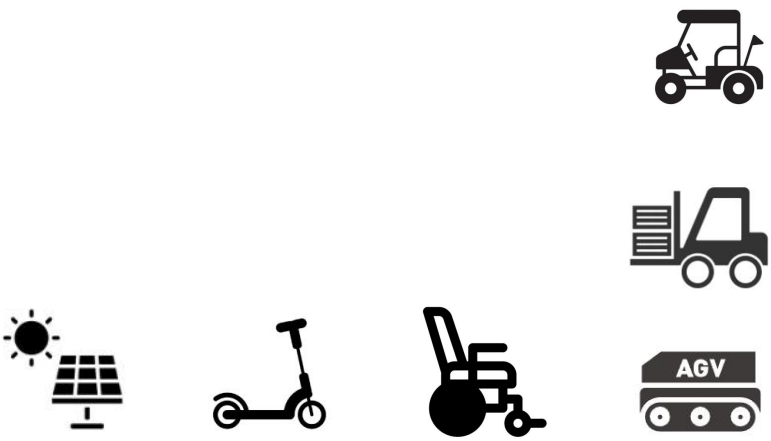
ENOV (HUIZHOU) NEW ENERGY TECHNOLOGY CO., LTD

MODEL
EN12-2000FE

LITHIUM ENERGY
STORAGE BATTERY

PRODUCT DATA SHEET



MODEL： EN12-2000FE

INTRODUCE

With high safety, long life and wide temperature range as the core advantages, the 85 ℃ battery storage is normal, the capacity retention rate of 2000 cycles at room temperature is ≥95%, and the capacity retention rate of 8000 cycles at room temperature is ≥80%, which can adapt to the extreme environment of -20℃ to 75℃. The products are widely used in new energy vehicles, energy storage power stations, industrial equipment and emergency power supplies and other fields, to provide power energy solutions for global customers with large-scale production and customized services.

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SPECIFICATIONS

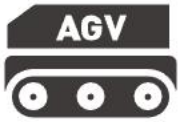
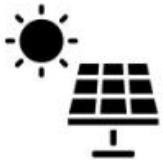
MODEL	EN12-2000FE
VOLTAGE（V）	12.8
CAPACITY (Ah)	200.0
RATED CAPACITY (Wh)	2560
DIMENSIONS SIZE (L*W*H)mm	522 * 240* 218
WEIGHT（Kg）	20

——OEM or ODM is available

PRODUCT CHARACTERISTICS

- **High power density:** Support fast charging and discharging to meet acceleration needs.
- **Long cycle life:** The capacity retention rate of 2000 cycles at room temperature is ≥95%, and the capacity retention rate of 8000 cycles at room temperature is ≥80%.
- **Wide temperature range adaptive system:**The battery can adapt to the extreme environment of -20℃ to 75℃.

APPLICATION SCENARIO

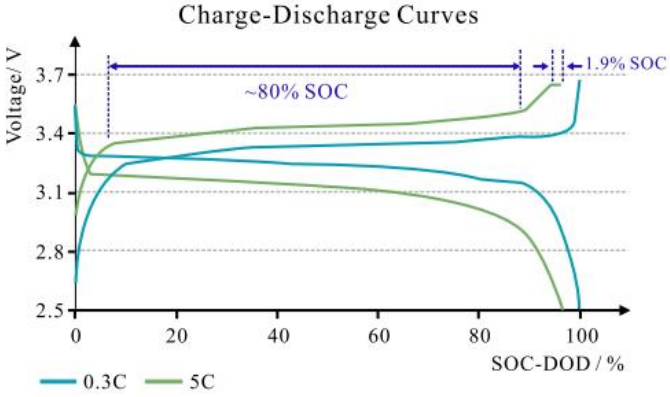
		
ELECTRIC FORKLIFT	**WHEELCHAIR**	**SCOOTER**
		
GOLF CART	**AGV**	**SOLAR ENERGY STORAGE**

BATTERY CELL PERFORMANCE TEST(LFP)

◆ BASIC CHARGE AND DISCHARGE

Test method a: At room temperature, 0.3C constant current constant voltage charge to 3.68V, cut-off current is 0.05C; Constant discharge at 0.3C to 2.5V.

Test method b: At room temperature, 5C was charged to 3.68V with constant current and constant voltage, and cut-off current was 0.05C. Constant discharge at 5C to 2.5V.

