



ENOV (HUIZHOU) NEW ENERGY TECHNOLOGY CO., LTD

MODEL EN-50A043H-EXE

**EXTRA HIGH ENERGY
SEMI-SOLID BATTERY**
PRODUCT DATA SHEET





MODEL: EN-50A043H-EXE

INTRODUCE

Ultra-clear high-energy semi-solid battery is a new technology battery for UAV. It has lightweight structure design, ultra-high energy density, stable continuous discharge, standard instantaneous discharge, wide temperature range stable charge and discharge, and the combination of high nickel ternary positive/silicon carbon negative material system of semi-solid battery technology, which is the best battery choice for a variety of UAV.









MODEL	EN-50A043H-EXE
CAPACITY(mAh)	50000
VOLTAGE (V)	43.8
DIMENSIONS SIZE (L*W*H)mm	184*77*261 184*155*131
CONT. DISCHARGE CURRENT	150A/3C
MAX DISCHARGE CURRENT	500A/10C
WEIGHT (KG)	7.28
ENERGY DENSITY (WH/KG)	301

—OEM or ODM is available

PRODUCT CHARACTERISTICS

- ◆ Continuous Discharge, 3C+
- ◆ Semi-solid Polymer
- ◆ Ultralight, Capacity Increase 20%+
- ◆ Burst Discharge 10C+
- ◆ Ultra-high Energy Density 320Wh/kg+
- ◆ ODM&OEM Acceptable
- ◆ Wide temperature range work well form: -20°C to 60°C
- ◆ Support 2C fast charging: complete charging within 30 minutes

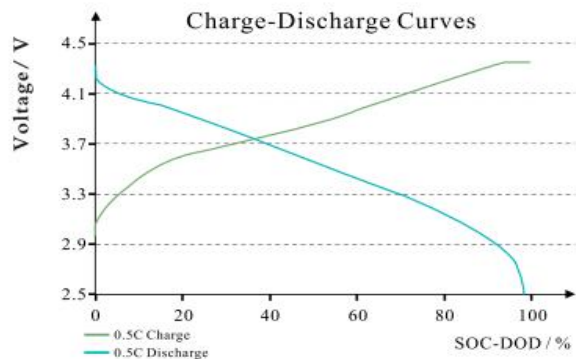
APPLICATION SCENARIO

		
EXPLORATION UAV	eVTOL	WEATHER UAV
		
INSPECTION UAV	MAPPING UAV	SURVEILLANCE UAV

BATTERY CELL PERFORMANCE TEST (LFP)

◆ BASIC CHARGE AND DISCHARGE PERFORMANCE

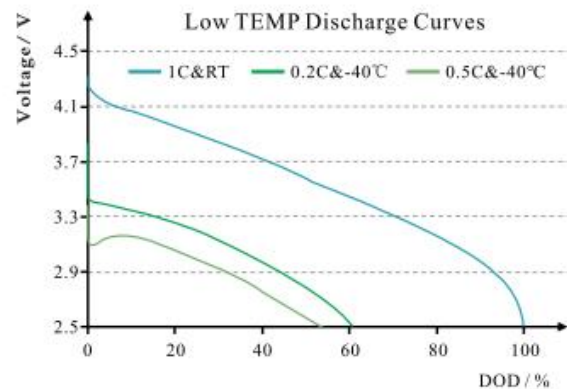
Test method: Under normal temperature, 0.5C constant current constant voltage charge to 4.35V, cut-off current 0.05C; Let it sit for 10min and then drain it to 2.5V at 0.5C.



Item	0.5C charging capacity /Ah	0.5C discharge capacity /Ah	Charge and discharge efficiency /%
Test value	32.1	31.6	98.5

◆ LOW TEMPERATURE DISCHARGE -40°C

Test method: Under normal temperature, 0.5C constant current constant voltage charge to 4.35V, cut-off current 0.05C; At -40°C for 4~6h, and then at 0.2C, 0.5C constant discharge to 2.4V.



