

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 block of 29.8 or 31.3 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

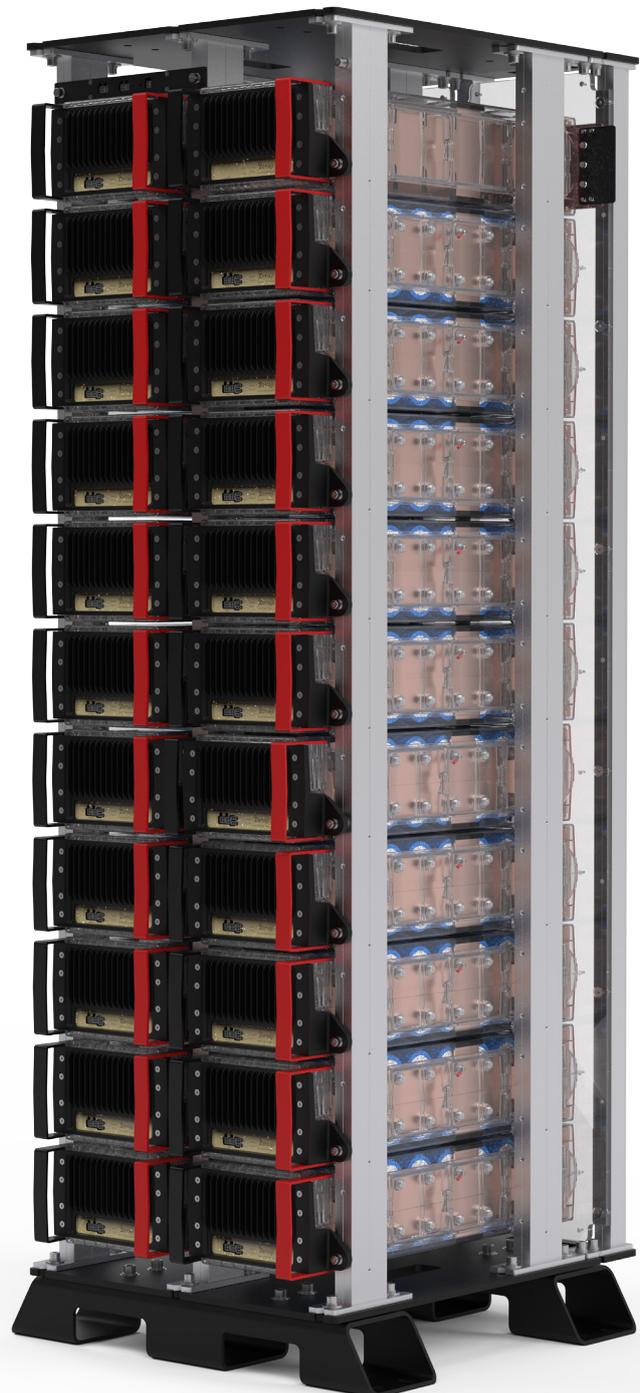
- Solar Farms
- Wind Farms
- Communities / Substation
- Utility / Grid backup
- Peak Smoothing

- **29.8 kWh or 31.3 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**

Contact Us

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Eternity Battery Specifications

Eternity Module Configuration	21 Module	22 Module
Nominal Capacity (25°C ± 5°C)	29.8 kWh	31.3 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)	96%	
Rated DC Charge/Discharge Current (25°C ± 5°C) (A)	619 A	
Rated DC Charge/Discharge Power (25°C ± 5°C) (kW)	29.8 kW	31.3 kW
Max DC Charge/Discharge Current (10s, 25°C ± 5°C) (A)	1857 A	
Max DC Charge/Discharge Power (10s, 25°C ± 5°C) (kW)	89.6 kW	93.9 kW
Nominal Charge/Discharge Settings <small>(nominal values only, precise voltages will be installation and inverter dependant and will require testing and tuning per installation conditions)</small>	21 Module	22 Module
Nominal Voltage	48.3 V	50.6 V
Bulk Stage Voltage	53 V	56 V
Bulk Stage Current	40 A	
Absorption Stage Voltage	54 V	57.2 V
Absorption Stage Current	35 A	
Float Stage Voltage	52.4 V	55 V
Float Stage Current	35 A	
High Cut-off Voltage	58.7 V	60.3 V
Discharge Cut-off Voltage (Low Cut-off Voltage)	42 V	44 V
Low Restart Voltage (Reconnect Voltage)	44 V	46 V
Battery Information	21 Modules	22 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
Minimum DC Voltage (V)	42.0 V	44.0 V
Maximum DC Voltage (V)	58.8 V	61.6 V
Battery Short Circuit Current (kA)	27.2 kA	
Key Features	21 Modules	22 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
Package Format	Single Rack Unit	
Weight (kg)	750 kg	776 kg
Dimensions (m) (W x D x H)	.73 x .8 x 1.97m	
Cable Entry	Top	
Ingress Rating	Module - IP55, Rack - IP21	

Ambient Conditions	21 Modules	22 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
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)	640 Ah	
Nominal Voltage (V)	2.3 V	
Maximum Voltage (V)	2.8 V	
Minimum Voltage (V)	2 V	
Weight (kg)	26 kg	

