

42Ah Ultra-High Energy Density Solid-State Anode-Free Cell

Key Specifications

Capacity	42Ah	Voltage	3.85V
Model	PE42N-EF	Operating Temp	-43°C to 55°C

Product Overview

Model Number	PE42N-EF
Classification	Anode-Free Cell
Chemical Materials	NMC
Cell Structure	Pouch
Nominal Capacity (Ah)	42
Nominal Voltage (V)	3.85
Cell Weight (g)	340
Energy Density (Wh/kg)	490
Max. Continuous Charge Rate	0.5C
Max. Continuous Discharge Rate	3C
Max. Pulse Charge Rate	1C
Max. Pulse Discharge Rate	5C
Operating Temperature (°C)	-43°C to 55°C
Dimensions (T×W×H, mm)	7 × 87 × 187
Design Standards	GB/T 38058-2019, GB 31241-2022
Certification Standards	UN38.3, RoHS
Sample MOQ	10 pcs (Negotiable)

Sample Lead Time	7–15 working days
Bulk Lead Time	45 days (subject to volume & requirements)



Solid-State Anode-Free Cell Series

anode-free solid-state cell platform is available in various capacity levels, giving pack designers room to balance cell thickness, weight, and energy density before fixing the module layout.

PT25N-EF	25Ah	3.85V	202g	480Wh/kg	0.5C/3C	1C/5C	-43°C~55°C	5.4×74×172mm
PE40N-EF	40Ah	3.85V	316g	495Wh/kg	0.5C/3C	1C/5C	-43°C~55°C	6.3×87×187mm
PE49N-EF	49Ah	3.85V	375g	495Wh/kg	0.5C/3C	1C/5C	-43°C~55°C	7.3×87×187mm

Solution

Low-temperature operation exposes the weak point in many high-energy cells: available capacity falls, internal resistance rises, and a system sized for mild weather suddenly loses useful flight time or power margin. PE42N-EF is built around that constraint, combining a -43°C to 55°C operating range with 42Ah capacity in a 340g pouch format.

The 3C continuous and 5C pulse discharge ratings give integrators room for takeoff, maneuver, and other short high-load events without specifying a larger cell solely for peak current. It is a bare-cell option for teams developing compact, temperature-tolerant battery systems; see LiTrue' s complete range of [battery cells](#) for related configurations.

Application Areas

- Industrial UAVs: supports sustained propulsion demand and 5C pulse loads during takeoff, climbs, and payload maneuvers.
- Cold-Climate Drone Operations: the -43°C lower operating limit addresses the capacity and power loss that can constrain winter deployments.
- Portable Aviation Equipment: the 7 × 87 × 187mm pouch format and 340g weight help designers manage pack volume and mass.
- Custom High-Energy Battery Packs: suitable for integrators building series-parallel systems around a 3.85V nominal cell; explore LiTrue' s [finished battery-pack capabilities](#) for pack-level support.

FAQs

What continuous current can the PE42N-EF deliver?

At 3C continuous discharge, the cell is rated for up to 126A. Its 5C pulse discharge rating corresponds to up to 210A for short-duration load events; final pulse duration and thermal limits should be confirmed for the intended pack design.

Can this cell operate in very cold environments?

Yes. The stated operating-temperature range is -43°C to 55°C. Actual available capacity, charge acceptance, and pack thermal strategy should still be validated under the project' s load profile.

What nominal pack voltage can I build with this cell?

Each PE42N-EF cell is 3.85V nominal. For example, a 12S configuration is 46.2V nominal and a 14S configuration is 53.9V nominal; LiTrue can help scope a suitable configuration through its [engineering team](#).

Are samples and shipping documents available?

It depends on the project configuration and destination. Samples can be discussed for engineering evaluation; confirm applicable transport testing, certifications, packaging, and production MOQ with

LiTrue before release.