

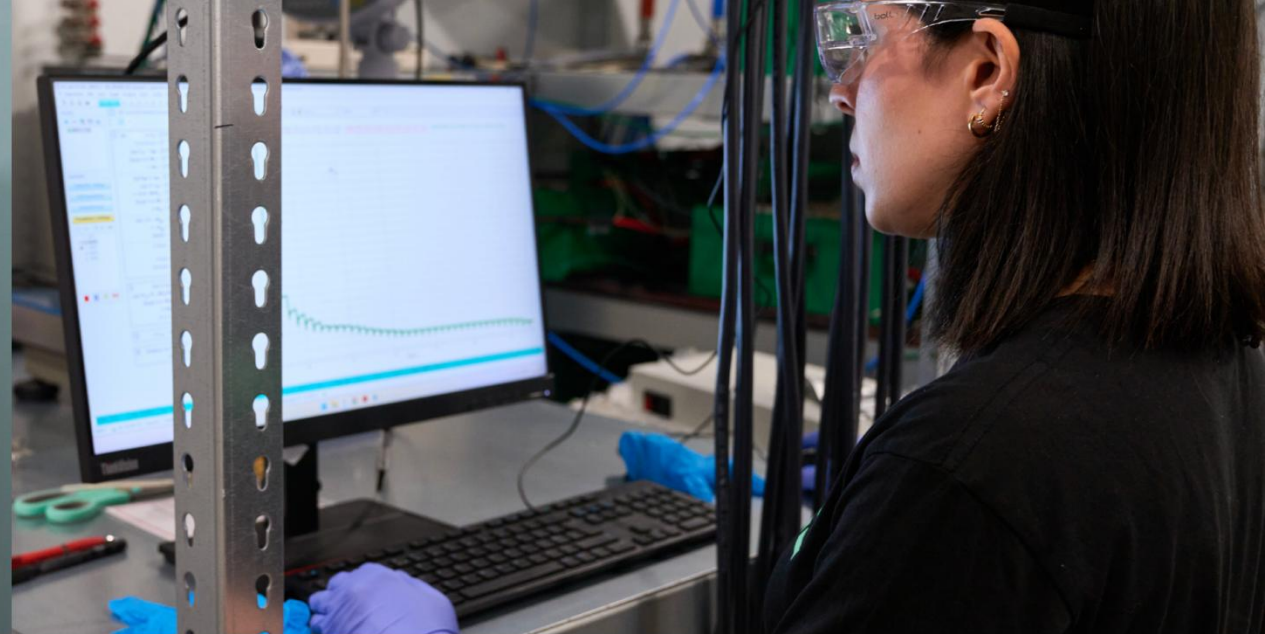


High-Performance Battery Cells Industry Report - 2026 Q3

Insights into the chemistries, designs, and manufacturers
accelerating the frontier of power and energy density.

Including insights and new data from leading cell manufacturers,
including:





London-based HQ and Testing Lab Driving the Adoption of **Next-Generation Batteries**

Our Customers



Mercedes-Benz

QUANTUM
SYSTEMS



PORSCHE

We connect **Battery Manufacturers**
with **Qualified Buyers**



For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

2



“High-performance battery programmes demand rapid adoption of the latest cells to remain competitive. However, at the point of evaluation, meaningful cell data is often incomplete or unavailable.

The result is a strategic decision made in partial darkness, where early assumptions lock in product cost, risk, and performance.

Our mission is to close that gap by providing the structured, system-level analysis teams need to make confident cell selection decisions.”

Dr. Kieran O'Regan

Co-Founder and Chief Growth Officer, About:Energy



CAPACITY

250 GWh+

Corresponding annual production capacity

DATASHEETS

500+

Cell datasheets used to downselect relevant cells

TESTING

50 years

Cumulative battery cell testing duration

MANUFACTURERS

35

High-performance cell suppliers evaluated

MODELLED

40

Battery cells tested and modelled

VERTICALS

5

High-performance application verticals explored

High-performance Battery Report Cadence and Content

This is a quarterly update. Company, product and lab data move every quarter so the report tracks the market between the deeper annual refreshes.

Every Year – Due Q1 2027

A complete refresh

Narrative, regulation and technology sections are rebuilt with a new analytical dive across the market.

Every Quarter

A targeted update

Companies, products and lab data are refreshed to keep pace with the market, without waiting for the next annual edition.

In this release

12+

New profiles

From high-performance cell manufacturers.

12+

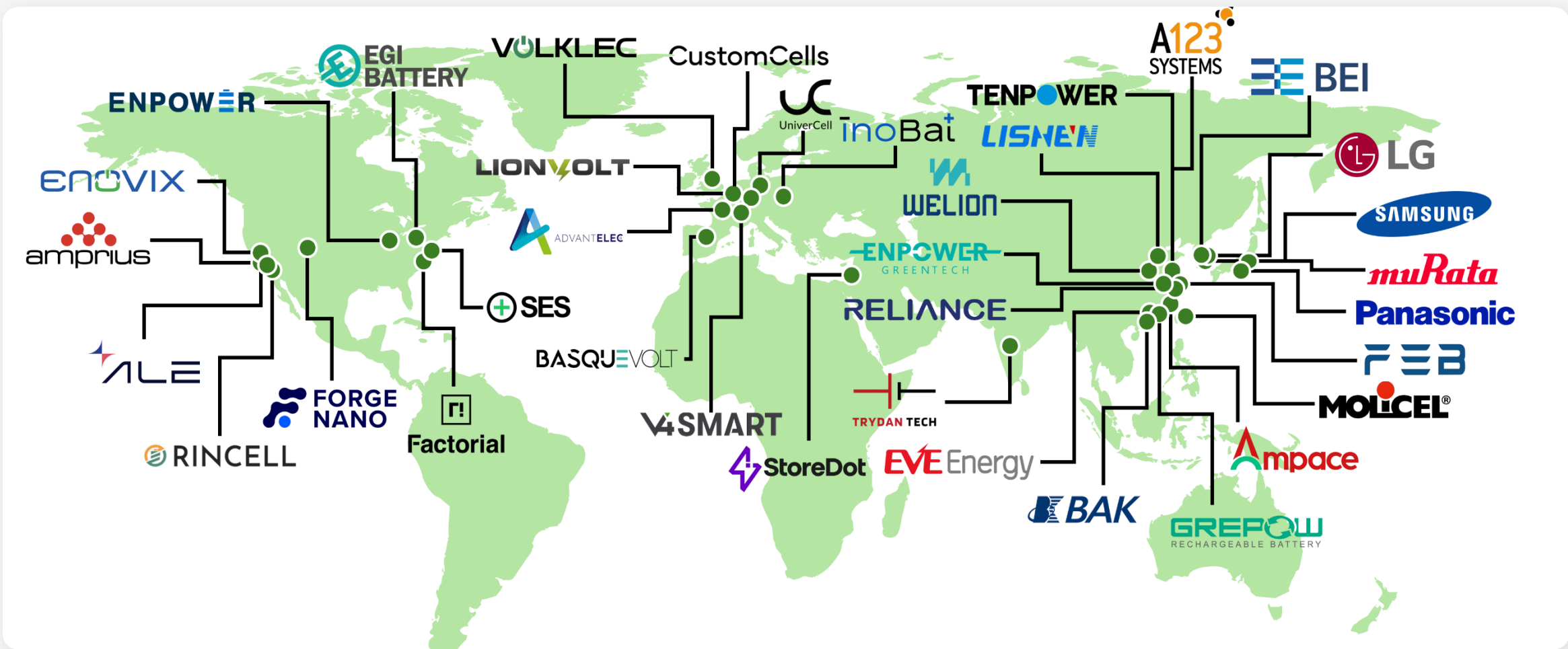
New datasheets

From the latest high-performance manufacturers.

Data straight from our labs

Every new datasheet carries characterisation data measured and validated in-house.

High-performance Battery Cell Supplier Landscape



This supplier map is based on a combination of technical and commercial data. It is indicative, not exhaustive, and reflects a forward-looking view of key cells suppliers for 2026 for space, aviation, defense, motorsports, robotics, and UAVs.

New this Quarter: Company Profiles and Product Information From



New this Quarter: Verified Cell Datasheets

12+ new verified datasheets added this quarter, including popular battery cells:

AMPRIUS SA112 21700	LG H52A 21700	MOLICEL M65A 21700	MOLICEL P50S 21700
RELIANCE RS60 21700	SAMSUNG 50U 21700	TENPOWER 50ME 21700	TENPOWER 58HE 21700
AMPRIUS SA504 Pouch	BEI MUL17A Pouch	INOBAT E10 Pouch	SES H10P Pouch

Disclaimer

All data, models, and analyses presented in this report have been generated or compiled by About:Energy using internal testing, modelling methodologies, and engineering judgement. Where third-party or public sources are used, they are believed to be reliable and provided by cell manufacturers.

The information presented is intended to support comparative cell evaluation and early-stage engineering decision making. Battery performance is highly dependent on operating conditions, system architecture, and application-specific constraints.

Actual performance in use may differ from the results presented. This report reflects the independent technical opinion of About:Energy and is provided for information purposes only. It does not constitute a guarantee, specification, or warranty. To the fullest extent permitted by law, About:Energy accepts no liability for strategic decisions made using this report. For a deeper understanding of the macro, technical, and regulatory factors that inform cell selection, speak to our team.



Cell Selection: Problem or Opportunity?

Why cell choice is a system-defining decision for high-performance battery programmes.

The Cell Selection Problem

High-performance industries have increasing pressure to adopt new battery cells quickly. Manufacturer-provided data is often incomplete, inconsistent, or poorly aligned with real system constraints.

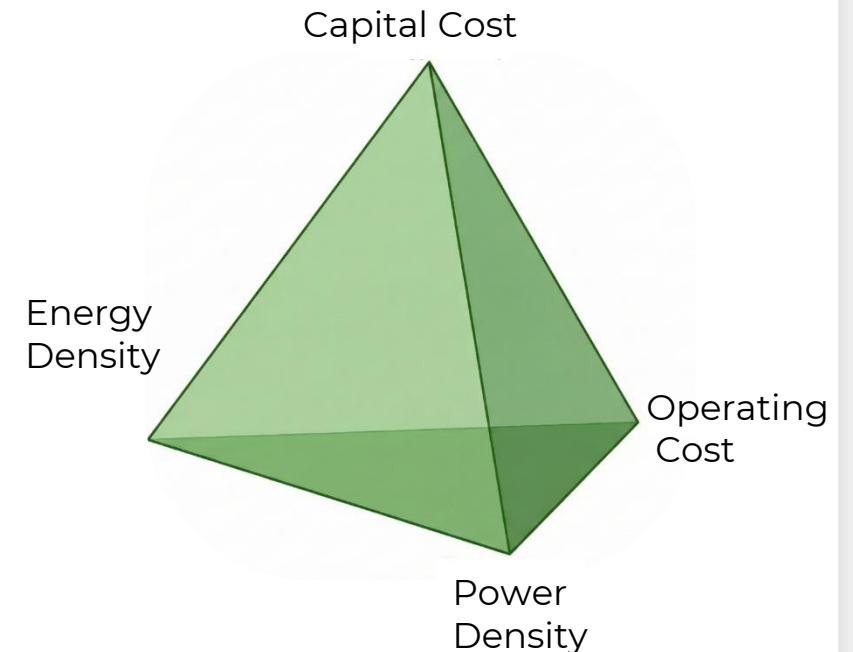
Cell selection decisions frequently rely on simplified assumptions around energy density, power capability, and thermal behaviour. Once embedded into pack architecture, these assumptions lock in cost, risk, and performance outcomes that are difficult to reverse.

Cell selection is a multi-objective decision across four competing factors:

1. **Capital cost** — Cell unit cost must be balanced against pack architecture complexity, thermal management hardware, and system integration overhead.
2. **Power density** — Peak pulse capability degrades under sustained load; thermal and voltage limits constrain what is deliverable at the pack level.
3. **Energy density** — Gravimetric and volumetric energy density set hard limits on range and duty cycle within fixed mass and volume envelopes.
4. **Operating cost** — Warranty, safety certification, and abuse tolerance define the cost profile across the full-service life.

A system-oriented evaluation approach is required, linking cell-level behaviour to pack-level electrical, thermal, mechanical, and lifetime metrics.

Cell Selection Trade-offs



High-Performance Verticals in Electrification



Drones



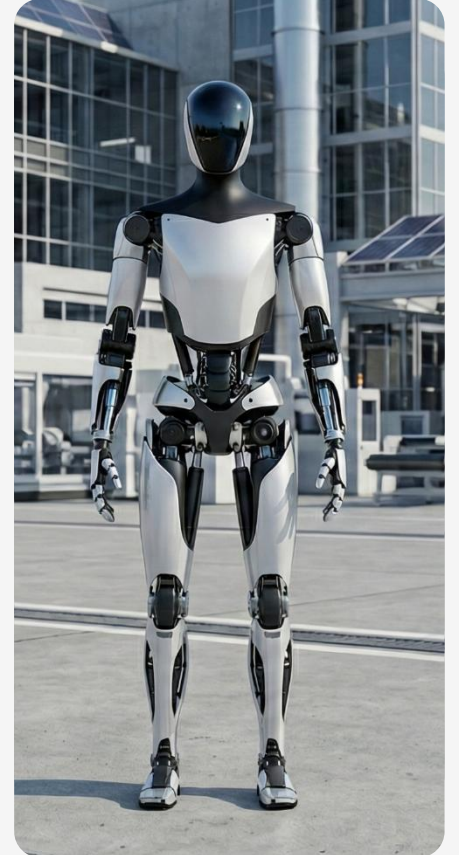
Aviation



Space

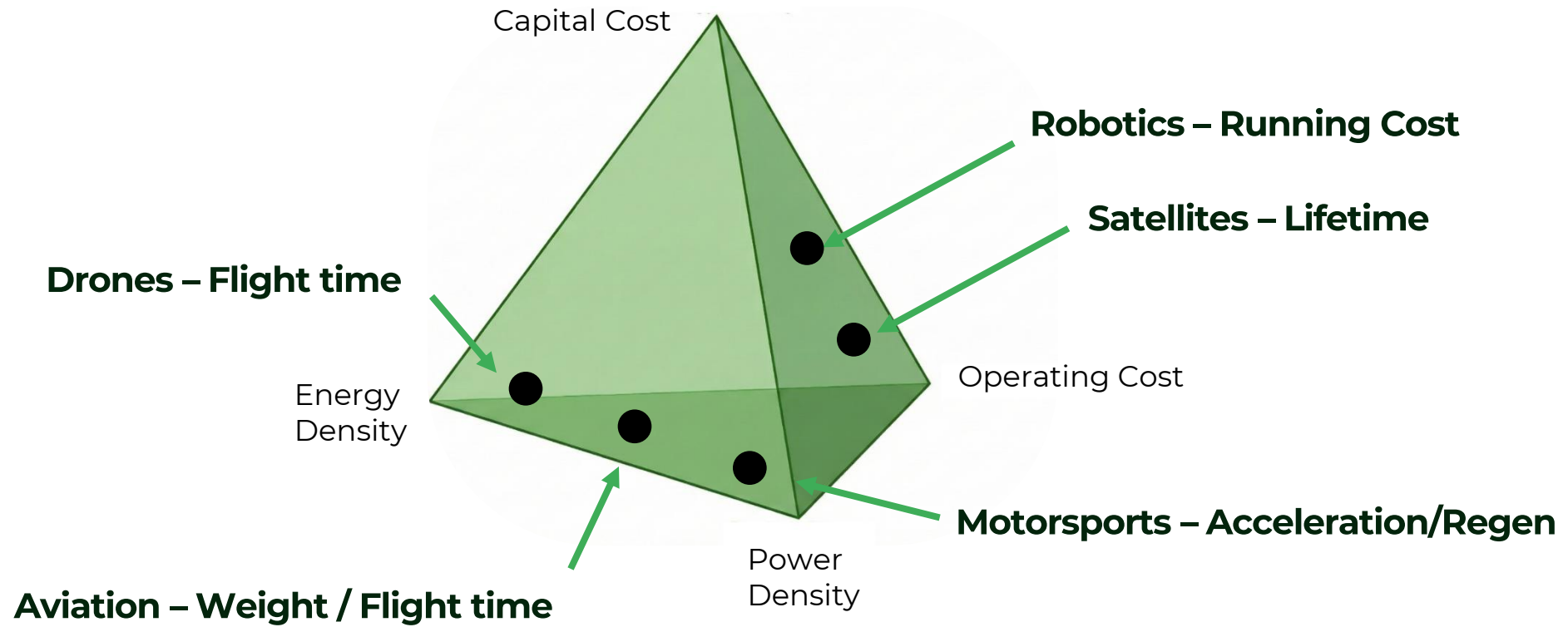


Motorsports



Robotics

Mission metrics define batteries in performance industries



Battery systems from \$200/kWh to \$10,000/kWh



Performance in Application

Exploring how leading companies approach battery pack design under real mission profiles and system constraints

Drones / UAVs

Industry: The commercial aerial drone market spans logistics, delivery, defence, and inspection. Players range from Manna operating urban last-mile delivery networks to Anduril pushing autonomous systems for defence where mission reliability is important.

Key Metrics: Flight time is the binding constraint. **Gravimetric energy density** is the primary cell metric, with every gram trading directly against payload and endurance. **High peak C-rates** are required for take-off and climb, and cycle life is critical for operators running multiple missions.

Cell Chemistry: **Silicon-dominant** anodes deliver step-change energy density gains over graphite. **Lithium metal** pushes performance further still, offering the highest theoretical gravimetric density, though cycle life and safety remain challenges managed through BMS and thermal design.

Companies

- **OEM** drone manufacturers define the performance envelope, selecting battery systems to match their mission profile, whether commercial logistics or defence.
- **Pack integrators** engineer certified battery systems from raw cells, tailoring them to individual airframe constraints.
- **Cell suppliers** are specialist high-performance manufacturers, distinct from the commodity producers who dominate consumer and automotive.

OEMs



Packs



Cells



Aviation / eVTOL

Industry: The eVTOL market is approaching commercialisation, with certified aircraft from Joby, Archer, and Vertical Aerospace targeting urban air mobility. BETA Technologies and Pivotal address fixed-wing electric aviation. Wisk is pursuing autonomous passenger flight.

Key Metrics: Gravimetric energy density is critical, with eVTOL missions requiring sustained high power across climb, cruise, and landing. Battery lifetime matters given aircraft asset values and maintenance. Safety and certification filter cell selection before performance is even considered.

Cell Chemistry: Silicon anode chemistries offer the energy gains needed to make commercial routes viable. The 21700 cylindrical format is favoured due to safety and the significant certification cost savings it offer in redesigns.

Companies

- **OEMs** are a mix of well-funded startups and aerospace primes racing to certification, each defining battery specifications around route economics and regulatory requirements.
- **Pack integrators** face a higher certification bar than any other vertical, with aviation qualification driving significant engineering overhead.
- **Cell suppliers** to aviation are a small group of specialists capable of meeting aerospace standards, creating a constrained supply chain relative to other battery markets.

OEMs



Packs



Cells



Space

Industry: The space battery market spans satellites, launch vehicles, and planetary exploration. New space ventures including SpaceX, Blue Origin, K2 Space, and Cesium Astro are driving demand for higher-performance systems, alongside primes such as Boeing and Leonardo.

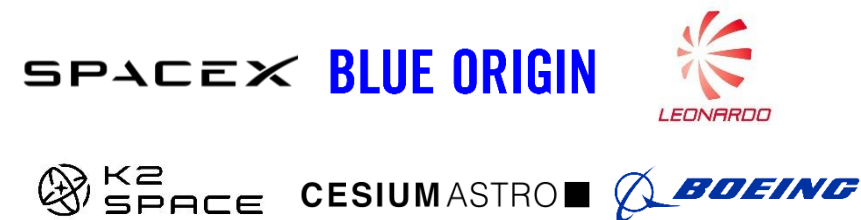
Key Metrics: Cycle life and calendar aging are the primary constraints, with satellites requiring 15+ year missions and thousands of charge-discharge cycle. Gravimetric energy density matters for launch mass budgets, while extreme temperature performance can be non-negotiable.

Cell Chemistry: Lithium-ion dominates current space applications, engineered for extremely long lifetime requirements of up to 10,000 cycles, typically achieved by operating across a narrow depth-of-discharge (DOD) to preserve cell longevity across multi-decade missions.

Companies

- **OEMs** range from legacy primes with established space heritage to new space ventures demanding higher performance at commercial timescales.
- **Pack integrators** must meet the most demanding qualification standards of any vertical, with space heritage and radiation testing creating significant barriers to entry.
- **Cell manufacturers** are an extremely constrained group, with most missions relying on a handful of manufacturers capable of space-grade standards.

OEMs



Packs



Cells



Motorsports/Hypercars

Industry: The motorsports and hypercar battery market spans Formula 1 hybrid powertrains, Formula E, Le Mans prototypes, and road-going hypercars. OEMs including Rimac, Czinger, Koenigsegg, Ferrari, Aston Martin, and Tesla are defining a new performance benchmark where battery capability is a core competitive differentiator, whether as a full electric system or hybrid.

Key Metrics: **Power density** is the primary metric, with acceleration and regeneration demanding extreme rates. **Energy density** remains important for weight-sensitive applications, but the power-to-weight ratio of the cell is the critical tradeoff. **Thermal management** of cells is a significant engineering challenge, where batteries can be immersion cooled.

