Modules	26 Modules
Chemistry	LTO (Lithium Titanate)			
Continuous C-Rate	1C			
Pulse C-Rate (30sec pulse)	3C			
Voltage Class	Extra-Low Voltage (<120V DC)			
Nominal DC Voltage (V)	48.3 V	50.6 V	55.2 V	59.8 V
Minimum DC Voltage (V)	42.0 V	44.0 V	48.0 V	52.0 V
Maximum DC Voltage (V)	57.2 V	60.0 V	65.7 V	71.3 V
Battery Short Circuit Current (kA)	27.2 kA			
Key Features	21 Modules	22 Modules	24 Modules	26 Modules
Zenaji Eternity LTO Battery Management System	Internal cell balancing, failure detection and trip. Under-Voltage, Over-Voltage, Over-Temp, Under-Temp protection and trip			
Recommended Inverters	Selectronic SP PRO Series 2i, Schneider Conext XW+			
Communications	CANBUS (battery system only, inverter communications in development)			
Mechanical Information	21 Modules	22 Modules	24 Modules	26 Modules
Package Format	Single Rack Unit			
Weight (kg)	750 kg	785 kg	857 kg	928 kg
Dimensions (m) (W x D x H)	.73m x .84m	1.97m	1.97m	2.17m
Cable Entry	Top			
Ingress Rating	Module - IP55, Rack - IP21			

* May be varied depending on charge current. Higher bulk voltage for lower charge current, Lower bulk voltage for higher charge current

† If using 630A Noark Breaker. This will need to be adjusted based on DC ripple of Inverter.

Ambient Conditions	21 Modules	22 Modules	24 Modules	26 Modules
Operating Temperature (°C)	-40°C to 60°C (recommended 5°C to 35°C)			
Optimal temperature (°C)	25 ± 5°C			
Storage Temperature	-5 to 35°C			
Installation	Indoors, Non-Habitable			
Certification & Compliance	21 Modules	22 Modules	24 Modules	26 Modules
Certifications	UN38.3, UL 1973, UL 508C, CE			
Compliance	UL1642, UNDOT 38.3, IEC 62477-1, NFPA 70E, IEC 50110, ASTM4169, IEEE 605, IEEE C37.32, AS 62619, AS 62040			
Warranty	10 Years or 22,000 cycles, whichever comes first, see warranty document for details			
Arc Flash Protection	PPE Level 1 Required			
Module Specifications	Specifications			
Module Battery Configuration	16p			
Capacity (Ah)	768 Ah			
Nominal Voltage (V)	2.25			
Maximum Voltage (V)	2.8 V			
Minimum Voltage (V)	2 V			
Weight (kg)	26 kg			