Temperat ure	Rate of multiplic ation	Capacit y/Ah	Median voltage /V	Capacity retention rate /%
RT	1C	31.65	3.569	100.00
-40°C	0.2C	19.82	3.103	62.62
-40°C	0.5C	18.43	2.939	58.23

◆ HIGH TEMPERATURE STORAGE

Test method: At room temperature, 0.5C constant current constant voltage charge to 4.2V, cut-off current 0.05C; After being stored at 60°C for 7d, 70°C for 24h and 70°C for 48h, the current was discharged to 3.0V at 1C. Then charge 1C at 0.5C, cycle 3 times, record ACR, thickness, capacity before and after storage.



BATTERY CELL PERFORMANCE TEST (LFP)

◆ RATE DISCHARGE RT

Test method: Under normal temperature, 0.5C constant current and constant voltage charge to 4.35V, cut-off current 0.05C; Put it on for min, and then discharge it to 2.5V at 0.2C, 0.5C, 1C, 3C and 5C.

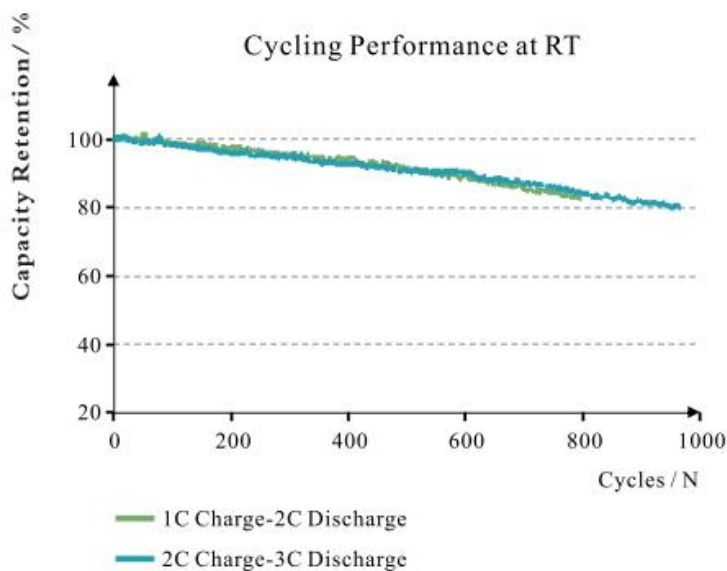


Rate of multiplication	Capacity /Ah	Median voltage /V	Capacity retention rate /%
0.2C	32.22	3.619	100.00
0.5C	31.88	3.603	98.9
1C	31.71	3.569	98.4
3C	31.93	3.430	99.1
5C	31.77	3.339	98.6

◆ LOOP PERFORMANCE RT

Test method a: Under normal temperature, 1C constant current and constant voltage charge to 4.35V, cut-off current 0.05C; leave for 15min, then 2C constant discharge to 2.75V, do cycle test.

Test method a: Under normal temperature, 2C constant current and constant voltage charge to 4.35V, cut-off current 0.05C; leave for 15min, then 3C constant discharge to 2.75V, do cycle test.



Cycle number	1C charge 2C discharge	2C charge 3C discharge
1	100.0	100.0
100	99.0	98.6
200	98.0	95.9
300	95.6	95.1
400	94.6	93.0
500	91.5	91.1
600	89.7	90.3
700	85.8	86.8
800	82.9	84.2
900		81.
1000		80.3(966th)

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°C or below -20°C), 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°C~45°C ≤ 3 month: -20°C~30°C ≤ 1 year: $23 \pm 2^\circ\text{C}$	The best temperature in shipment is $23 \pm 5^\circ\text{C}$
Humidity	$\leq 75\% \text{RH}$	/
Charged Capacity	50%-100%	Voltage 13.2-14.6V
<p>1.The storage temperature should be controlled at -20°C~40°C, away from open flame, corrosive substances and humid environment.</p> <p>2.Do not charge in a sealed, high temperature ($> 40^\circ\text{C}$) or low temperature ($< -5^\circ\text{C}$) environment to avoid abnormal reaction of the electrolyte.</p> <p>3.Do not reverse connect the positive and negative terminals; otherwise, short circuit or device damage may occur.</p> <p>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.</p> <p>5.When storing, it is important to avoid external vibrations and collisions as much as possible to avoid short circuits inside the battery or damage to the metal casing.</p>		

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 objects such as necklaces, hairpins etc.
- ◆ Do not strike or throw the cell against hard surface.
- ◆ Do not directly solder the cell .
- ◆ Do 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 before use. 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



CONTACT US



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