Cell Chemistry: **High nickel NMC cathodes** paired with **silicon anodes** dominate, offering the power and energy density combination required. Cells are pushed to their thermal and electrochemical limits.

Companies

- **OEMs** range from dedicated electric hypercar manufacturers to legacy performance brands using battery systems as core part of identity.
- **Pack integrators** develop bespoke HV systems engineered for extreme power delivery, thermal management under race conditions.
- **Cell manufacturers** to this segment are selected for peak power capability rather than cost, with a small number of high-performance manufacturers.

OEMs



Packs



Cells



Humanoid Robotics

Industry: Humanoid manufacturers are targeting industrial automation, logistics, and consumer applications. OEMs including Figure, Tesla, Apptронik, 1X, and Humanoid are racing to deliver platforms where battery performance directly determines operational utility and commercial viability.

Key Metrics: Operational runtime is the primary constraint, making **gravimetric energy density** critical. **High peak power** is required for dynamic movement, while cycle life determines total cost of ownership for industrial deployments running multiple shifts per day.

Cell Chemistry: **High energy batteries** are being explored, balancing runtime against weight constraints. **LFP** is being evaluated where total cost of ownership dominates, though this pushes the supply chain towards commodity or high-volume Chinese manufacturers.

Companies

- **OEMs** span well-funded startups and major technology companies targeting deployment environments from factory floors to consumer settings.
- **Pack integrators** develop compact systems fitting tight human-scale form factors while delivering high peak power.
- **Cell manufacturers** are drawn from high-performance consumer and industrial segments, with energy density and cost primary selection criteria.

OEMs



Packs



Cells



Cell Selection at the Limits of Motorsports Performance

How McMurtry Automotive approaches high-performance cell evaluation

McMurtry Automotive has spent a decade designing battery packs for demanding motorsport applications, with their all-electric Spéirling holding the Goodwood hill climb record.

Their technology division has applied this expertise to create a standalone pack available for OEMs, delivering over 1 MW of pulse discharge at 4.3 kW/kg. This required more than chemistry selection - it demanded a rigorous process to translate cell data into pack-level confidence. The challenge is one the industry largely underestimates.

Cells are characterised in controlled conditions but deployed in uneven thermal environments with varying current densities. While ECM models can achieve <1% error at cell level, they can diverge by 10–15% in local temperature and voltage at pack level. These errors impact degradation, fast-charge safety, and thermal design. Therefore, selecting the right cell is not a spec sheet exercise - it requires modelling that bridges lab data and real-world performance.

"One of the fundamental challenges in advanced battery systems development is the robust translation of cell-level characterisation data into accurate and repeatable pack-level performance predictions."

– Chris Martin, Head of Battery & HV Systems, McMurtry Automotive



The Real Bottleneck Is Not the Chemistry

McMurtry's view on where performance is being left on the table.

The electrochemical gains being made inside cells are real. Realising them at pack level depends on something the industry has been slower to address, whether the formats those cells ship in were ever designed for the performance they now contain:

- Electrochemical development is outpacing integration design. Higher energy density, lower impedance, and tabless architectures are arriving faster than pack integrators can feed requirements back into the cell design phase.
- A 50% gain in cell power density can be largely lost at pack level if integration architecture remains unchanged. Legacy cylindrical formats were not designed for the performance potential of the cells now inside them.
- Purpose-built formats are beginning to change this. The 4680 and BYD Blade both demonstrate what becomes possible when geometry is designed around the pack, not inherited from a legacy standard.

Next-generation cell performance will only be fully realised when manufacturers and pack integrators collaborate on reimagining format, not just improving chemistry.

That expertise underpins McMurtry Applied Technology, supplying modules and complete packs across motorsport, automotive, marine, rail, off-highway, and aerospace on the same architecture as the record-breaking Spéirling.



What Commercial Drones Really Demand from a Battery

How automotive powertrain expertise is reshaping UAV battery design

EFT Mobility was founded by engineers with deep roots in automotive powertrain design. That background now underpins one of the most technically rigorous approaches to UAV battery development in the industry. As the dedicated battery and charger subsidiary of Quantum Systems, EFT Mobility is responsible for the development, qualification, and industrialisation of all battery products across the group, supplying over 20 customers including Leonardo, Rotax, Griff Aviation, and MT Aerospace.

The metrics EFT Mobility prioritises reflect the realities of commercial drone operations: usable energy at pack level for a given mission profile, and cycle life. The latter is a particular constraint with newer cell chemistries, where the gap between cell-level promise and pack-level durability is widest. Cell selection at EFT Mobility is therefore not a datasheet comparison. The impact of pressure on cell performance introduces a degree of freedom that most cell characterisation data does not account for, and thermal behaviour during both charge and discharge remains genuinely difficult to predict without high-fidelity modelling.

"The UAV industry will be the key driver for the next generation of high energy density battery cells and packs."
– Tobias Kahnert, CEO, EFT Mobility



Built for the Demands of Commercial UAV Operations

EFT Mobility's view on where cell technology and supply chains are heading

The drone market is pushing the boundaries of energy density faster than any other application today. EFT Mobility's current battery platform delivers up to 340 Wh/kg at pack level, built around high-silicon anode cells from Amprius, with lithium metal identified as the most promising next step. Getting there reliably requires solving two problems simultaneously: the electrochemistry, and the supply chain behind it.

- The industry standard today is lithium-ion with high-silicon anodes. A promising next-generation chemistry is lithium metal, but supply chains for newer cell formats are not yet scaled to the volumes commercial UAV programmes require.
- NDAA compliance is a core constraint, particularly for defence and government customers. Building a China-free supply chain remains the primary hurdle, and it shapes cell selection as much as performance does.
- EFT Mobility's product range spans standard certified packs (450 Wh and 900 Wh) through to fully custom configurations up to 340 Wh/kg and 5 kW/kg, scalable from 6S to 14S across voltages from 15V to 60V.

Cell selection for UAV applications demands modelling tools that account for compression effects, thermal behaviour under real mission loads, and cycle life under the charge rates commercial operations require. Getting that right at the cell level is what determines whether pack-level performance holds up in the field.





Technology Trends

Assessment of cell form factors, chemistries, and emerging battery architectures relevant to high-performance applications

Cell Form Factor in High-Performance Applications

High-performance applications almost exclusively use commercially available cells. Format and chemistry choice is rarely arbitrary.

- High Ni (NMC, NCA, NMCA) silicon batteries is the dominant chemistry, offering the best combination of energy density, power capability, and supply chain maturity available today
- Cylindrical cells (18650, 21700) suit high-power structural integration; pouch cells trade mechanical simplicity (integrity/safety) for higher pack-level energy density
- In both cases, the cell must be commercially proven. Pre-production chemistries introduce supply chain and qualification risk most programmes cannot absorb
- Form factor choice is increasingly driven by integration requirements as much as electrochemistry, with tabless and large-format cylindrical designs closing the gap on pouch at pack level

Cell selection is an optimisation across energy density, power, thermal behaviour, supply chain reliability, and characterisation data availability. Getting any one wrong compounds at pack level.

Use 'exclusively' pouch and cylindrical



~3 – 30 Ah



2 – 7 Ah

Typical capacities of each format

Tabless Electrode Architecture

What is tabless?

In conventional cylindrical cells, current flows through discrete metal tabs welded at fixed points on the electrode. In a tabless design, the foil edges are notched so the entire electrode length is equally electrically accessible to the terminals. This shortens internal current pathways, reduces internal resistance, and eliminates the intermittent coating gaps that tab welding requires. Tesla commercialised the approach with the 4680 cell in 2020.

What previously held it back?

Tabless cells require precision laser edge-cutting at scale, adding process complexity and equipment cost. Larger-format cells introduce new thermal management challenges due to a reduced surface-to-volume ratio. Retooling from tab-based manufacturing lines requires significant capital investment. As these challenges have been solved, numerous tabless cells are now available in the market.

Pros

- Lower resistance and heat generation
- Uniform current even for larger formats
- Faster coating reduces manufacturing cost

Cons

- Laser cutting adds process complexity
- Less maturity in manufacturing
- No direct energy density improvement

Top Cells

EVE 50PL

Reliance RS50
Samsung 50U

Reliance RS60
Ampac JP50

Tenpower 50XG



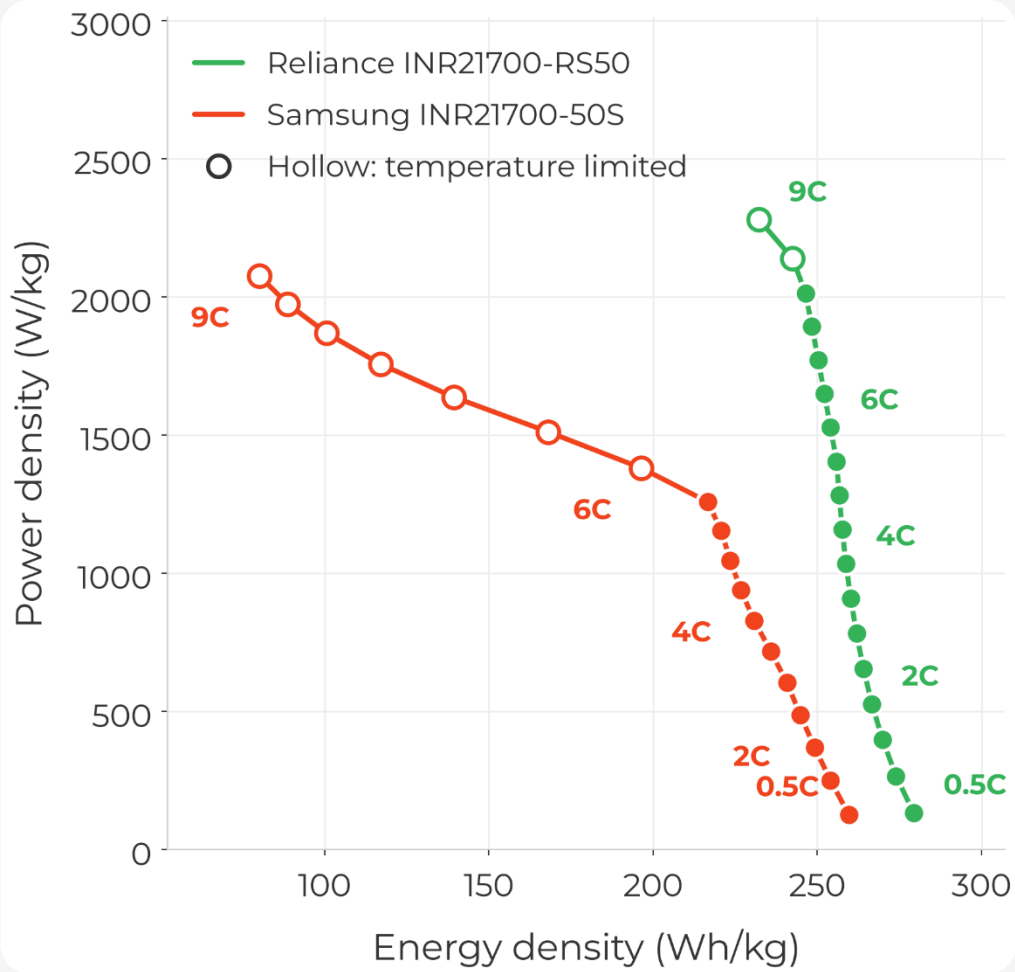
Tabless Electrode Showcase – Reliance RS50



Reliance RS50 (2024, tabless) vs Samsung 50S (2020, multitab) — 4 years

Key benefit: Improved power performance. The 50S (multitab) overheats from 6C, the RS50 (tabless) performs up to 8C. The RS50 provides 7.6% higher specific energy at 0.5C, 14.1% higher at 4C, and 18.1% higher at 5.5C, while running 11.3 °C cooler at 4C and 18.1 °C cooler at 5.5C.

Past 6C the 50S reaches the 80 °C cut-off: 100.6 Wh/kg at 8C against 246.4 Wh/kg for the RS50. The resistance reduction from tabless architecture and other developments improves thermal performance and specific power availability. The cell reaches a far higher rate before needing additional cooling.



High-Silicon Anodes

What it is

Graphite anodes store lithium by intercalation up to around 370 mAh/g. Silicon stores lithium through an alloying reaction, forming $\text{Li}_{15}\text{Si}_4$ at full lithiation, with a theoretical capacity of around 4,200 mAh/g. High-silicon anodes use silicon as the dominant active material, either in pure form or as silicon-carbon composites, enabling cell-level energy densities well beyond what graphite-based chemistries can achieve.

What has previously held it back

Silicon undergoes around 300% volumetric expansion during lithiation, causing electrode fracture and rapid capacity fade. The solid-electrolyte interphase (SEI) is unstable and reforms each cycle, consuming lithium and electrolyte irreversibly. These issues have historically limited silicon to low weight-percent additions in graphite blends, but we are now seeing silicon with >40% capacity of the anode unlocking 6 to 7 Ah 21700 batteries.

Pros

- Higher energy density
- Reduces graphite supply chain risk
- Faster charging than graphite

Cons

- Volume expansion fractures electrodes
- Unstable SEI consumes active lithium
- Cell swelling complicates pack integration

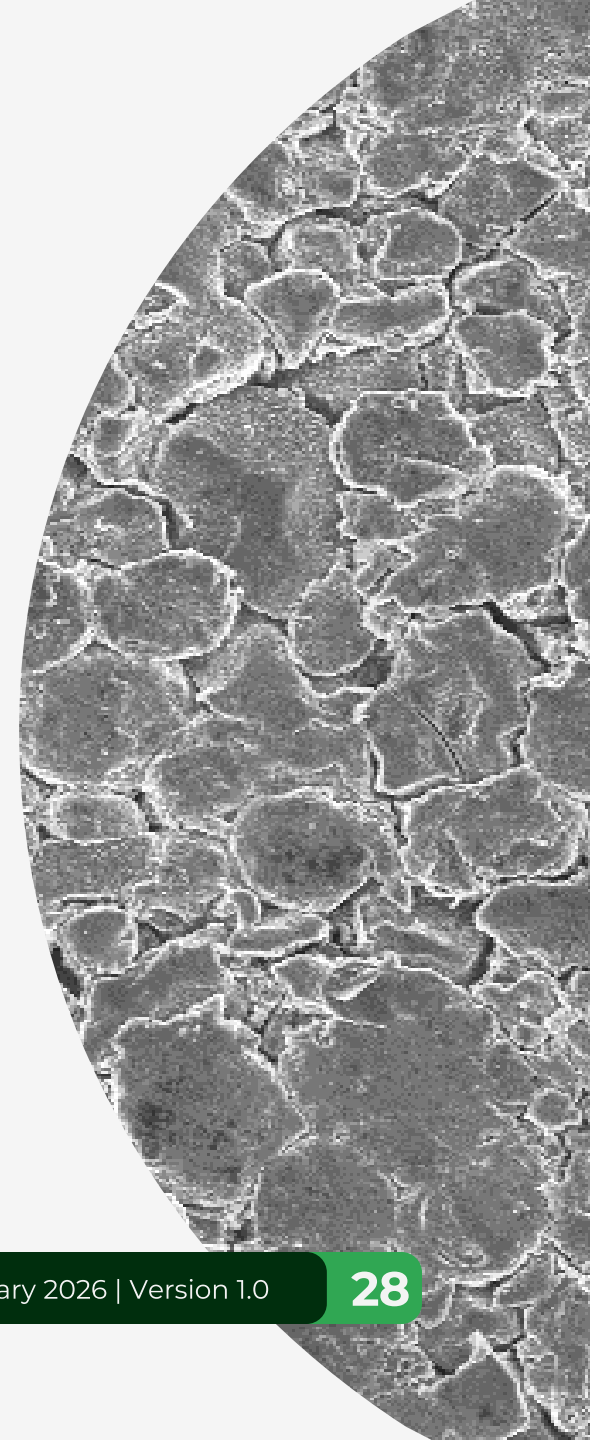
Top Cells

Molicel P60C

FEB 68E

Amprius SA17

Tenpower 60XC



High-Silicon Anode Showcase – FEB 68E

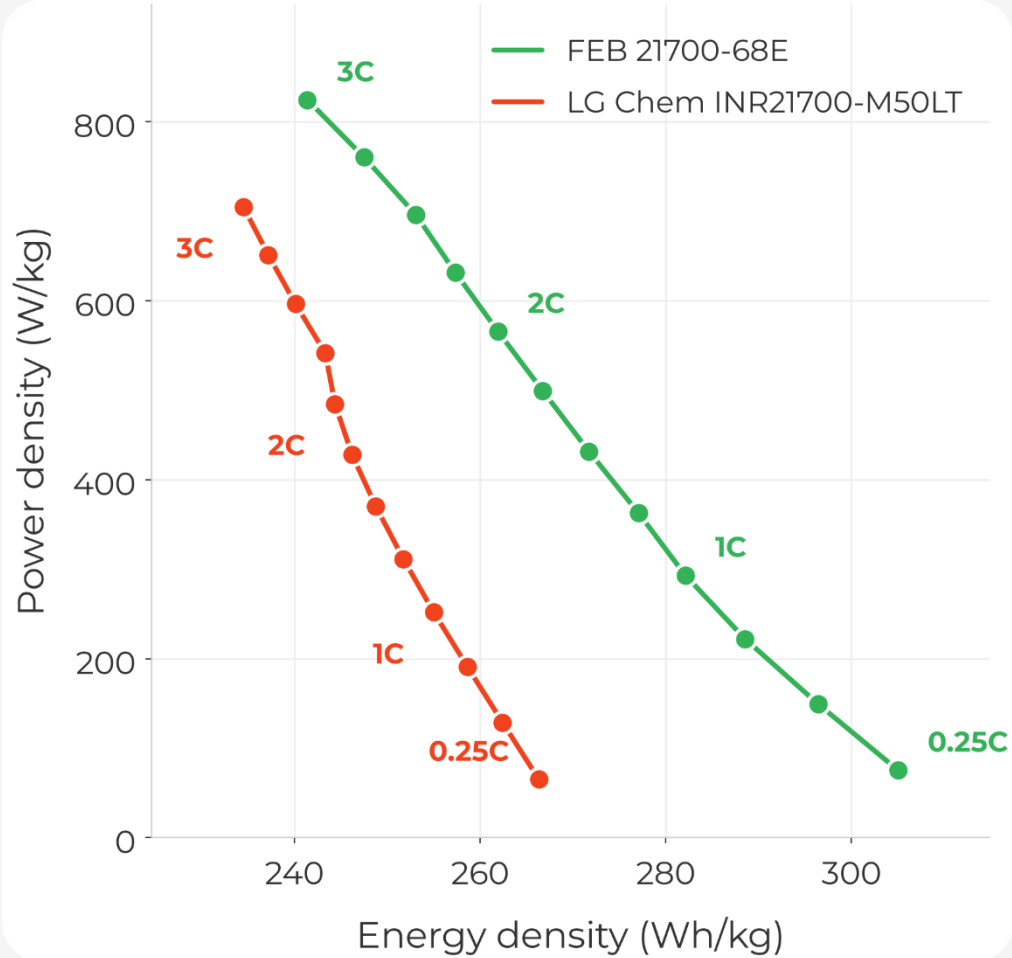


FEB 68E (2025) vs LG Chem M50LT (2020) — 5 years

Key benefit: 20% more energy from the same 21700 can.

Five years of high-energy 21700 development have brought a meaningful step up in energy across the board, with the FEB 68E delivering roughly 20% more energy than the popular LG M50LT. For applications built around the 21700 form factor, that means more usable energy in the same can.

Per mass: 255 Wh/kg to 282 Wh/kg (+10.6%)
Per volume: 676 Wh/L to 810 Wh/L (+19.8%)
Per cell: 17.3 Wh to 21.2 Wh (+22.7%)



Lithium Metal and Anode-free Batteries

What it is

A lithium metal anode replaces graphite with a thin foil or plated layer of pure metallic lithium. At 3,860 mAh/g and the lowest electrochemical reduction potential of any anode material, it enables the highest theoretical energy density of any lithium-based cell architecture. Lithium metal also has the highest heat capacity of any solid metal, supporting high discharge rates with limited temperature rise. Anode-free is a lithium metal cell that has no anode on manufacture, that plates on first cycle.

What has previously held it back

Uneven lithium plating produces dendrites that can penetrate the separator, causing short circuits and thermal runaway. Volume changes from lithium plating/stripping during cycling cause swelling degrading performance of the cell and pack, unless controlled. Growing interest from UAV and unmanned systems markets, where safety and cycle life requirements are less stringent than automotive, has opened a first commercial pathway.