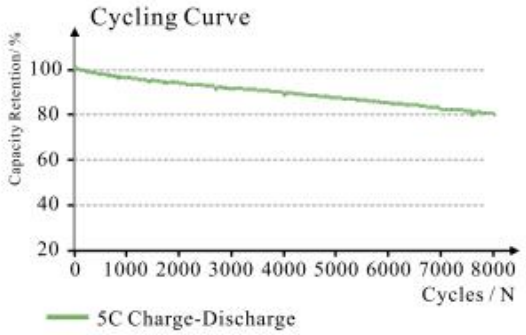


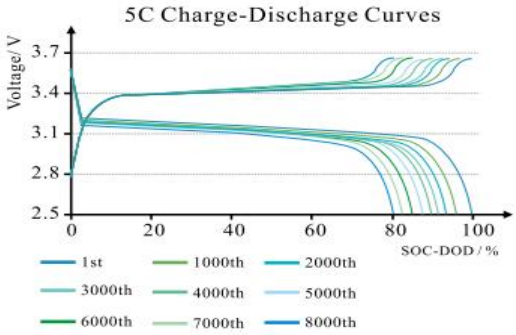
Item	0.3C Charging Capacity /mAh	0.3C Discharge Capacity /mAh	0.3C Charging Capacity /mAh	0.3C Discharge Capacity /mAh	Charging Capacity ratio/%	Discharge Capacity ratio/%
					5C/0.3C	5C/0.3C
Test value	8661	8659	8354	8344	96.5	96.4

◆ NORMAL TEMPERATURE CYCLE

Test method (5C charge 5C release):

①5C constant current constant voltage charge to 3.65V, cut-off current is 0.05C; ② Let it stand for 15min; ③5C constant current discharge to 2.5V; ④ Cycle 1 ~ 3 work steps 8000 times.



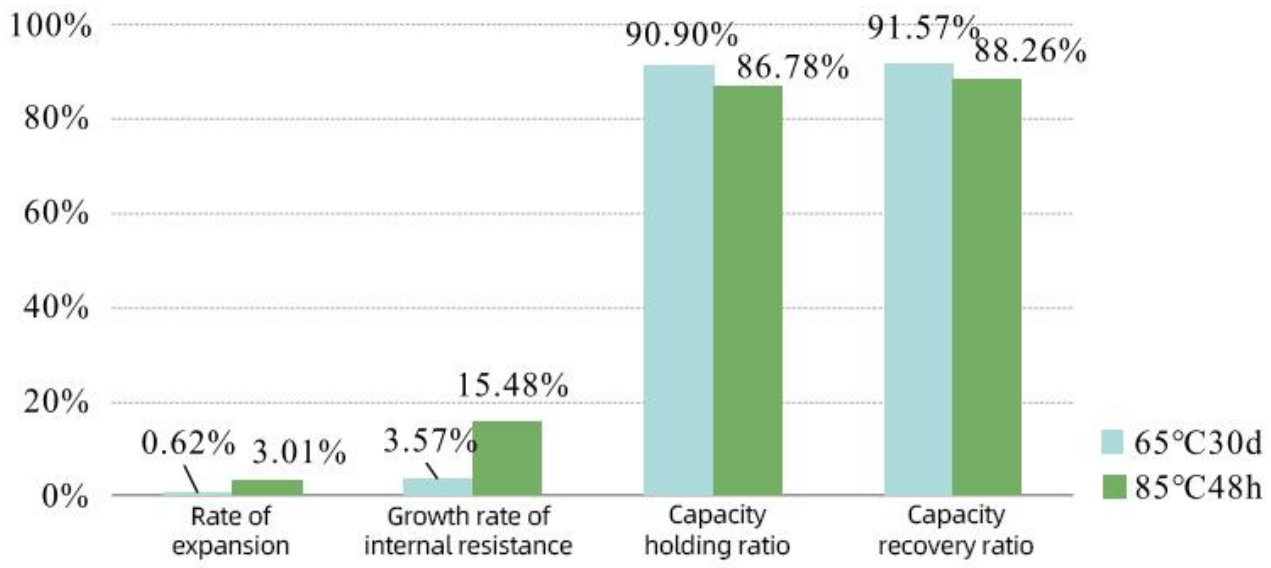


Cycle number	1	500	1000	2000	3000	4000	5000	6000	7000	8000
Capacity /mAh	8332.2	8182.8	8038.5	7829.0	7649.8	7494.3	7306.8	7102.6	6885.2	6702.8
Capacity retention rate /%	100.0	98.2	96.5	94.0	91.8	89.9	87.7	85.2	82.6	80.4
Median voltage /V	3.14	3.15	3.15	3.15	3.14	3.15	3.14	3.13	3.11	3.11

BATTERY CELL PERFORMANCE TEST (LFP)

◆ HIGH TEMPERATURE STORAGE

Test method: 0.5C constant current constant voltage charge to 3.68V, cut-off current 0.05C; After storage at 65℃ for 30d and 85℃ for 48h, the current was discharged to 2.5V at 1C. Then charge 1C at 0.5C, cycle 3 times, record the internal resistance, thickness and capacity of the battery before and after storage.



Item	prestorage			After high-temperature storage			
	Cell thickness /mm	ACR /mΩ	Capacity /mAh	Cell thickness /mm	ACR /mΩ	First release capacity /mAh	Cyclic capacity three times /mAh
60℃@30d	8.02	0.84	8414	8.07	0.87	7648	7705
85℃@48h	7.98	0.84	8472	8.22	0.97	7352	7477

Item	Rate of change			
	Expansion rate	Growth rate of internal resistance	Capacity retention rate	Capacity recovery rate
60℃@30d	0.62%	3.57%	90.90%	91.57%
85℃@48h	3.01%	15.48%	86.78%	88.26%

WARRANTY PERIOD OF CELL

Enov provides a one-year warranty on the battery (starting from the date of manufacture). During the warranty period, if there is a performance failure or complete failure of the battery caused by non-human, it is confirmed by our technical department that it is a quality problem such as raw material defects and production process defects, and there is no abnormal use such as private disassembly, improper storage (ambient temperature over 60℃ or below -20℃), physical impact, liquid immersion, etc. Customers can apply for free replacement of new battery units of the same model through the official customer service channels with valid purchase vouchers and complete product serial number labels.