Pros

- Highest capacity of any anode
- Improved battery thermal performance
- Lowest potential maximises cell energy

Cons

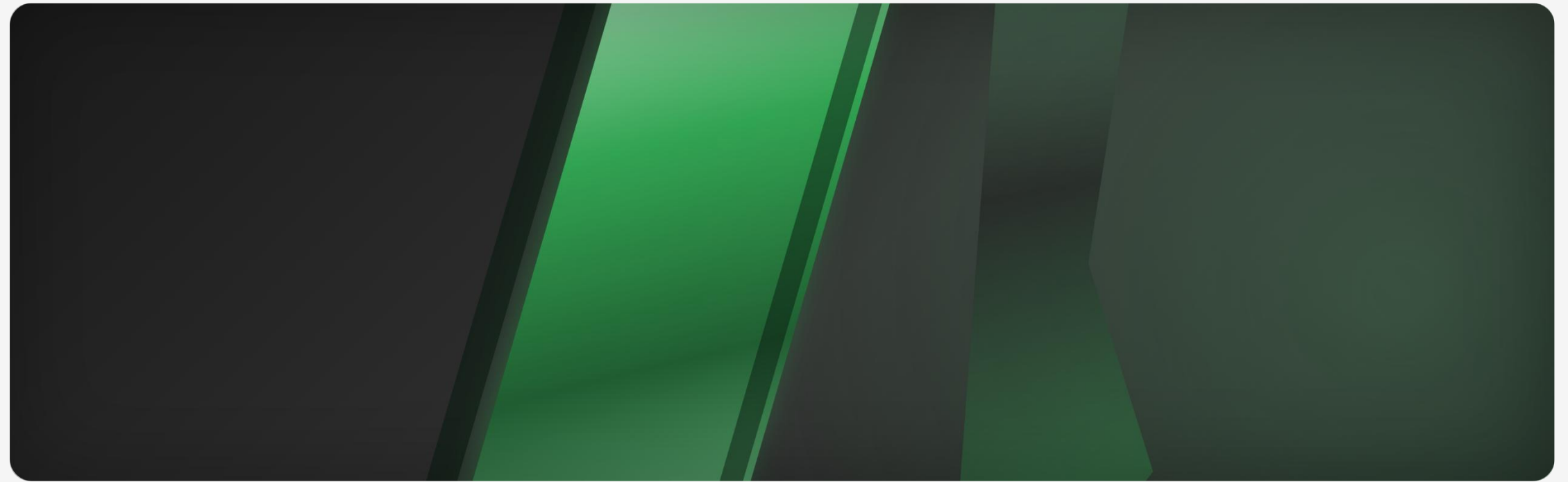
- Short lifetime
- Dendrites can cause short circuits
- Moisture-sensitive, difficult to manufacture

Top Cells

BEI MUL17A

BEI MUL03A

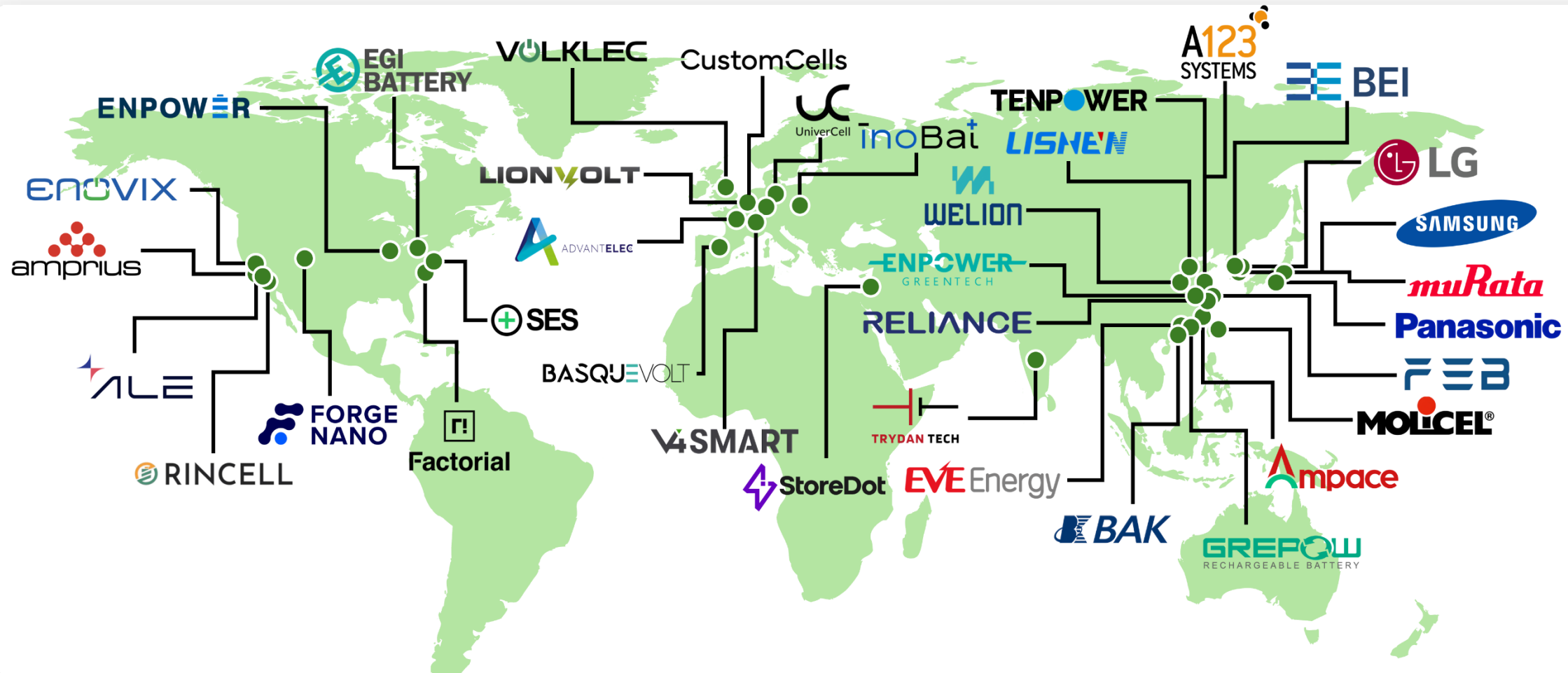
EGI LNP0130M



Company Profiles

Overview of high-performance cell manufacturers, including relevant commercial products, using manufacturer data our test data

High-performance Battery Cell Manufacturer Landscape



Categorisation of manufacturers through our third-party assessment

This categorisation reflects over five years of direct engagement with cell manufacturers and their customers.

It draws on thousands of conversations across the high-performance sector to understand which manufacturers lead on the metrics that matter: energy density, power density, and lifetime, alongside commercial factors like volume, quality, customer support, responsiveness, and willingness to support third-party validation of their data.

Category 1

Verified Datasheets



We have tested the cells ourselves, working directly with the manufacturer or their customers to validate real samples. This is our highest confidence tier: performance data reflects measured reality, not marketing claims.

Category 2

Company Profiles

We are actively working with the manufacturer or their customers to third-party test their cells, with validation in progress. Profiles here are built on direct engagement and self-reported data pending full verification.

Category 3

Manufacturer Map

No direct engagement with the manufacturer, and little visibility into their roadmap, product changes, or long-term commercial viability. Data here should be treated as indicative only.

Manufacturers in these lists are credible and being actively used in programmes across European / N. American pack designers in high-performance verticals. There are many other manufacturers we are tracking that have not yet been included in the list. Categories are a way of measuring how much data and provenance we have to inform design decisions.

Trends from the High-Performance Cell Landscape

"Next-gen" is not new

Lithium metal, tabless electrodes, and high-silicon anodes have been active areas of academic and industry research for decades. The underlying electrochemistry was understood long before any commercial cell existed. What has changed is not the innovation itself but the system around it — the ability to manufacture at scale, solve related pack and thermal design challenges, and bring cost to a level where deployment is viable. The hard part was never the chemistry.

A supply chain that leads back to Asia

It is well documented that >95% of cells are manufactured across China, South Korea, Japan, and Taiwan. What the manufacturer landscape map reveals is that nearly all European and N. American development roads also lead back to Asia. Whether through contract manufacturing arrangements such as Amprius, regional hubs from Enovix and SES in Malaysia and Korea, or joint ventures pairing European and N. American IP with Asian capital and production capability such as Inobat/Gotion and EGI/Enpower Greentech, Asia is not just a manufacturing base — it is a fundamental enabler of capital, supply chain, and scale for the entire sector.

Pivoting away from EVs

As competition with Chinese manufacturers on EV battery cost and scale became increasingly difficult, several companies originally targeting mobility applications — including SES, Factorial, CustomCells, and V4 Smart — have repositioned toward high-performance niches where differentiation is possible and commoditisation pressure is lower. These markets offer a path to revenue without the five- to ten-year qualification and scaling timelines that automotive supply chains demand, and without competing directly on cost against established Asian cell producers.



How to Read Our Cell Datasheets

Data Provenance & Methodology - This report combines manufacturer capability assessment with normalised cell-level performance metrics and test data, focused on cells suited to high-performance applications. It is designed to support early-stage screening, comparison, and down-selection for pack design and system development.

What the data covers - Company profiles draw on self-reported or publicly available information, covering NDAA compliance, manufacturing capability, and commercially available chemistries. Coverage is limited to high-performance verticals: space, aviation, motorsports, drones, e-mobility, robotics, and power tools.

Normalised metrics are sourced from manufacturer datasheets unless stated otherwise. Energy density equals nominal capacity multiplied by nominal voltage, divided by cell mass or volume. Power density equals max continuous current multiplied by nominal voltage, divided by cell mass or volume. Cell mass and volume are taken at the upper bound of the reported range, unless directly measured by About:Energy from five samples.

Why standardisation matters - Manufacturer datasheets vary significantly in test conditions, definitions, and reported metrics. Every cell in this report is evaluated against the same methodology, enabling reliable like-for-like comparison.

Three core metrics - Energy density, power density, and Thermal Efficiency Loss (TEL) — quantifying performance lost to heat during discharge. Where forced cooling is applied during testing, this may allow higher capacity extraction than a real application would achieve; TEL captures this separately.

Datasheet indicators - **Country flag** = headquarters location. **NDAA logo** = manufacturer compliance commitment. **Verified badge** = cell or manufacturer physically tested or modelled by About:Energy.

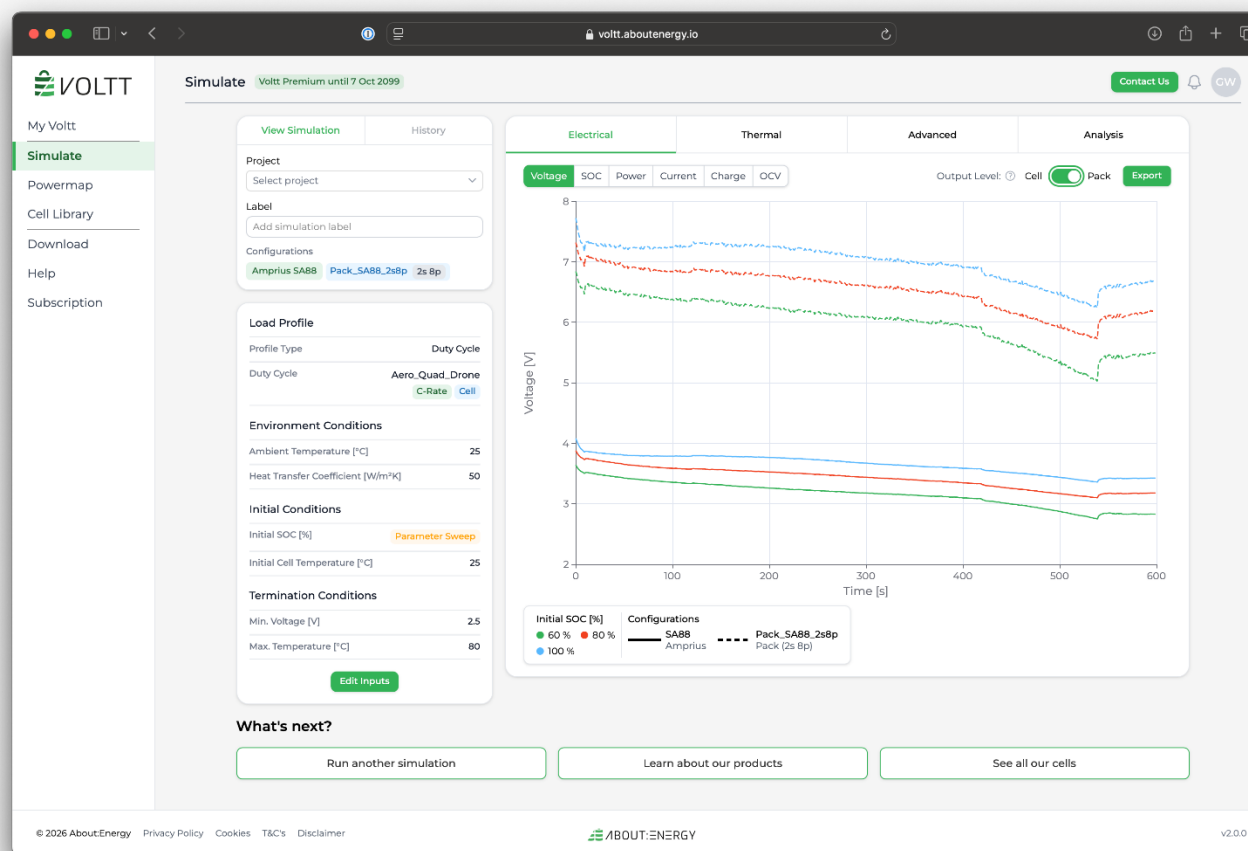
Cell Insight In One Session — Shorten Cell Evaluation Times by 70%

What Voltt predicts

- Peak power delivery
- Mission profile performance
- Flight time and range
- Pack-level outputs
- Thermal limits under load

What Voltt eliminates

- Months of sampling
- Datasheet vs reality
- manufacturer comparison time
- Design iteration cycles
- Spec sheet gaps



Access at: <https://voltt.aboutenergy.io/signup>

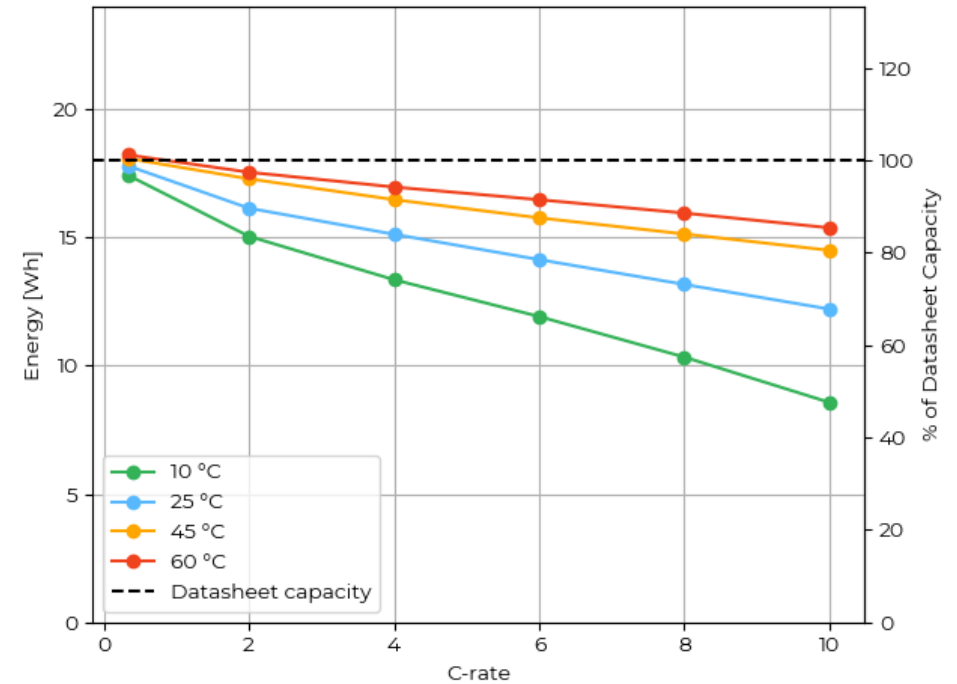
How much energy does the cell deliver?

A delivered energy map vs. a single Wh/kg figure

Datasheet energy ratings are measured under conditions that rarely match the application. Engineers who rely on them tend to discover the gap late, when validation data shows the cell falling short at the rates or temperatures that matter. The usual response is to apply a rule-of-thumb derating or wait for in-house testing, both of which introduce delay and uncertainty.

About:Energy's delivered energy chart shows energy in watt hours across a range of discharge rates and temperatures, with a dashed reference for the datasheet rating. Read across to understand the impact of increasing current, and down to see how performance shifts with temperature. Cells that maintain broad, flat regions retain usable energy under load, while steep gradients indicate a narrow operating window.

About Energy reports gravimetric energy density in Wh/kg at C/3 and 25 °C. This normalises for mass and fixes a consistent reference point, so different cell formats can be compared directly without distortion from size or test conditions.



EVE 50PL

273 Wh/kg

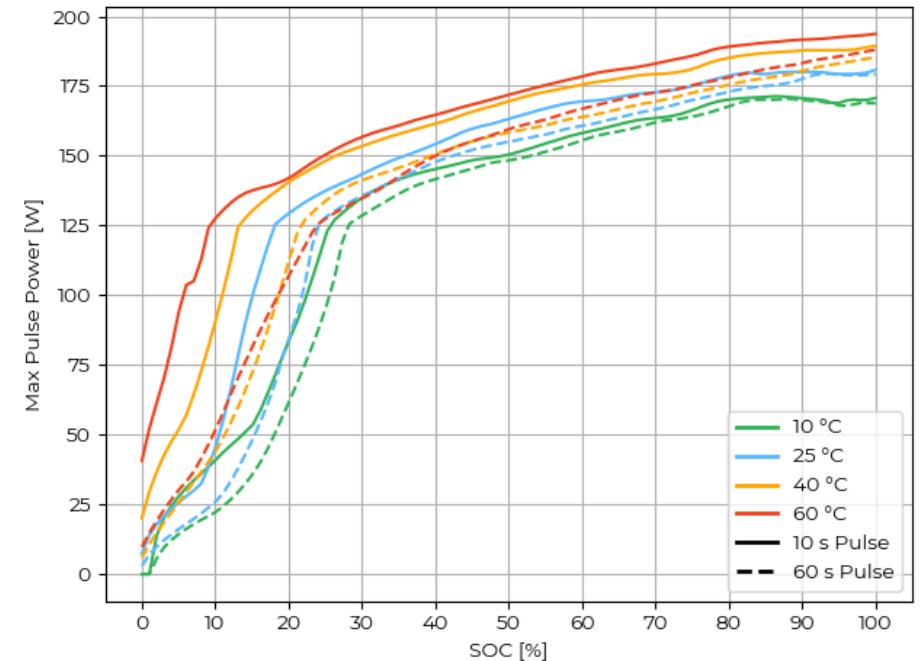
How much power can the cell sustain?

A pulse power envelope vs. a single W/kg figure

Power capability is not fixed. It changes with temperature, state of charge, and how long the load is applied. Datasheets typically reduce this to a single continuous discharge rating, which says little about how performance varies across the operating window. For applications with dynamic loads, this leaves real performance unclear.

About:Energy's pulse power chart shows maximum power across the full state of charge range, comparing short and longer pulse durations at multiple temperatures. The shape of the curves shows where power is available, and where it falls away. The separation between pulse durations highlights how quickly limitations appear under sustained demand, while the contraction of curves at lower temperatures reflects rising internal resistance.

About:Energy reports gravimetric power density in W/kg at peak pulse, 25 °C, and 50% SOC. This removes format differences and anchors the comparison at a representative operating point, avoiding the extremes where voltage and diffusion effects skew results. The single number shortlists candidates. The curve validates them.



EVE 50PL

2501 W/kg

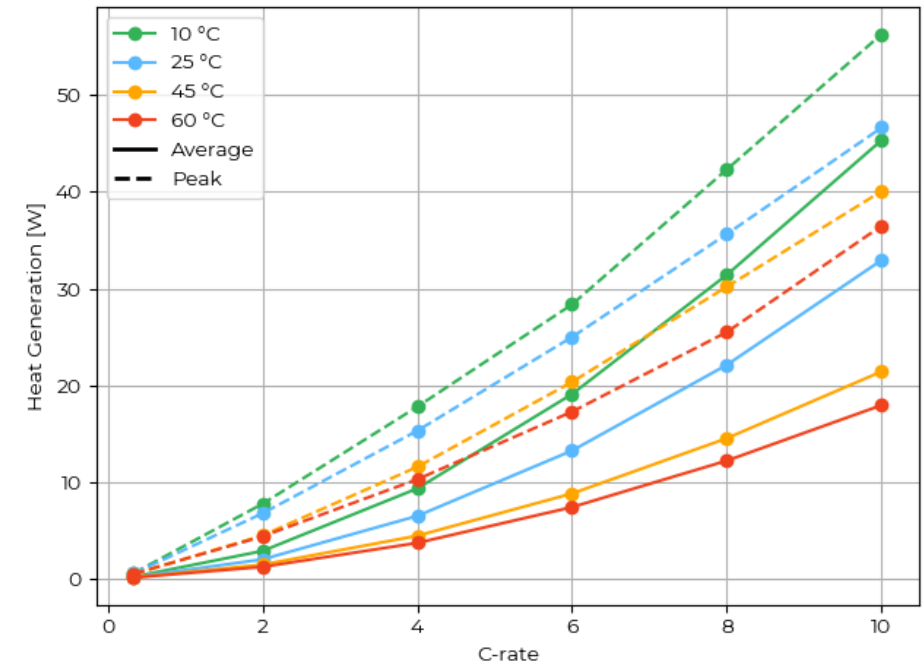
How much heat does the cell produce?

A heat generation profile vs. a single Thermal Efficiency Loss

Thermal behaviour is often the least visible part of cell performance, yet it drives system design. Without early data, cooling is sized on assumptions, which either builds in unnecessary margin or exposes the system to risk when peak loads are reached.

About:Energy's heat generation chart shows heat loss across discharge rates and temperatures, with solid lines for average behaviour and dashed lines for peak values. This allows you to distinguish between steady thermal load and short duration spikes. The key is to track how heat scales with increasing rate, and how the gap between average and peak evolves, particularly as temperature drops.

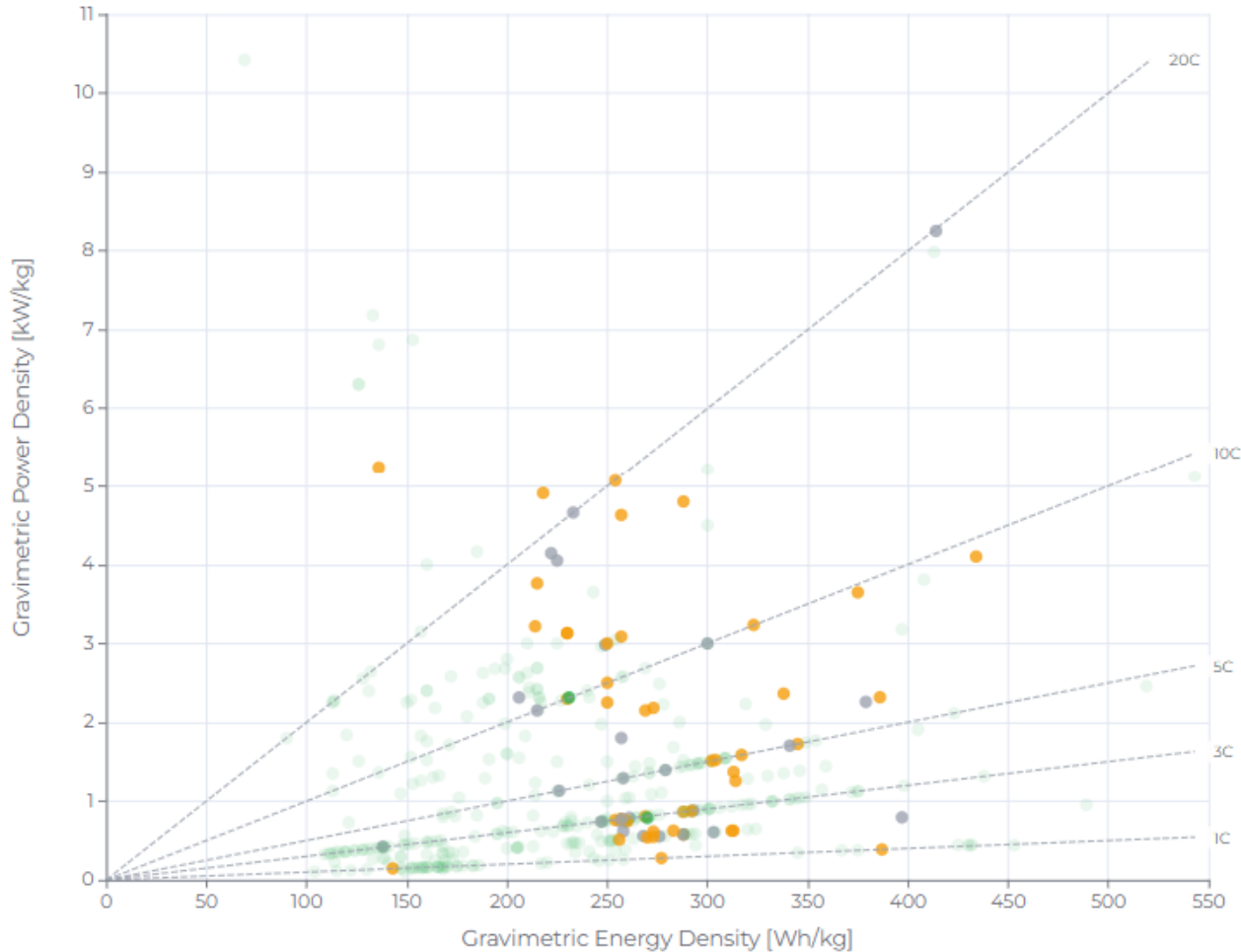
About:Energy reports Thermal Efficiency Loss (TEL) in Wh heat / Wh delivered, measured during a C/3 constant current discharge at a reference temperature of 25 °C. This links thermal output directly to useful work. As a ratio, it compares consistently across formats and chemistries without additional normalisation. Lower values indicate more efficient cells with lower thermal overhead.



EVE 50PL

2.5%

50+ verified high-performance batteries down-selected from 500+



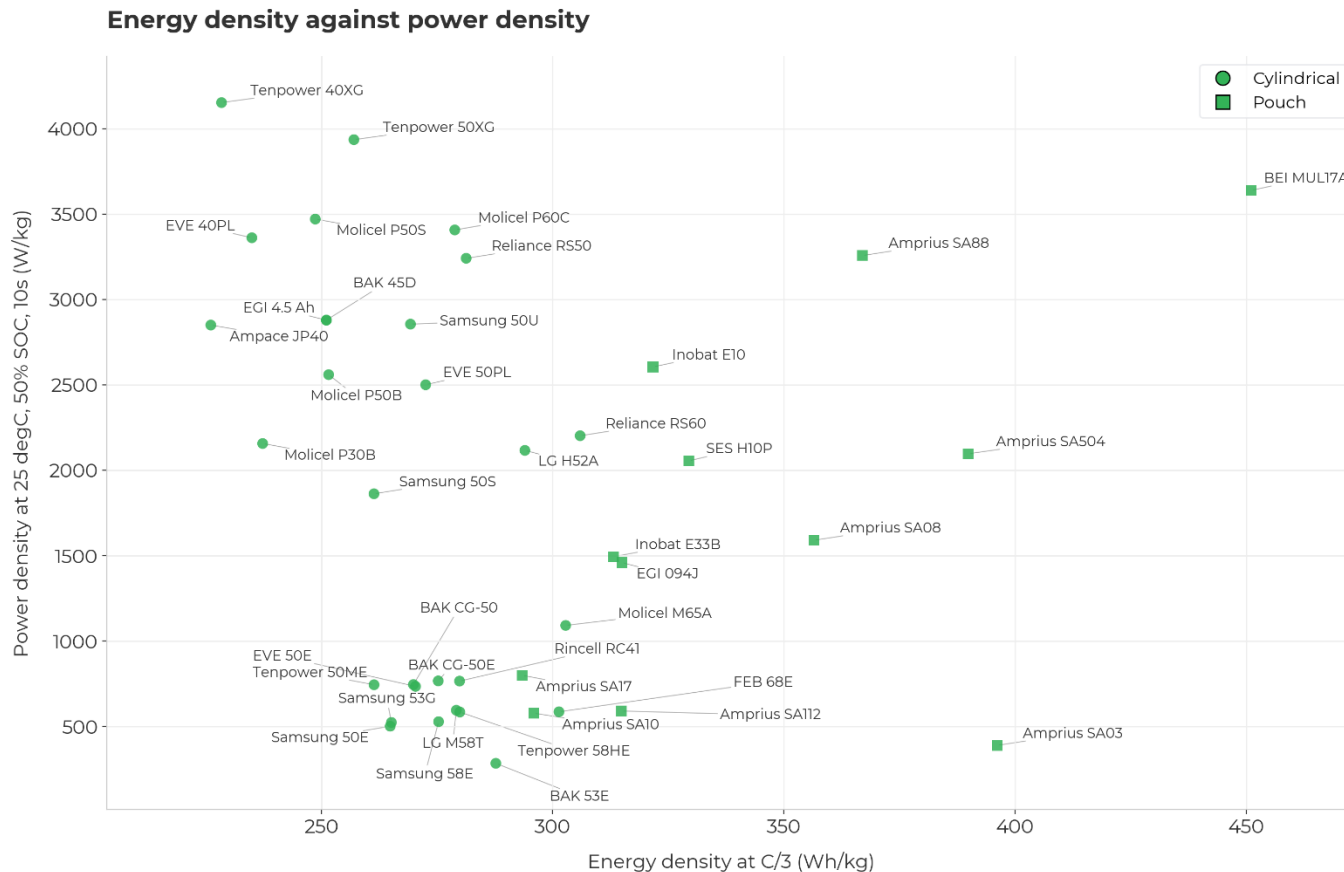
The gold cells are independently verified

[The Voltt battery library](https://voltt.aboutenergy.io) holds data for 500+ lithium-ion cells spanning established and emerging manufacturers. Each point is a published datasheet. Each gold point is a cell About:Energy has tested and modelled, for independent verification. Grey is some of the products going through our labs soon. Green is other.

The cells verified in this report sit at the frontier of the energy-power trade-off. High-power candidates such as Molicel P60C, Tenpower 40XG and EVE 40PL were chosen for applications where sustained discharge rates matter most. High-energy candidates such as Amprius SA03, SA08 and SA88 or BEI MUL03A and MUL20A are used where gravimetric efficiency drives pack design decisions.

The Voltt database continues to grow. Over the next months, additional cells will be independently verified and added as they reach market..

The energy–power trade-off



Source: Voltt cell library, About:Energy. C/3 discharge, 25 degC.

No cell has it all

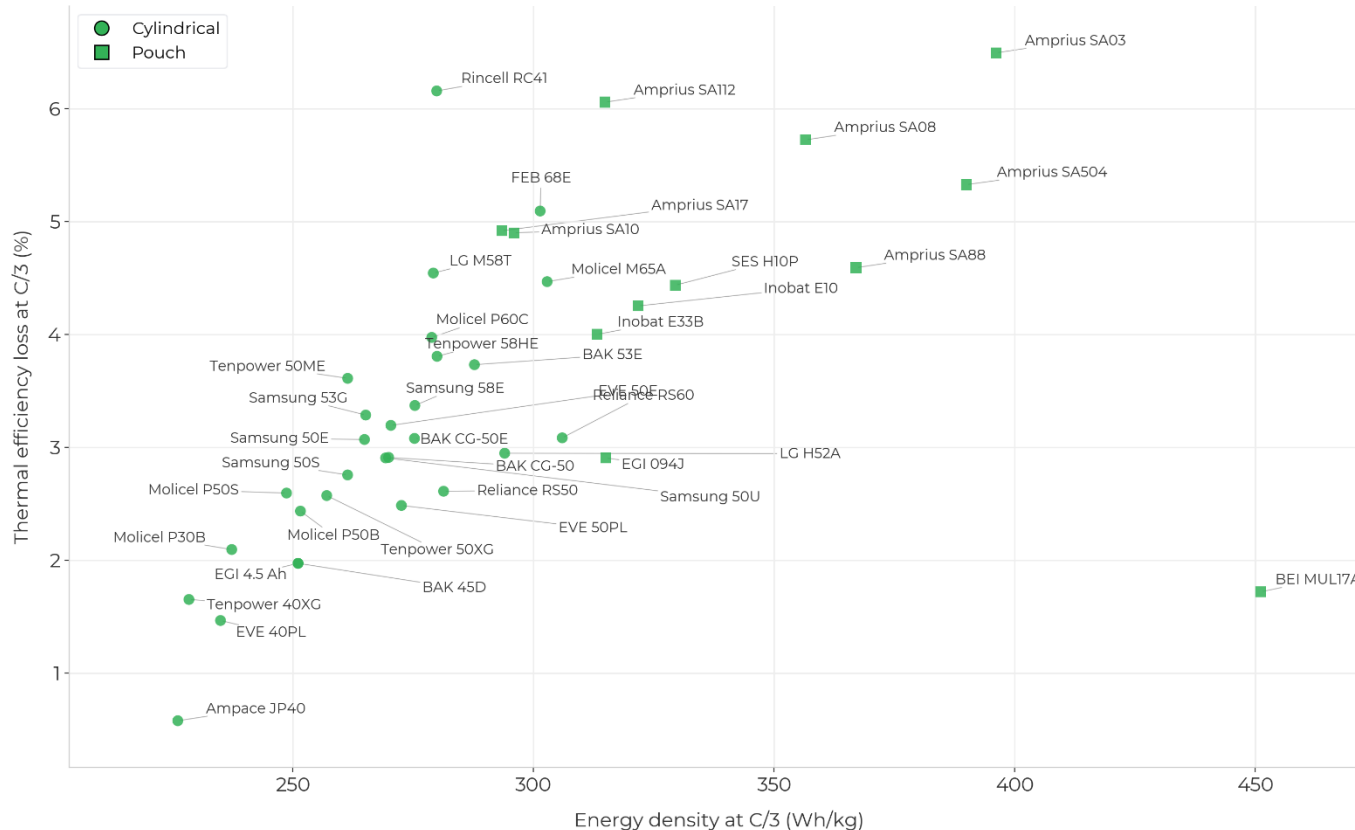
Energy and power trade off by design: thicker electrodes store more but raise resistance and limit peak current. The dataset spans 226 to 451 Wh/kg and 284 to 4,152 W/kg (10 s pulse), with no overall correlation.

Three groupings emerge.

- Top left: a high-power cluster exceeding 2,500 W/kg but below 285 Wh/kg, Tenpower 40XG and 50XG, MoliceL P50S and P60C, EVE 40PL, Reliance RS50 and Ampace JP40.
- Mid-field: a low-power group below 1,100 W/kg, the Samsung, BAK, LG and Amprius SA10, SA17 and SA112 cells, between 260 and 320 Wh/kg. The right edge belongs to Amprius SA03 at 396 Wh/kg and 389 W/kg, the energy extreme.
- Top right: BEI MUL17A sits alone at 451 Wh/kg and 3,639 W/kg, 23% higher specific energy than closest challenger Amprius SA88, at 367 Wh/kg and 3,257 W/kg.

The thermal cost of energy density

Energy density against thermal efficiency loss



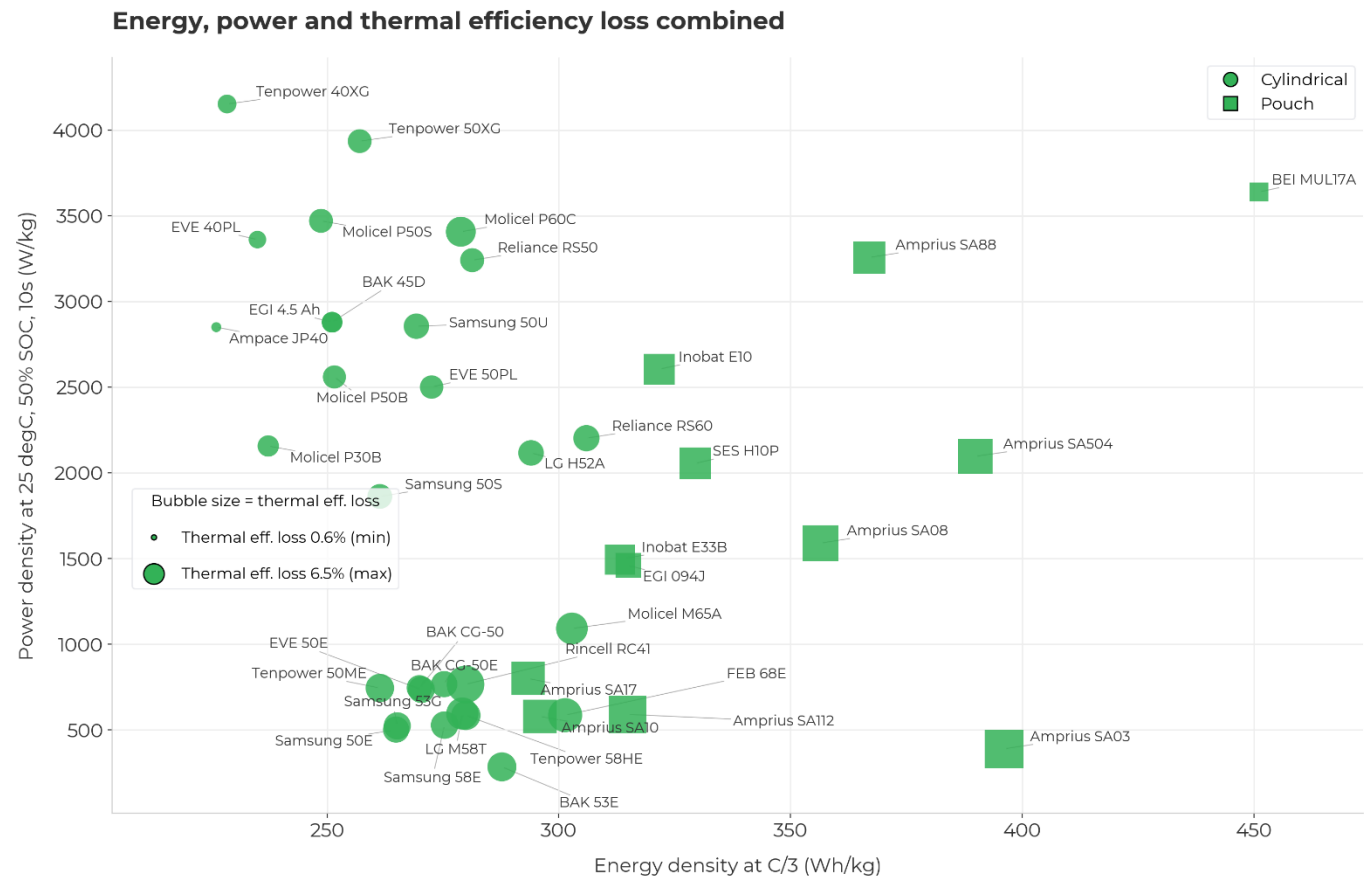
Source: Voltt cell library, About:Energy, C/3 discharge, 25 degC.

Store more energy, waste more as heat

TEL rises with energy density, with clear correlation across the set. Thicker electrodes pack more active material but lengthen ion transport and raise internal resistance, converting more energy to heat even at a modest C/3 rate. The Amprius pouch cells anchor the top-right. SA03 records 6.5% loss at 396 Wh/kg, SA112 6.1% at 315 Wh/kg, SA08 5.7% at 357 Wh/kg. Rincell RC41 (280 Wh/kg, 6.2%) and FEB 68E (301 Wh/kg, 5.1%) show the same trade-off in cylindrical format.

The low energy, low TEL cluster at the bottom left, Ampac JP40 (0.6%), EVE 40PL (1.5%) and Tenpower 40XG (1.7%), reflects thin-electrode designs where low resistance is the defining characteristic. BEI MUL17A is the clear exception, sitting at 451 Wh/kg with only 1.7% loss, roughly a quarter of what its energy density would predict.

The cell performance landscape



One chart, three trade-offs, no easy answers

The bubble chart brings the trade-off into a single view. Energy density at C/3 on x, 10s pulse power density on y, bubble size representing TEL. Unlike the earlier 1C dataset, the top-right corner is no longer empty. BEI MUL17A occupies it outright at 451 Wh/kg and 3,639 W/kg with a 1.7% bubble, the smallest of any cell above 300 Wh/kg.

The top-left cluster, Tenpower 40XG, EVE 40PL, Ampace JP40 and MoliceL P30B, carries the smallest bubbles in the set. High power, low TEL, low energy. Thin electrodes minimise resistance, so these cells run cool at C/3 but store least. The Amprius family strings across the right half with consistently large bubbles, SA03 at 396 Wh/kg and 6.5% loss being the extreme case. More storage, more heat. The dense mid-field between 260 and 300 Wh/kg and below 1,000 W/kg holds most of the commodity 21700s. Amprius SA88 is the only other cell combining a top-quartile position on both axes with a mid-sized bubble.



Company Profiles – Category 1 (Verified)

Overview of high-performance cell manufacturers, including relevant commercial products, using manufacturer data our third-party verified test data



Ampace



Founded in 2021 as a joint venture between CATL and ATL, Ampace is a vertically integrated lithium-ion battery company headquartered in Xiamen, China. Its cylindrical cell portfolio serves drones, robotics, and industrial power tools, with its JP series targeting high-discharge, high-load applications demanding reliable performance in demanding field conditions.

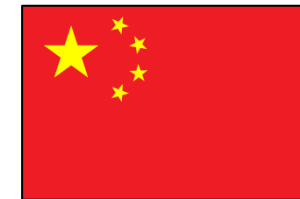
Ampace's 400+ Wh/kg energy density cells and semi-solid-state technology are suited to weight-critical platforms. Its Jumbo Power series supports industrial power tools requiring sustained output, while its drone and robotics cells emphasise thermal management and cycle durability.