STORAGE AND SHIPMENT REQUIREMENT

Item	Requirement	Remark
Storage temperature	≤1 month:-20℃~45℃ ≤3 month:-20℃~30℃ ≤1 year:23±2℃	The best temperature in shipment is 23±5℃
Humidity	≤75%RH	/
Charged Capacity	50%-100%	Voltage13.2-14.6V

1.The storage temperature should be controlled at -20℃~40℃, away from open flame, corrosive substances and humid environment.

2.Do not charge in a sealed, high temperature (> 40℃) or low temperature (< -5℃) environment to avoid abnormal reaction of the electrolyte.

3.Do not reverse connect the positive and negative terminals; otherwise, short circuit or device damage may occur.

4.If the volume of the lithium battery is smaller than that of the original battery, secure the battery using the provided base or foam to ensure stable installation.

5.When storing, it is important to avoid external vibrations and colisions as much as possible toavoid short circuits inside the battery or damage to the metal casing.

USE WARNINGS AND CAUTIONS

WARNINGS!

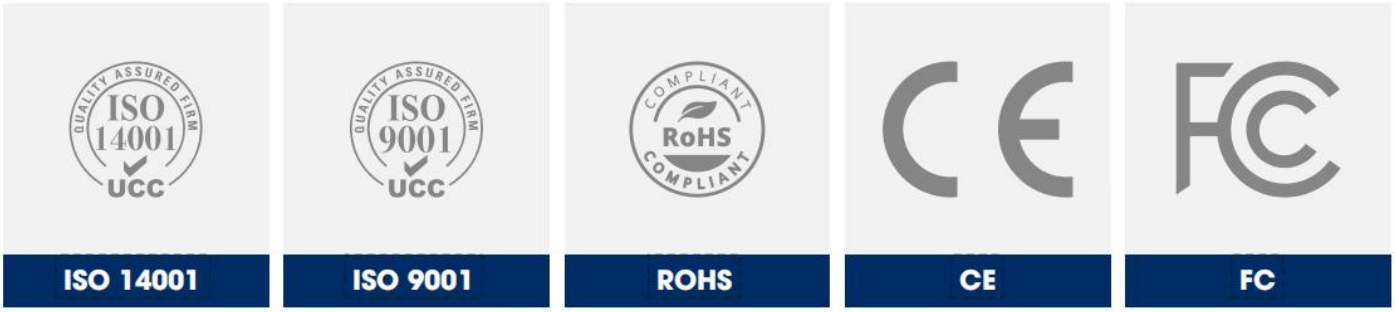
The cell will fire, explode or leak if not strictly observing this item described below.

- Do not immerse the cell in water or seawater, and keep the cell in a cool dry environment during stands by period.
- Do not mix using the cell with one-off cell (such as dry cell) or different performance together.
- Keep all batteries out of the reach of little children. Consult a doctor immediately if a cell is swallowed.
- Do not use or leave the cell near a heat source such as fire or heater
- When re-charging , use the cell charger specifically for that purpose.
- Do not reverse the positive (+) and negative (-) terminals.
- Do not connect the cell to an electrical outlet.
- Do not dispose the cell in fire or heat.
- Do not short-circuit the cell by directly connecting the positive (+) and negative (-) terminals with metal objects such as wire.
- Do not transport or store the cell together with metal obiects such as necklaces, hairpins etc.
- Do not strike or throw the cell against hard surface.
- Do not directly solder the cell .
- Dot not pierce the cell with a nail or other sharp object.
- Never disassembling the cell in any way.

CAUTIONS!

- Do not use or leave the cell at very high temperature (for example, at strong direct sunlight or in a vehicle in extremely hot weather). Otherwise, it can overheat or fire or its performance will be degenerate and its service life will be shortened.
- Do not use it in a location where static electricity is rich, otherwise, the safety devices may be damaged, causing a harmful situation.
- In case the electrolyte getting into the eyes due to the leakage of cell, do not rub the eyes! Rinse the eyes with clean running water, and seek medical attention immediately. Otherwise, it may injure eyes or cause a loss of sight.
- If the cell gives off an odor, generates heat, becomes discolored or deformed, or in anyway appear abnormal during use, recharging or storage, immediately remove it from the device or cell charger and place it in a contained vessel such as a metal box.
- In case the cell terminals are contaminated, clean the terminals with a dry cloth beforeuse. Otherwise power failure or charge failure may occur due to the poor connection between the cell and the electronic circuitry of the instrument.
- Be aware discarded batteries may cause fire, 100%discharged the cell and tape the cell terminals to insulate them before disposal.

CERTIFICATION



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