Key focus areas

Power tools, Drones,
Robotics

Key Facts

Founding Year	Headquarters
2021	China
Chemistry	A:E Verification
Lithium-ion	Yes



Ampace Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
JP30	18650	3	11.1	14.5	56	18.7	629	222	11739	4144
21700A	21700	4	14.8	8	45	11.3	589	211	6628	2379
JP40	21700	4	14.8	8	60	15	595	214	8930	3217
JP50	21700	5	17.9	-	60	12	710	249	8524	2983

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



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46

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



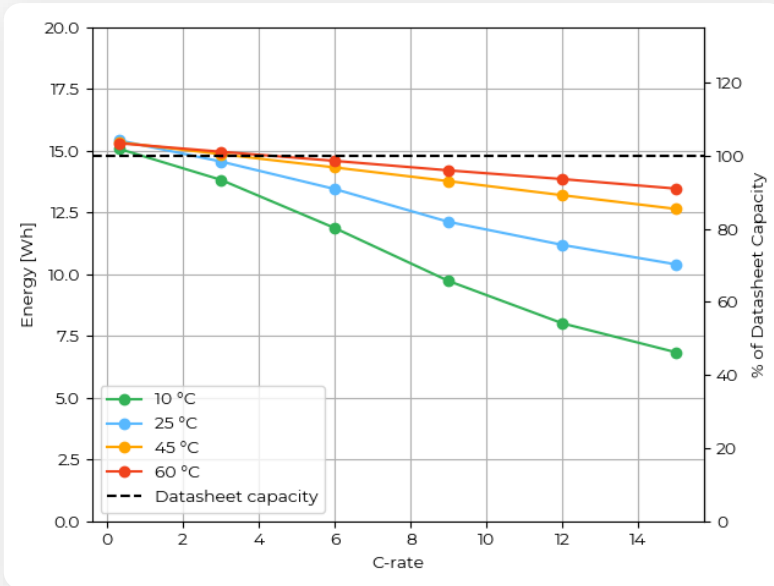
Ampace JP40



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

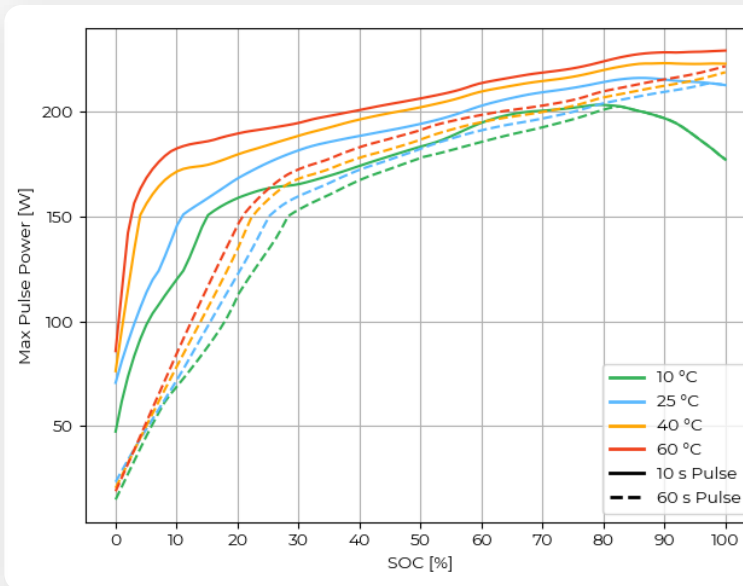


Energy Density: 226 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

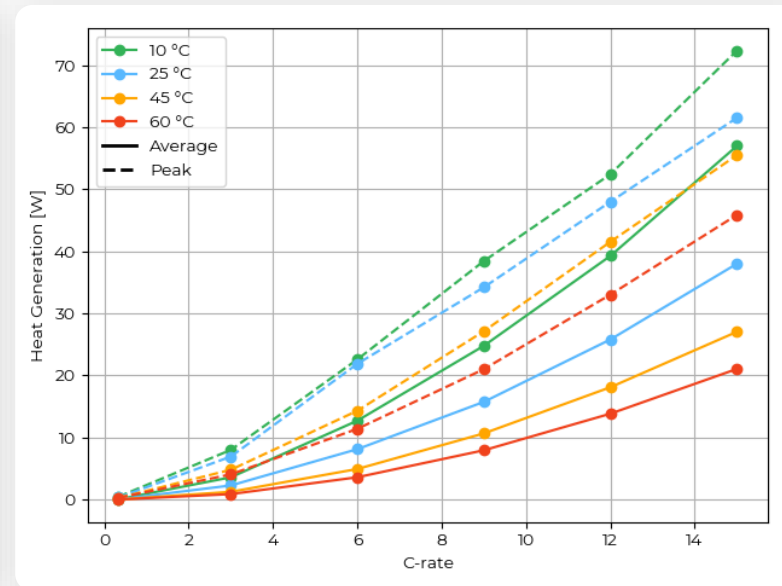


Power Density: 2850 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 0.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

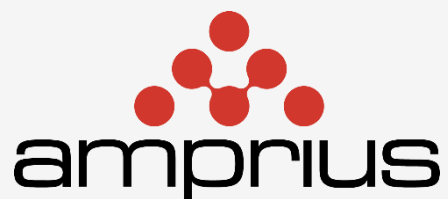
For data on 500+ cells: voltt.aboutenergy.io



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47

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



Amprius Technologies



Amprius Technologies is a US-headquartered developer and manufacturer of advanced lithium-ion battery cells based on proprietary silicon anode technology. The company focuses on delivering industry-leading gravimetric and volumetric energy density for demanding aerospace and mobility applications.

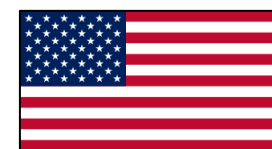
Founded in 2008, Amprius has progressed from research-led development to commercial production, with pilot manufacturing in the United States and contract manufacturing partnerships in Asia.

Key focus areas

Drones, Power tools,
e-mobility

Key Facts

Founding Year	Headquarters
2008	United States
Chemistry	A:E Verification
Lithium-ion	Yes



Amprius Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
SA03	Pouch	11.6	39.44	3.93	11.6	1	796	387	796	387
SA08	Pouch	10.8	36.72	32.4	54	5	730	345	3652	1724
SA108	Pouch	9.9	34.65	29.7	49.5	5	826	349	4129	1743
SA129	Pouch	14.5	51.04	14.5	72.5	5	673	302	3365	1510
SA133	Pouch	70	245	70	210	3	698	332	2095	996
SA17	21700	6	21.6	6	18	3	810	288	2429	864
SA504	Pouch	10.8	37.57	21.6	66.3	6.1	805	386	4828	2317

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



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49

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Amprius Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
SA88	Pouch	10.5	36.23	102	102	9.7	849	375	8247	3647
SA90	Pouch	1.25	4.25	1.25	4	3.2	722	357	2311	1143
SA10	18650	4	14.4	4	8	2	821	288	1643	576
SA110	18650	3.85	14.08	4	12	3.1	803	293	2410	880
SA112	21700	6.35	22.5	4.55	13	2	857	313	1713	625

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

50

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Amprius Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
SA117	21700	5.9	20.768	4.2	12	2	795	288	1617	587
SA124	21700	4.95	18	10	50	10.1	672	257	6721	2571

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io

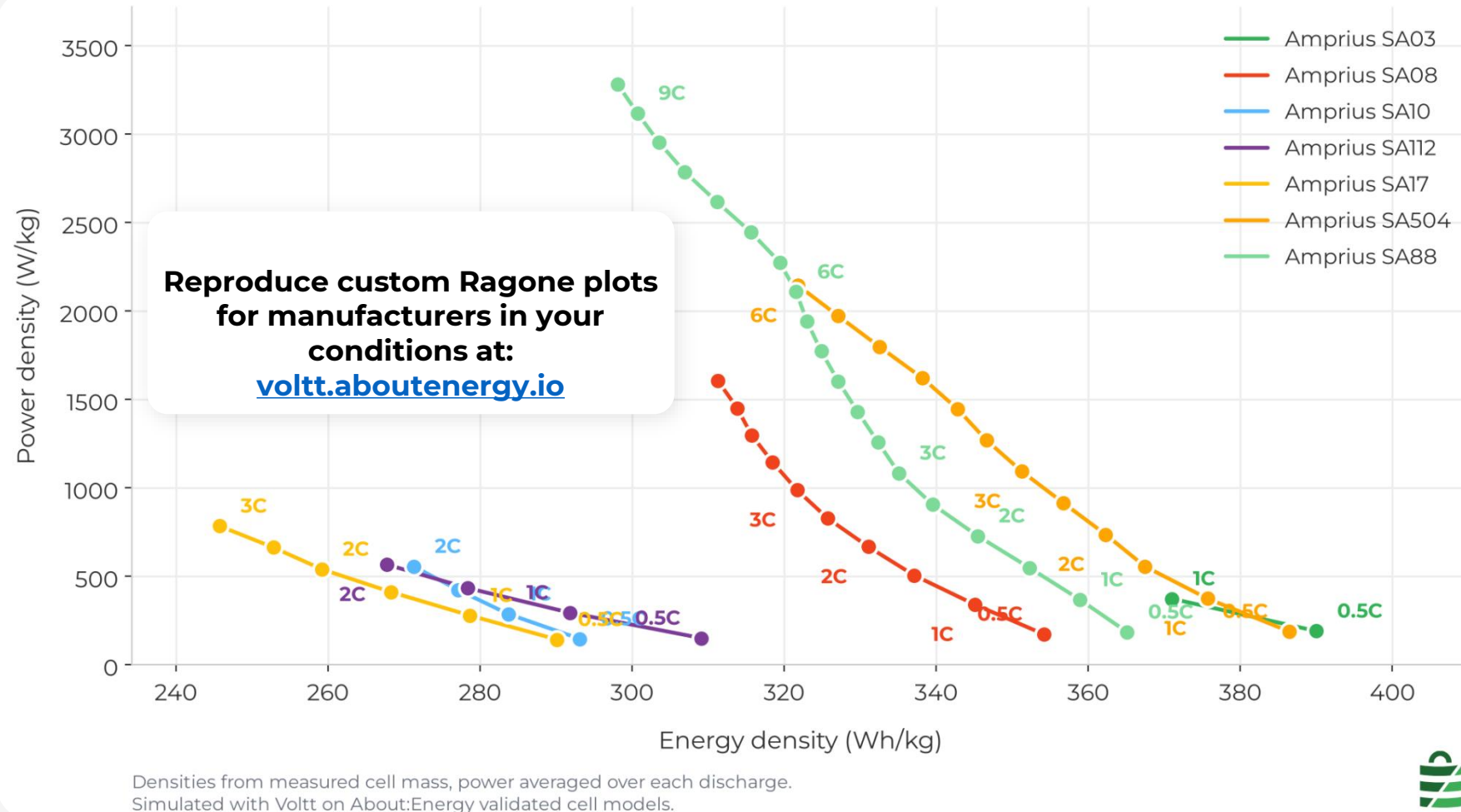


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51

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Amprius Battery Cell Products – Energy and Power Density





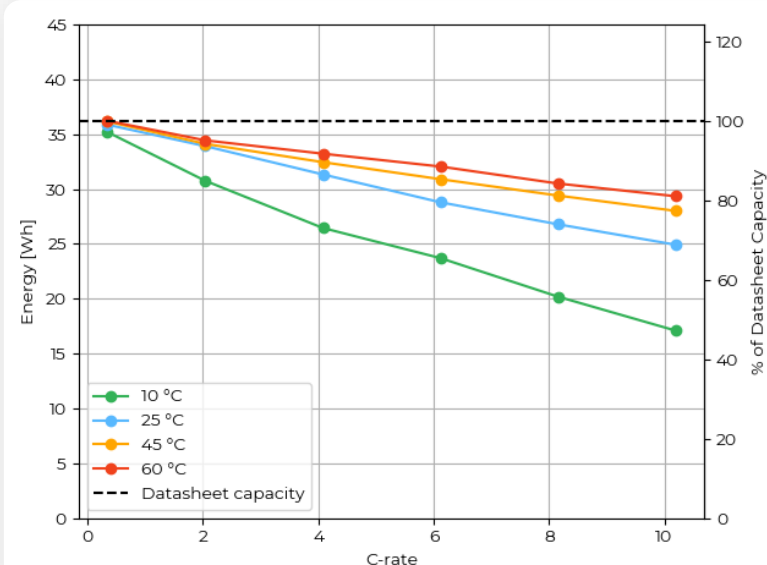
Amprius SA88



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

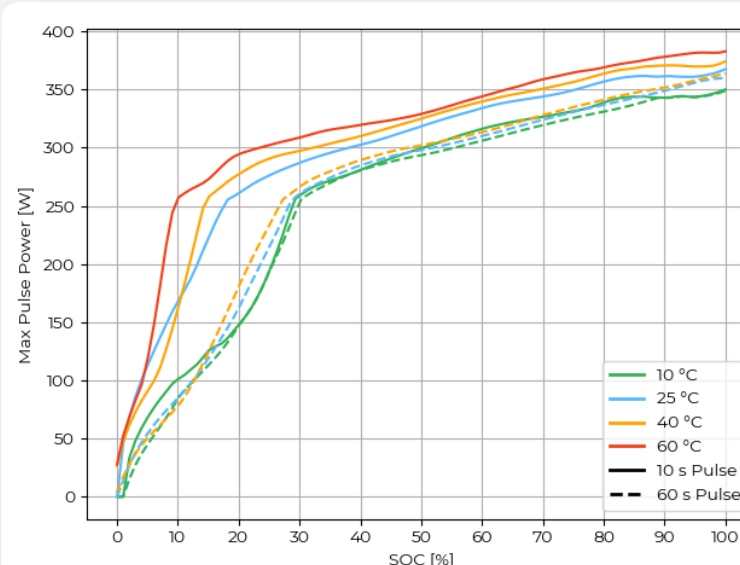


Energy Density: 367 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

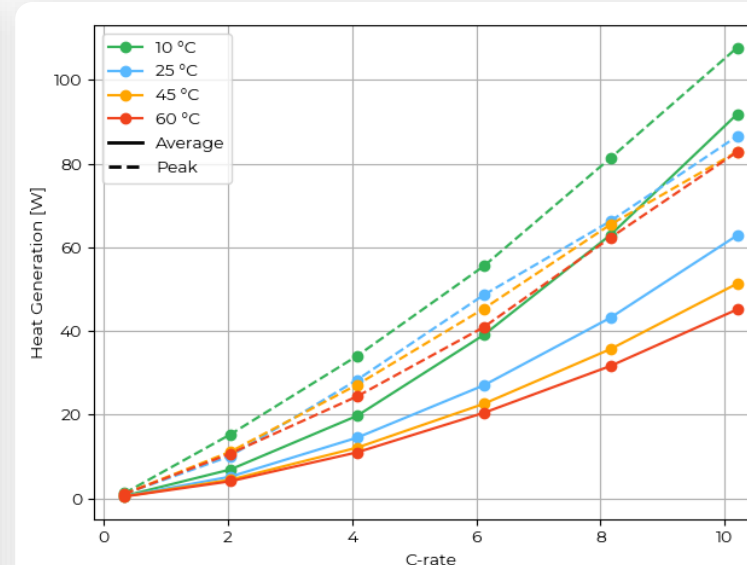


Power Density: 3257 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



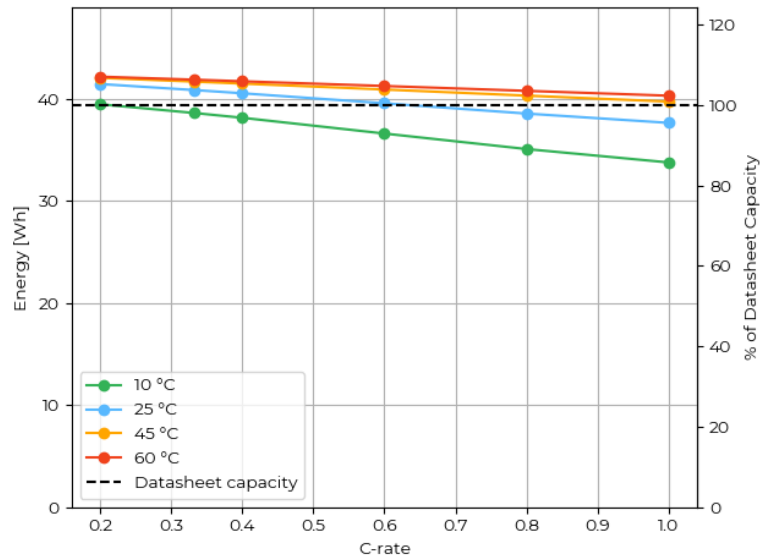
Amprius SA03



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

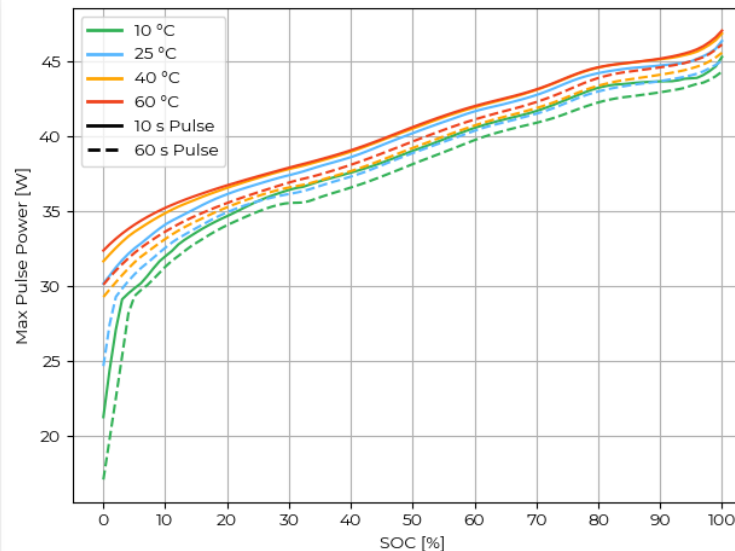


Energy Density: 396 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

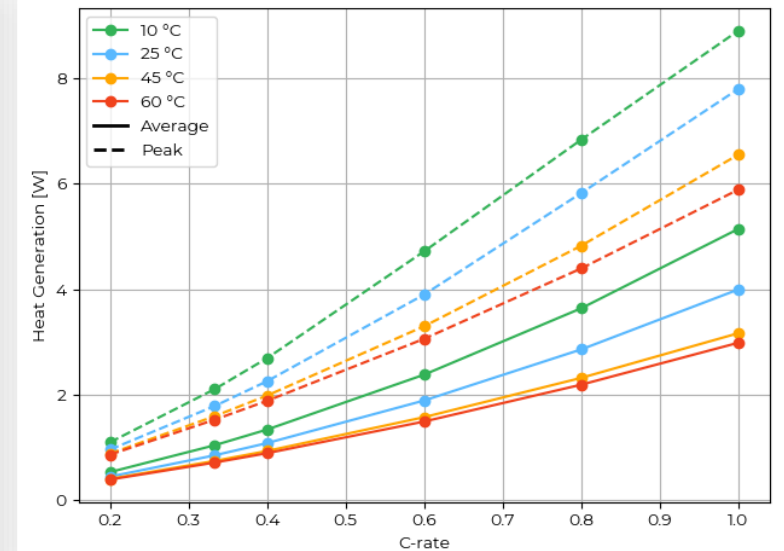


Power Density: 389 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 6.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

54

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



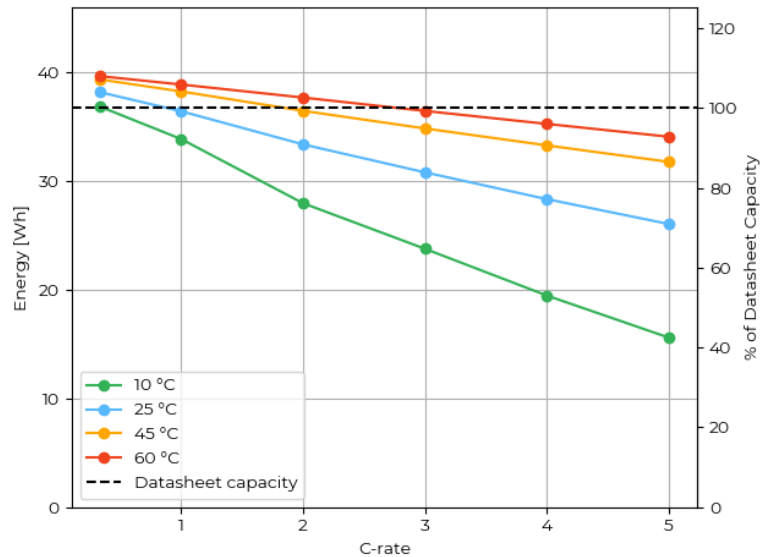
Amprius SA08



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

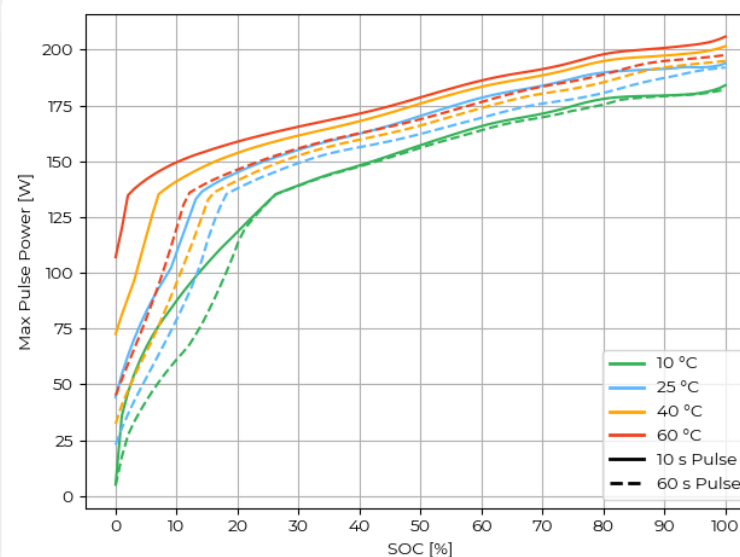


Energy Density: 357 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

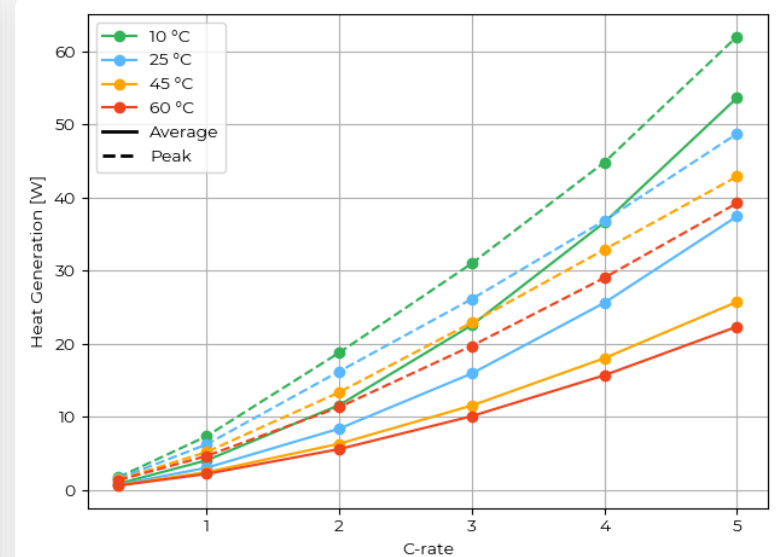


Power Density: 1590 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 5.7%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



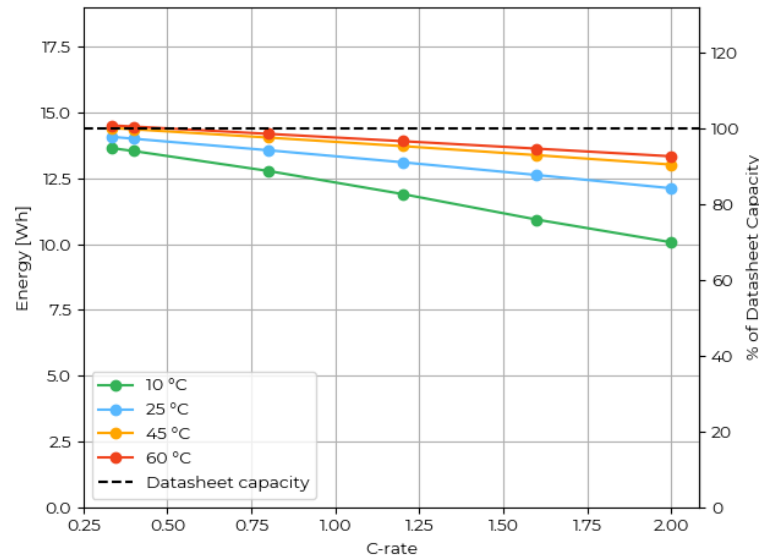
Amprius SA10



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

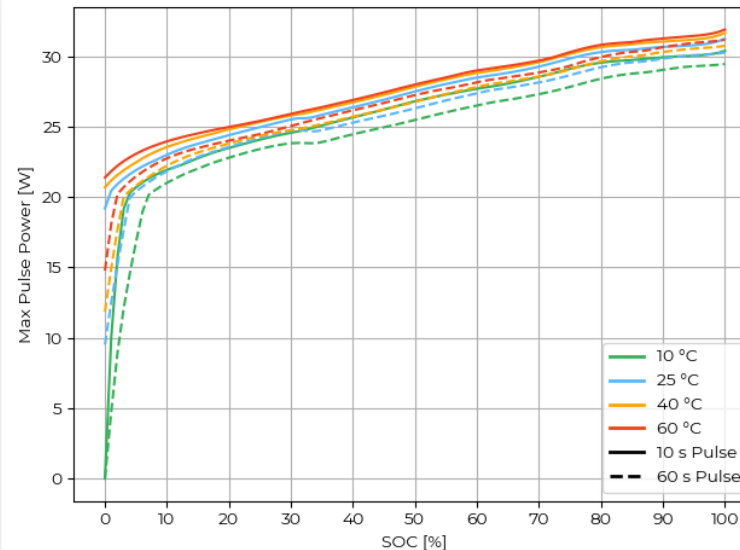


Energy Density: 296 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

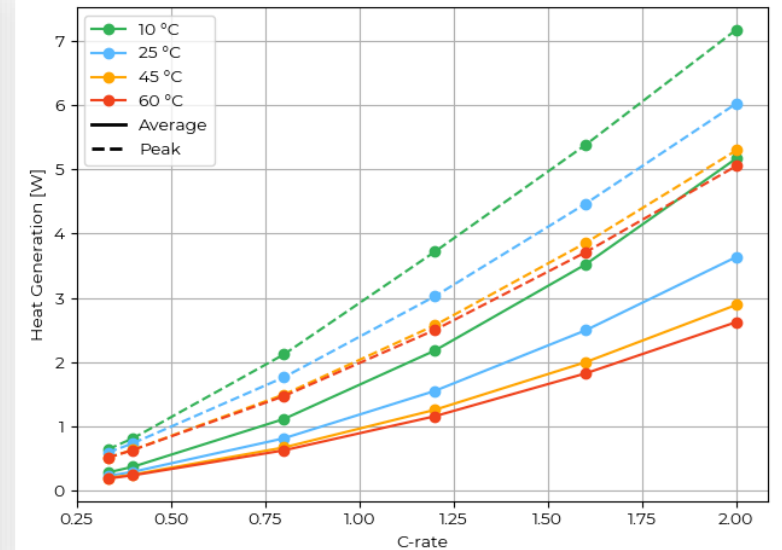


Power Density: 578 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.9%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



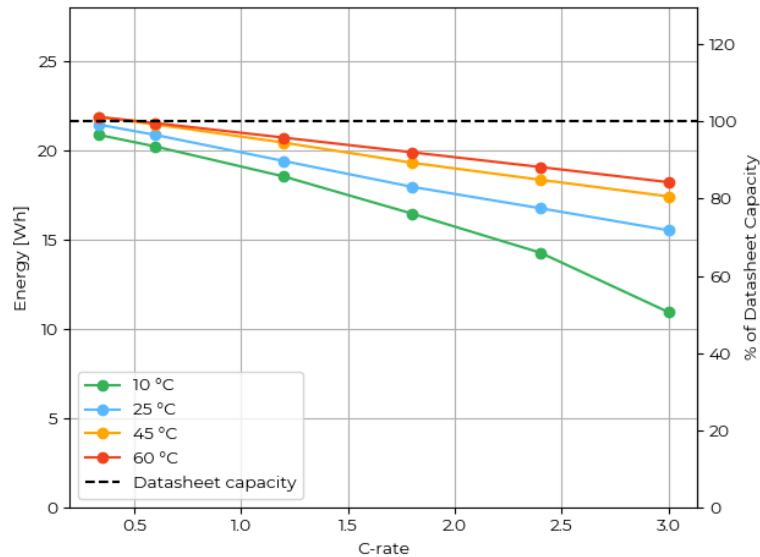
Amprius SA17



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

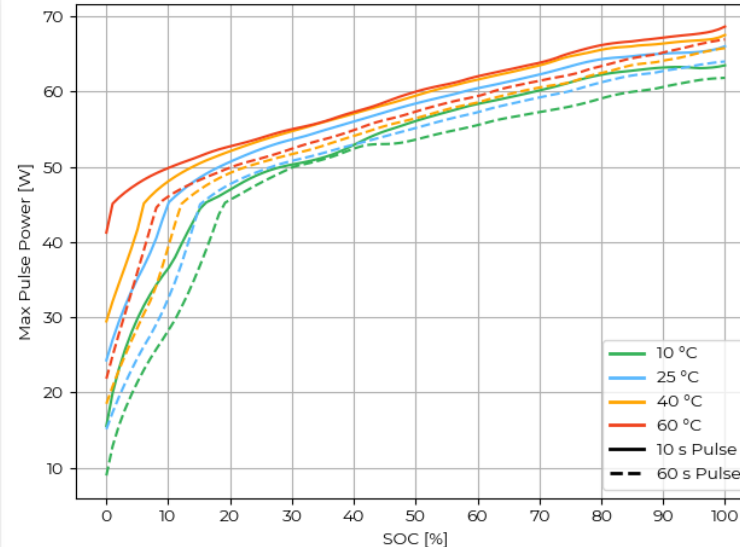


Energy Density: 293 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

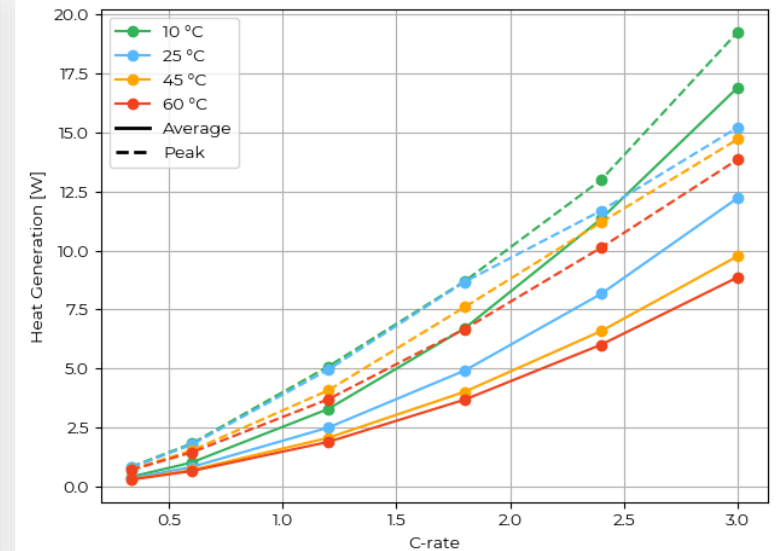


Power Density: 800 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.9%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



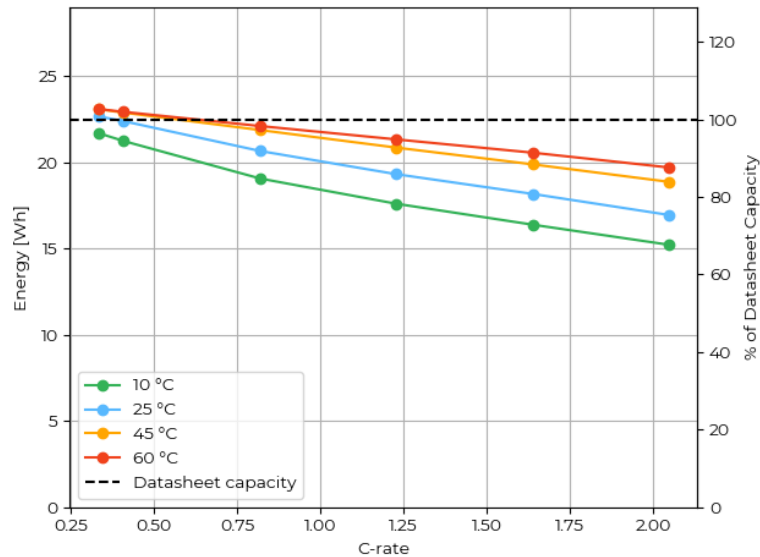
Amprius SA112



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

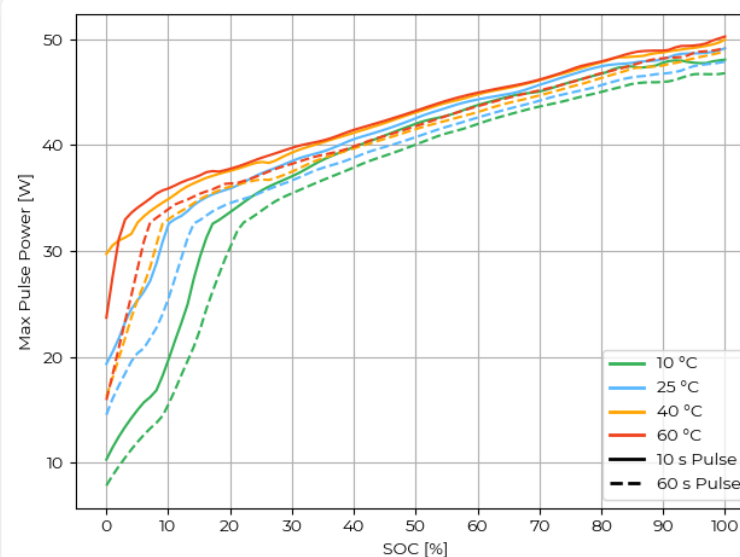


Energy Density: 315 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

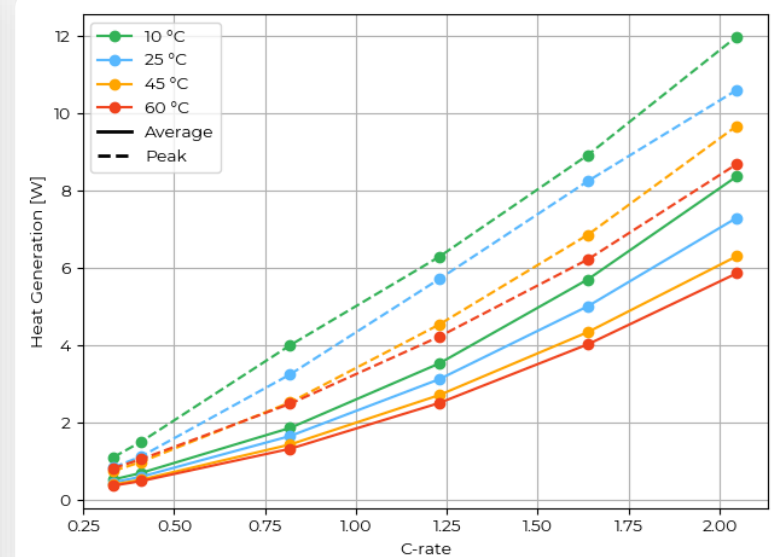


Power Density: 590 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 6.1%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

58

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



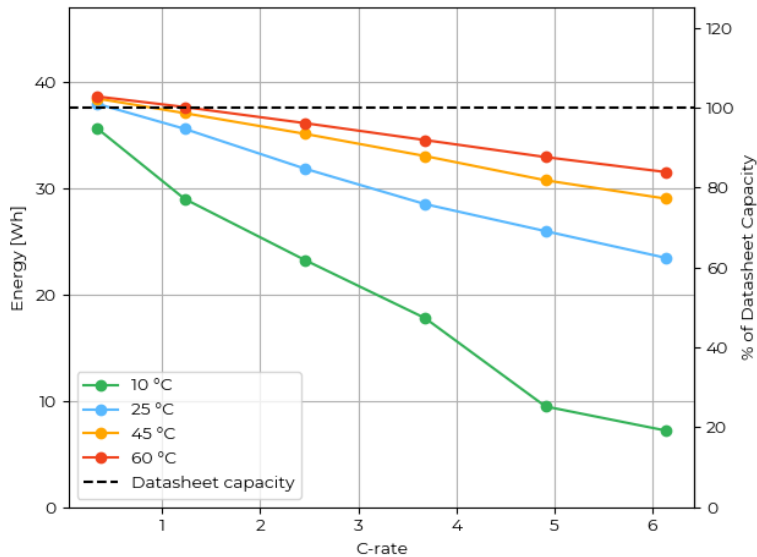
Amprius SA504



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

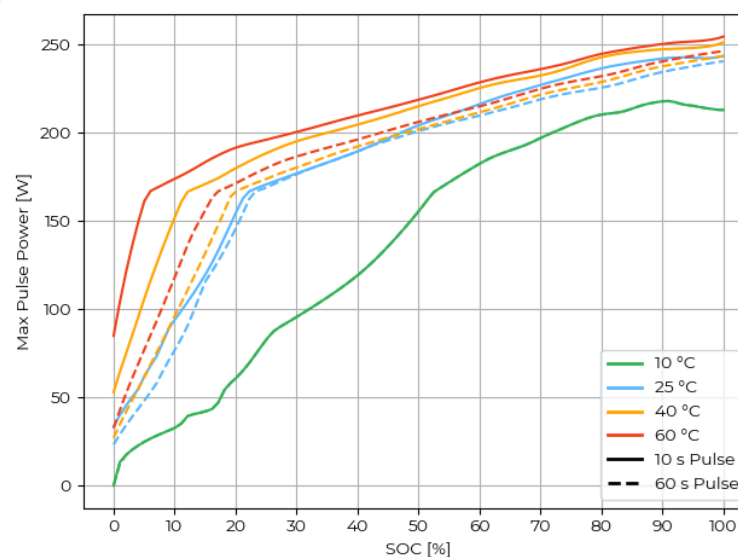


Energy Density: 390 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

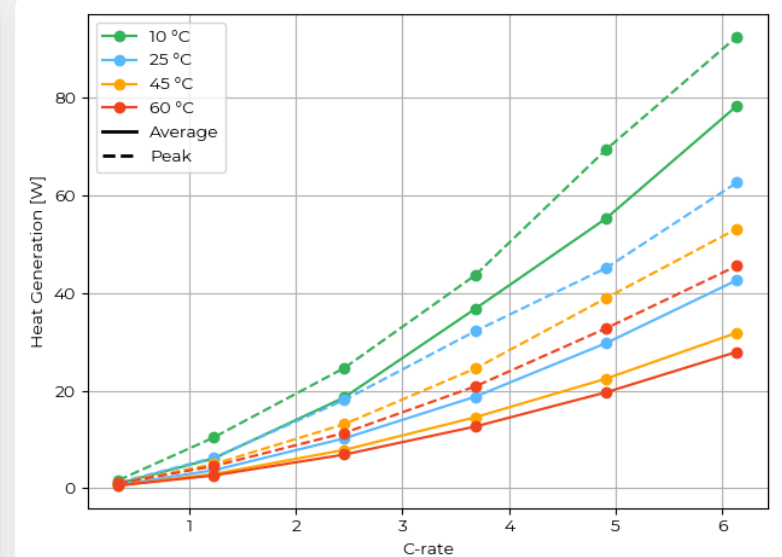


Power Density: 2096 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 5.3%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



BAK



Founded in 2001 and headquartered in Shenzhen, BAK is a Chinese lithium-ion cell manufacturer producing cylindrical formats for robotics, power tools, drones, and eVTOL applications. Its tabless 21700 cell architecture is designed for high-power, high-load scenarios requiring stable output under thermal and mechanical stress.

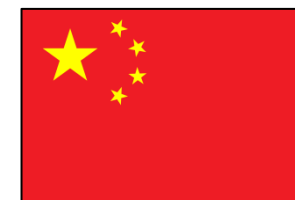
BAK's 21700 series can deliver 50A maximum discharge current and operation across -20°C to 80°C, targeting power tools and robotics. The company is actively extending its tabless platform into eVTOL and BBU data centre markets.

Key focus areas

Power tools, Drones,
Robotics

Key Facts

Founding Year	Headquarters
2001	China
Chemistry	A:E Verification
Lithium-ion	Yes



BAK Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
45D	21700	4.4	15.84	13.2	60	13.6	619	230	8447	3130
58E	21700	5.6	20.7	5.6	11.2	2	789	280	1537	545
60D	21700	6	21.6	18	35	5.8	-	-	-	-
65E	21700	6.35	22.225	12.7	25.4	4	869	296	3517	1199
CG-50	21700	4.9	18	4.9	14.7	3	707	257	2079	756
CG-50E	21700	4.9	18	4.9	14.7	3	707	257	2079	756

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

61

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



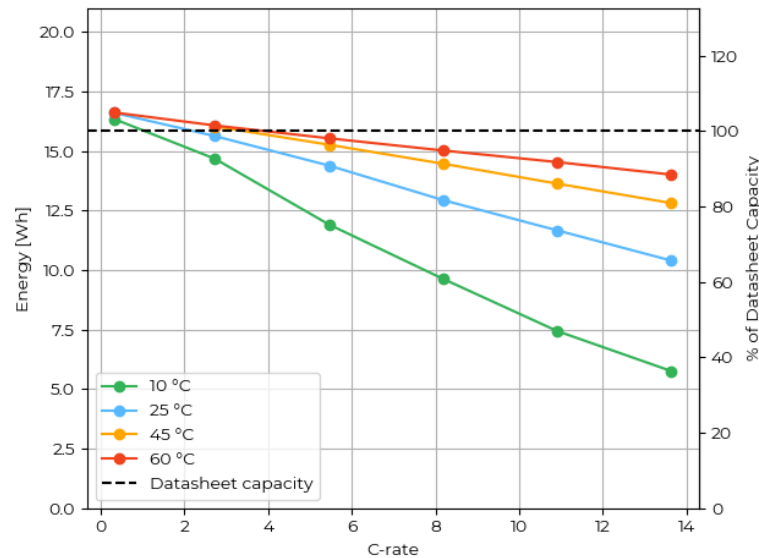
BAK 45D



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

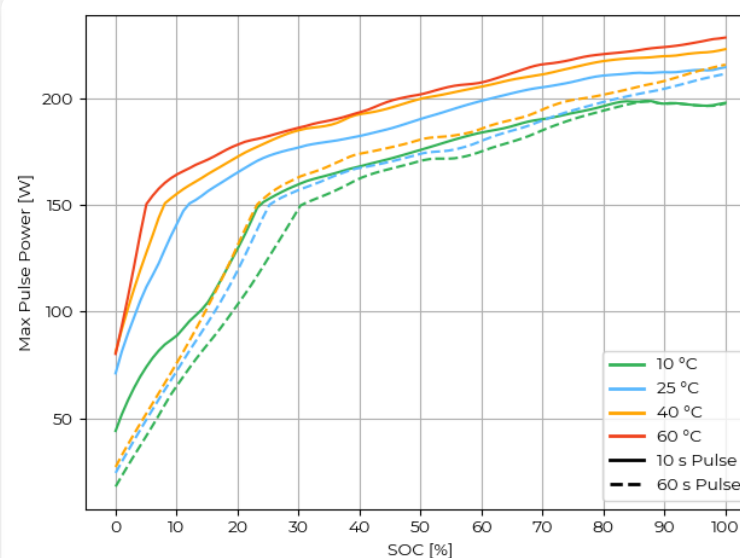


Energy Density: 251 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

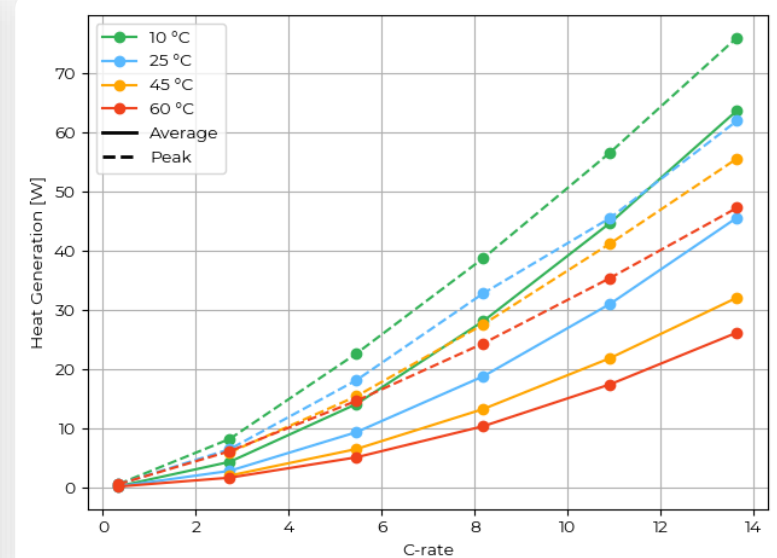


Power Density: 2879 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



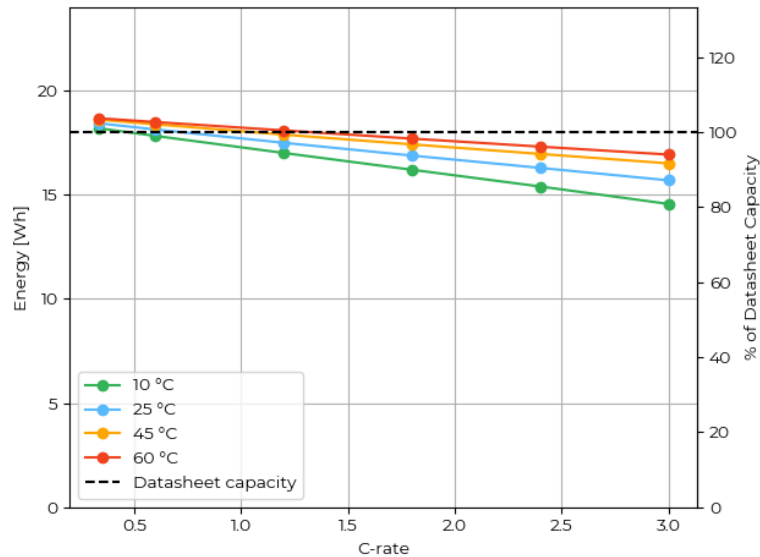
BAK CG-50



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

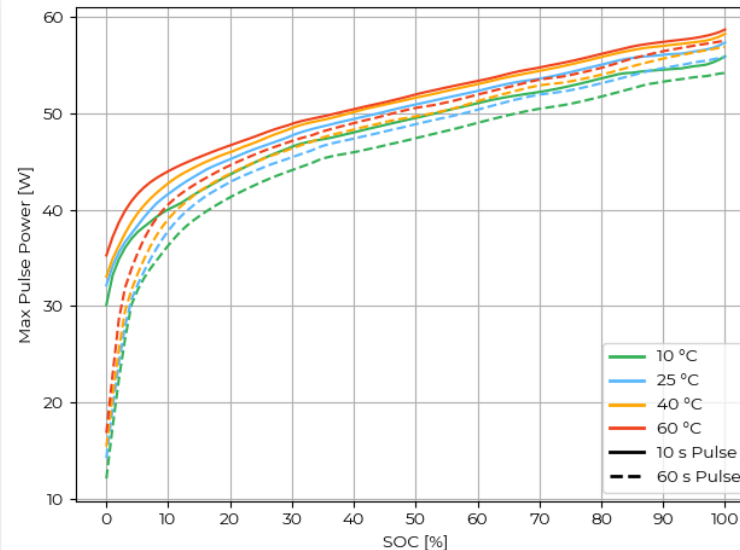


Energy Density: 270 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

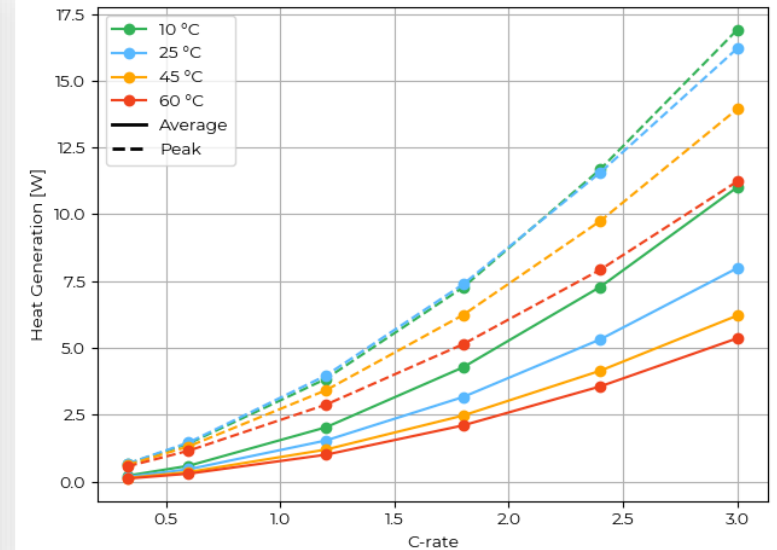


Power Density: 745 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.9%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



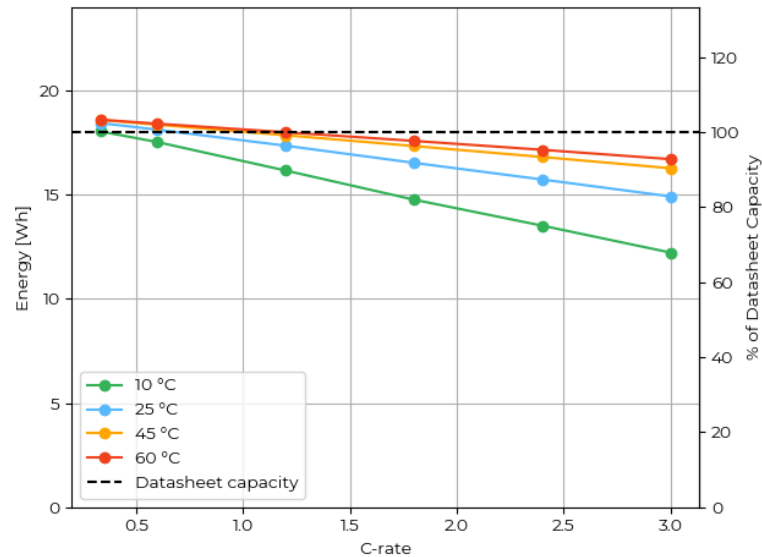
BAK CG-50E



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

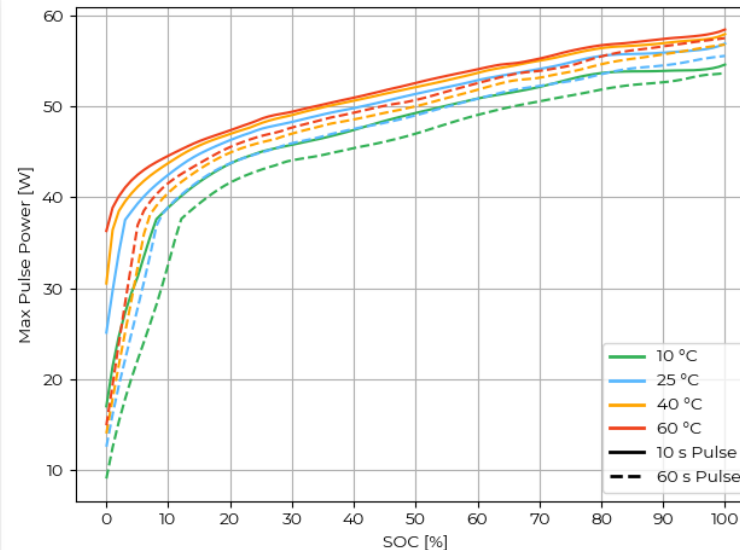


Energy Density: 275 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

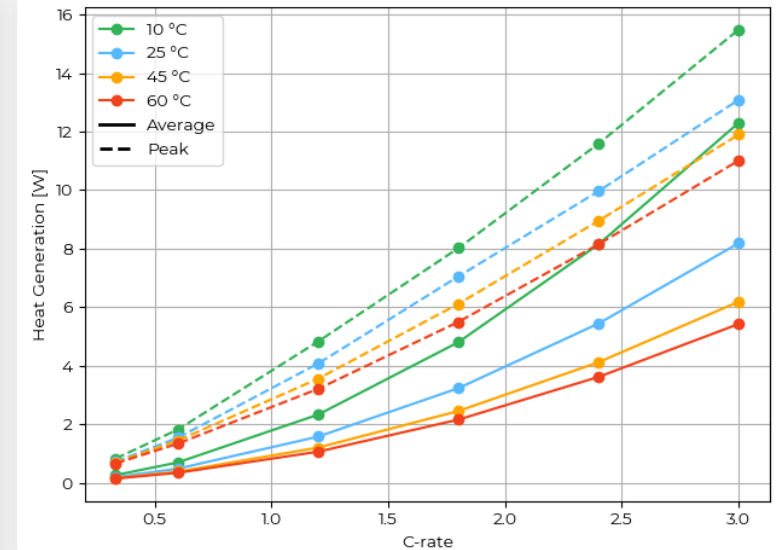


Power Density: 767 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.1%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



BEI



Headquartered in Ansan, South Korea, BEI Corp. develops ultra-lightweight lithium-metal batteries and customized battery-pack solutions for UAV, robotics, and defense applications. Its flagship AFLMB architecture, manufactured without a pre-installed lithium-metal anode, achieves 520 Wh/kg with high-power capability,

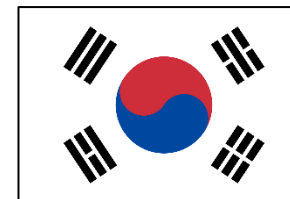
enabling longer flight endurance and increased payload. BEI also develops LMB solutions incorporating an ultrathin lithium-metal layer and customized battery-pack solutions, supports NDAA-aligned sourcing, and serves Tier 1 and Tier 2 unmanned-system manufacturers, with growing traction in UAV and defense markets.

Key focus areas

Drones, e-mobility,
robotics

Key Facts

Founding Year	Headquarters
2020	South Korea
Chemistry	A:E Verification
Lithium-metal	Yes



BEI Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
MSF03A	Pouch	3.1	11.966	12	60	19.4	762	413	14748	7986
MUL03A	Pouch	3.1	12	12	62	20	725	414	14452	8252
MUL03S	Pouch	3	11.52	12	24	8	734	397	5869	3178
MUL16A	Pouch	17	65.62	16	80	4.7	1220	405	5740	1906
MUL17A	Pouch	18	69.4	68	170	9.4	946	434	8945	4101
MUL17B	Pouch	18	69.48	51	170	9.4	1033	429	9758	4051
MUL17S	Pouch	18.2	69.706	51	170	9.3	920	408	8589	3808

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

66

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

BEI Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
MSF03A	Pouch	3.1	11.966	12	60	19.4	762	413	14748	7986

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



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67

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



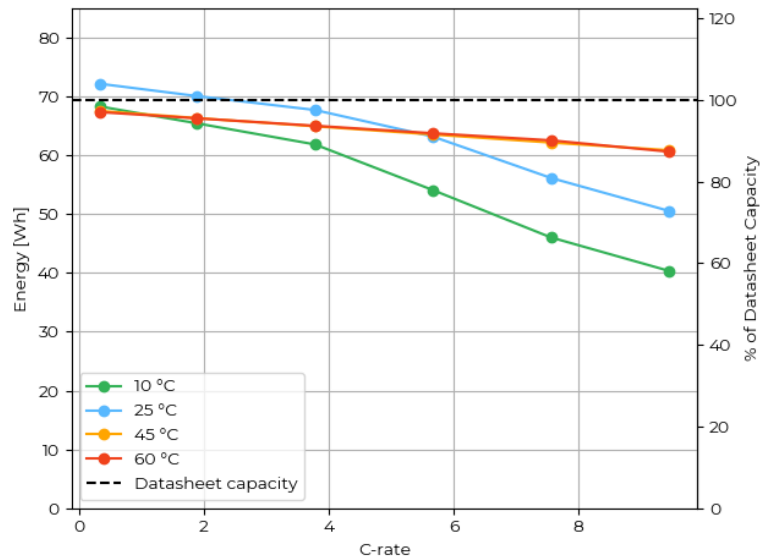
BEI MUL17A



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

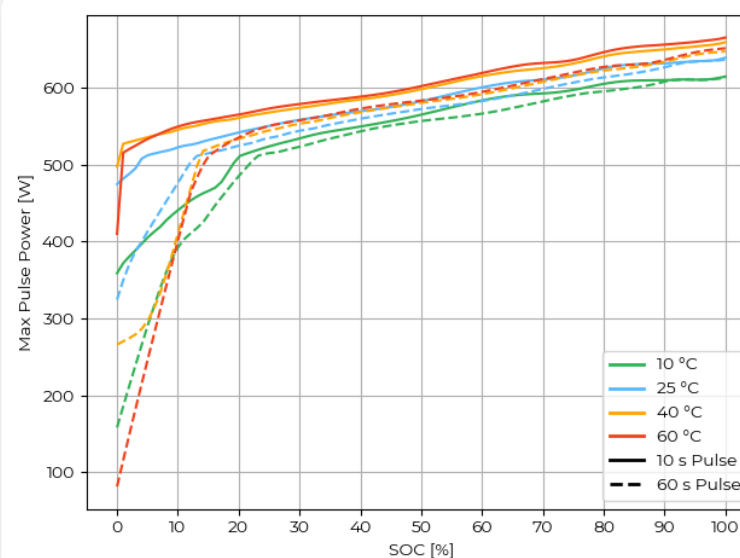


Energy Density: 451 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

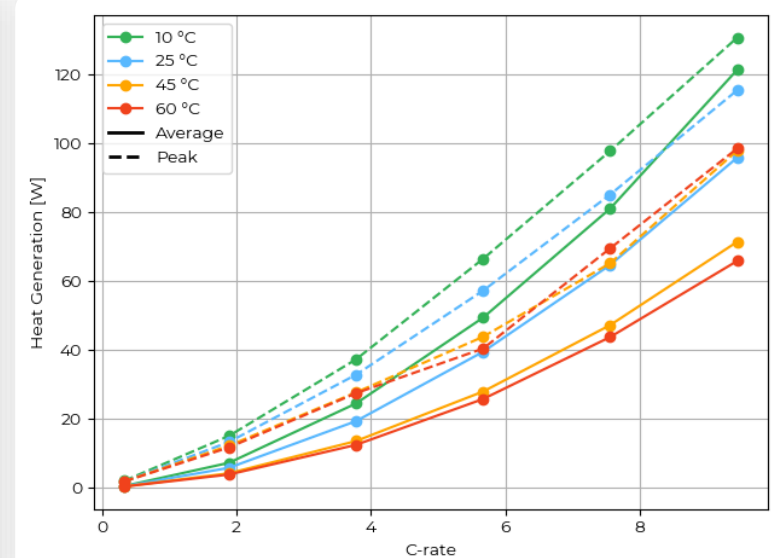


Power Density: 3639 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 1.7%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



Enpower Greentech



Headquartered in Palo Alto, California, with subsidiaries in China and Japan, Enpower Greentech is a lithium metal and all-solid-state battery developer focused on commercialising next-generation cell chemistry for electric vehicles and aerospace platforms. Its proprietary lithium interface technology addresses dendrite growth, the main barrier that has historically kept lithium metal

batteries out of commercial production. Enpower's cells reach 450 to 520 Wh/kg, while maintaining strong cycle life and safety performance. The company targets high-value applications where weight is critical, including electric aviation, stratospheric platforms, and next-generation EVs.

Key focus areas

Aerospace, E-mobility, Drones

Key Facts

Founding Year **2012** Headquarters **United States**

Chemistry **Lithium-ion/metal** A:E Verification **Yes**



Enpower Greentech Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
0035J	Pouch	3.5	13.44	0.7	17.5	5	662	423	3310	2113
0090J	Pouch	9.7	37.248	1.94	29.1	3	696	438	2087	1315
0094J	Pouch	9.4	33.84	18.8	47	5	676	302	3379	1511
0108J	Pouch	10.8	37.908	16.2	32.4	3	843	372	2529	1115
0120J	Pouch	12	43.2	24	60	5	655	279	3273	1394
0150J	Pouch	15	52.5	15	45	3	869	375	2606	1125
0175J	Pouch	17.5	64.225	26.25	70	4	578	261	2313	1044

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

Enpower Greentech Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
0220J	Pouch	22	80.74	22	110	5	661	291	3304	1457
0245J	Pouch	24.5	89.915	24.5	122.5	5	660	292	3301	1460
0260J	Pouch	26	93.6	26	130	5	714	309	3570	1545
0267J	Pouch	26.7	96.12	26.7	133.5	5	706	309	3529	1545
0290J	Pouch	29	106.43	29	145	5	689	295	3443	1474
0310J	Pouch	31	111.6	31	155	5	722	309	3610	1546
0325J	Pouch	32.5	119.275	32.5	162.5	5	685	297	3426	1487

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

Enpower Greentech Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
0350J	Pouch	35	126	35	175	5	745	317	3723	1587
0390J-A	Pouch	39	137.28	117	156	4	811	346	3245	1383
0610J	Pouch	61	217.16	183	183	3	698	320	2095	959
4.5Ah	21700	4.4	15.8	13.2	60	13.6	619	230	8447	3130

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



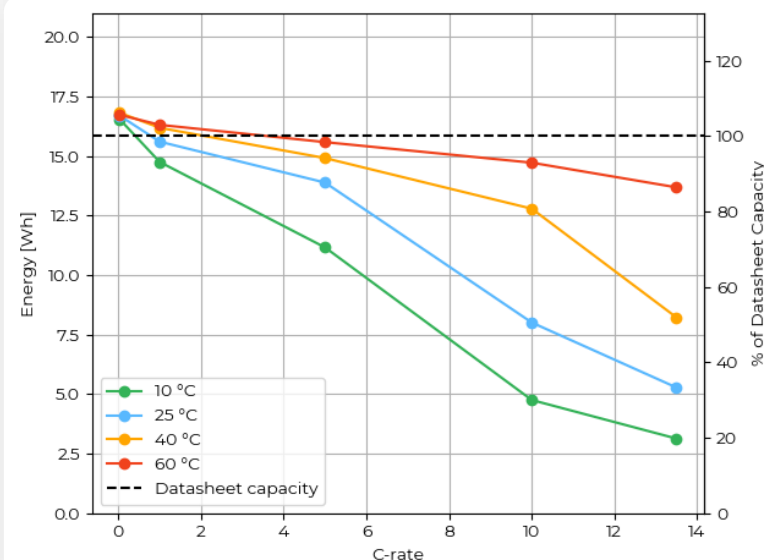
Enpower Greentech 4.5 Ah



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

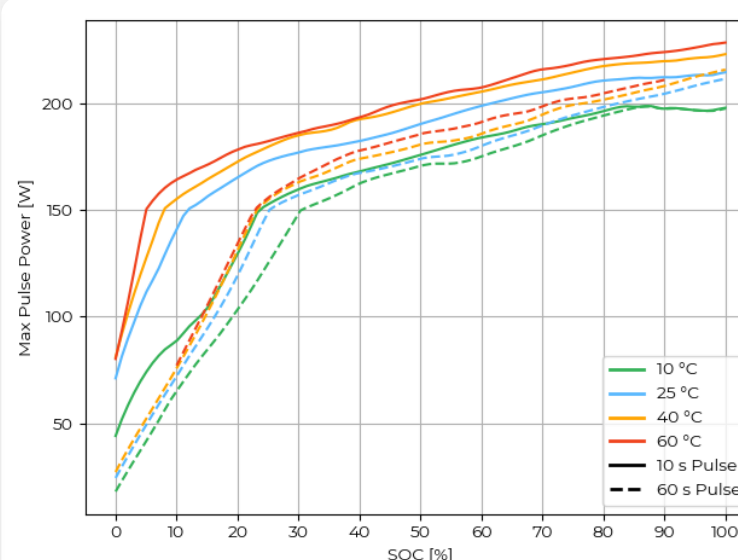


Energy Density: 236 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

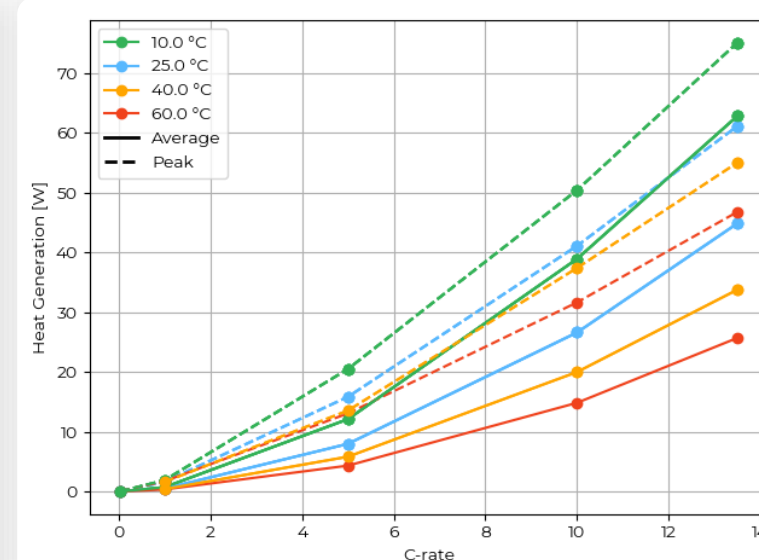


Power Density: 2879 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.3%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

73

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



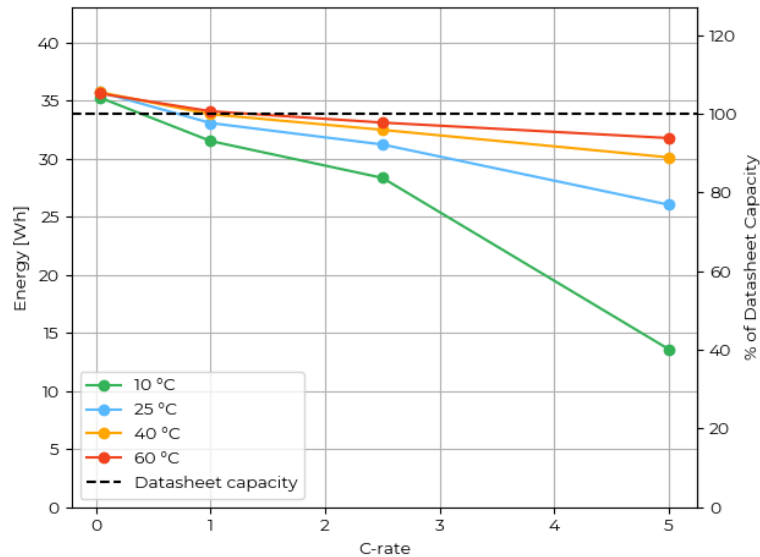
Enpower Greentech XNP094J



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

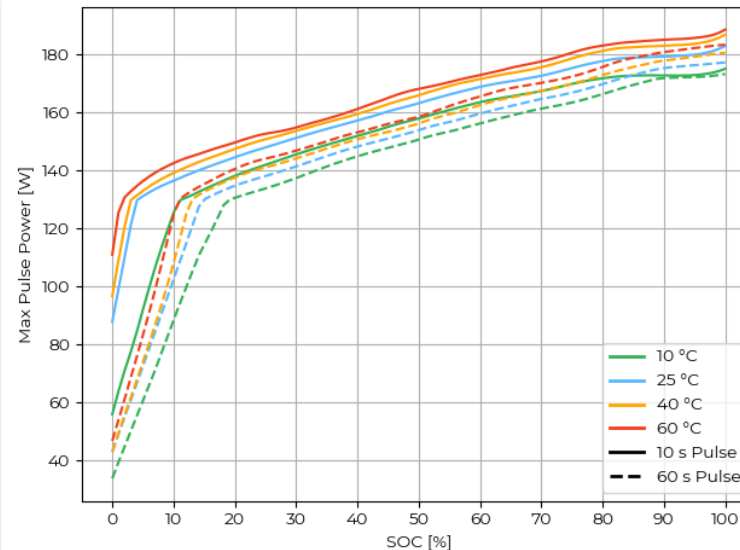


Energy Density: 296 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

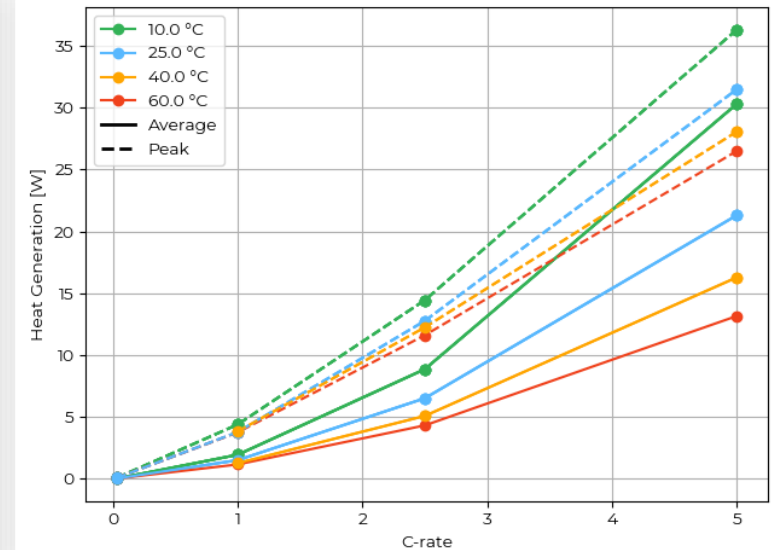


Power Density: 1459 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

74

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



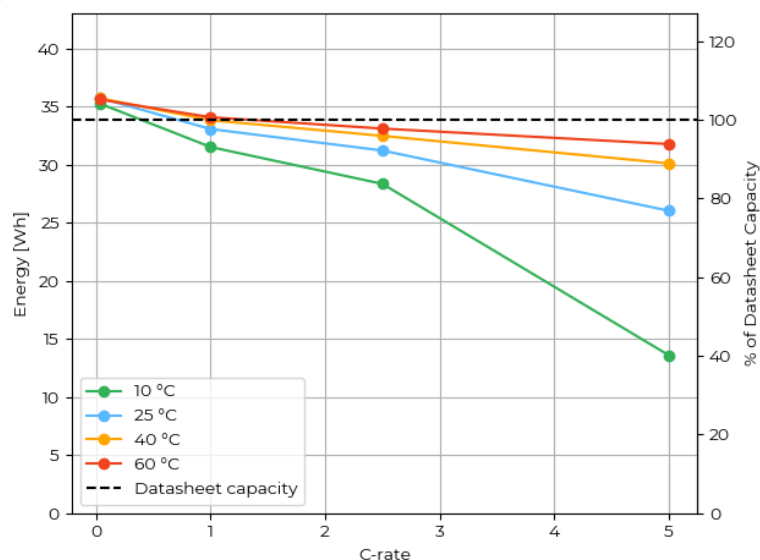
Enpower Greentech XNP0120J



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

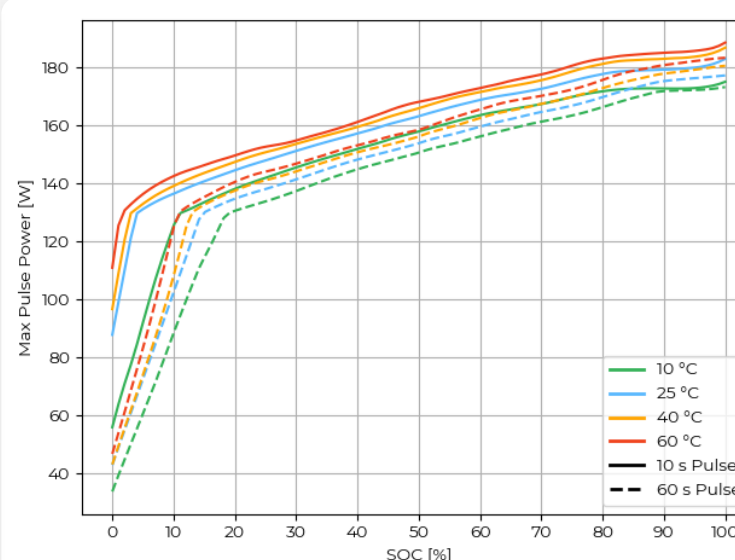


Energy Density: 296 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

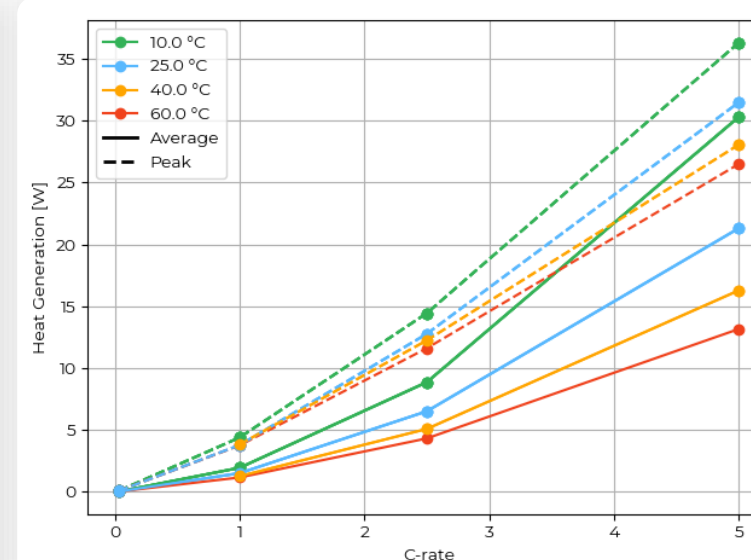


Power Density: 1459 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

75

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



EVE Energy



Founded in 2001 and listed on the Shenzhen Growth Enterprise Market, EVE Energy is a major Chinese lithium-ion manufacturer headquartered in Huizhou. The company has expanded into drones, eVTOL, and robotics with dedicated cylindrical cell platforms, earning AS9100D aerospace certification and inclusion in Morgan Stanley's Top 100 Robotics manufacturers.

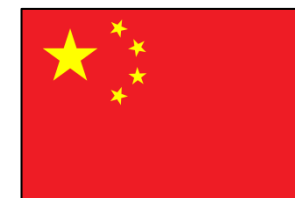
EVE's G-Series robotics cells support ultra-fast 9-minute charging with wide temperature operation from -35°C to 65°C. Its tabless cylindrical formats, including 50PL, are targeted at industrial robots, UAVs, and high-intensity autonomous platforms.

Key focus areas

Drones, Robotics,
eVTOL

Key Facts

Founding Year	Headquarters
2001	China
Chemistry	A:E Verification
Lithium-ion	Yes



EVE Energy Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
30PL	18650	3	10.95	9	60	20	628	233	12557	4660
40PL	21700	4	14.4	8	70	17.5	578	215	10108	3761
50E	21700	5	18.25	-	15	3	732	257	2196	771
50PL	21700	5	18	10	50	10	724	250	7238	2500
58E	21700	5.7	20.52	5.7	17.1	3	798	289	2395	867
26120	26120	12.7	45.72	63.5	88.9	7	717	286	5020	2000
26700	26700	6.8	24.48	49.64	54.4	8	654	278	5235	2225

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

77

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

EVE Energy Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
4695E	4695	30	110.1	30	120	4	692	259	2766	1036

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

78

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



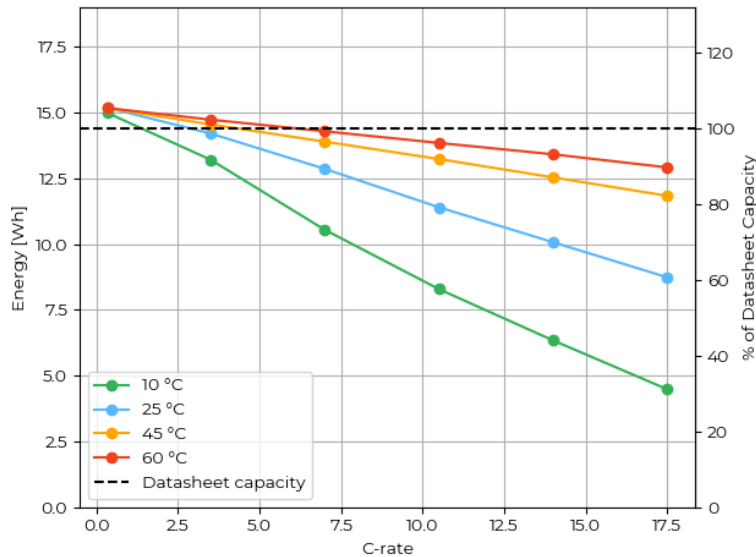
EVE 40PL



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

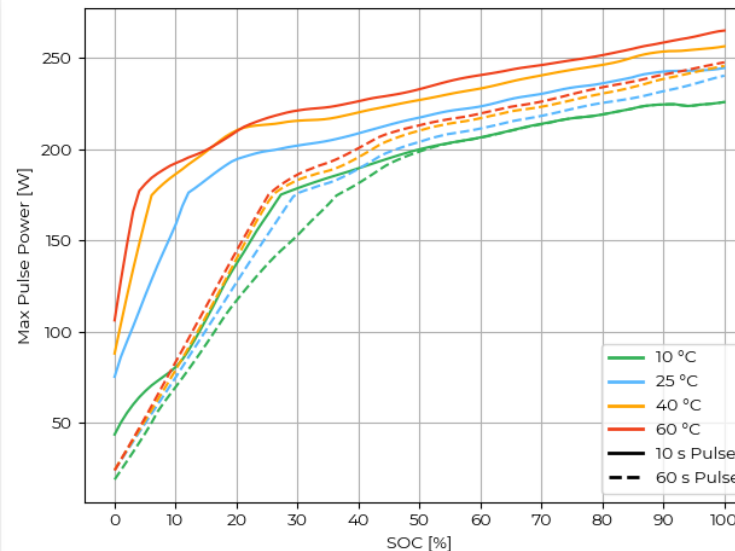


Energy Density: 235 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

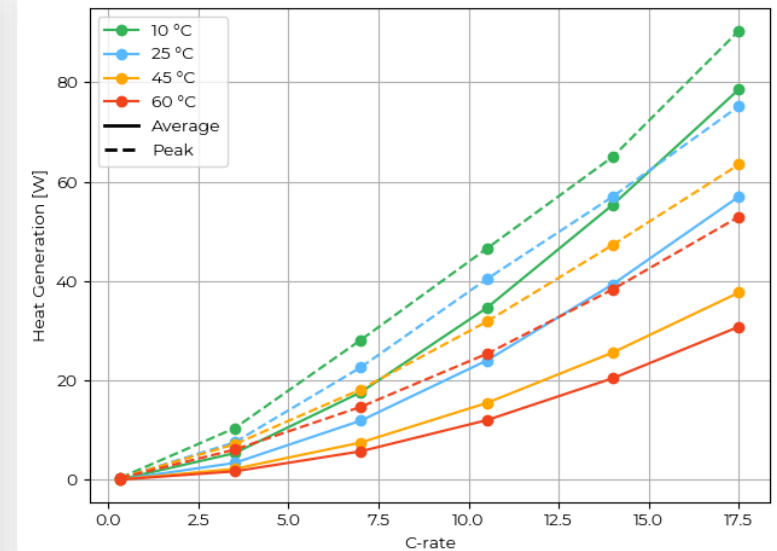


Power Density: 3361 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 1.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



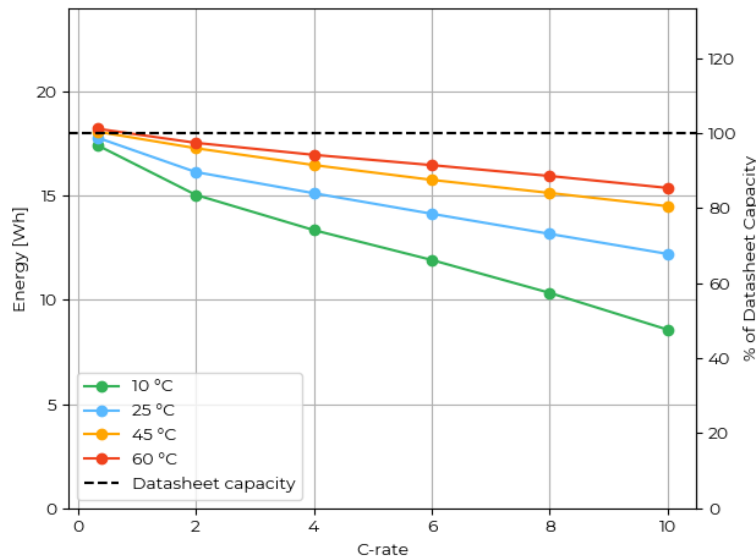
EVE 50PL



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

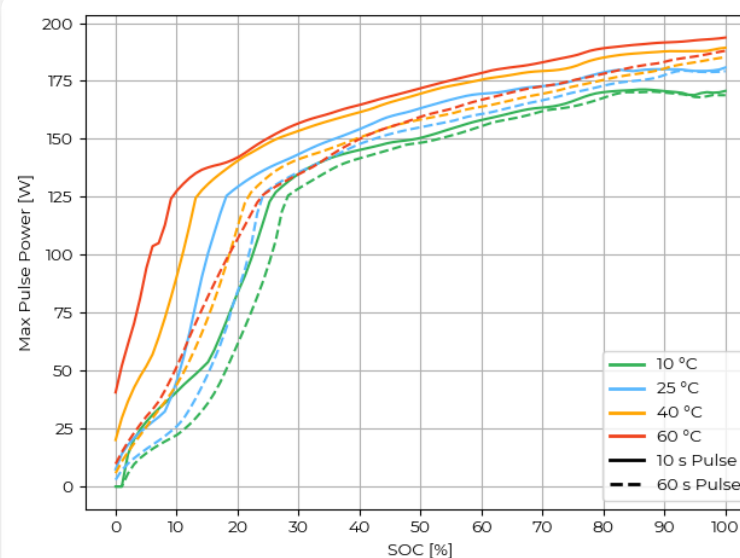


Energy Density: 273 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

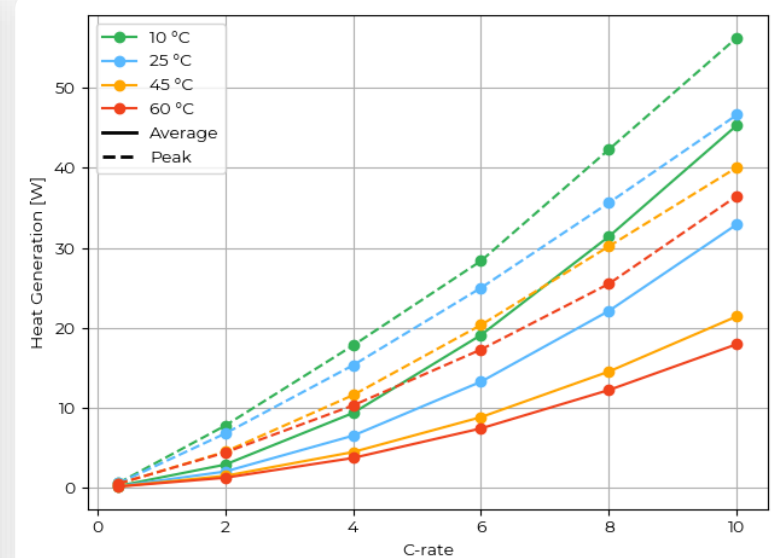


Power Density: 2501 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



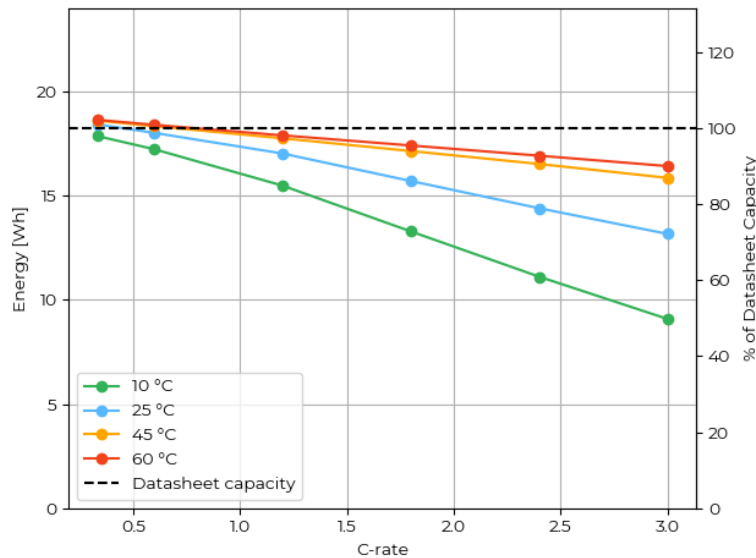
EVE 50E

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.



Energy

Total usable energy determining range, efficiency, and overall system capability

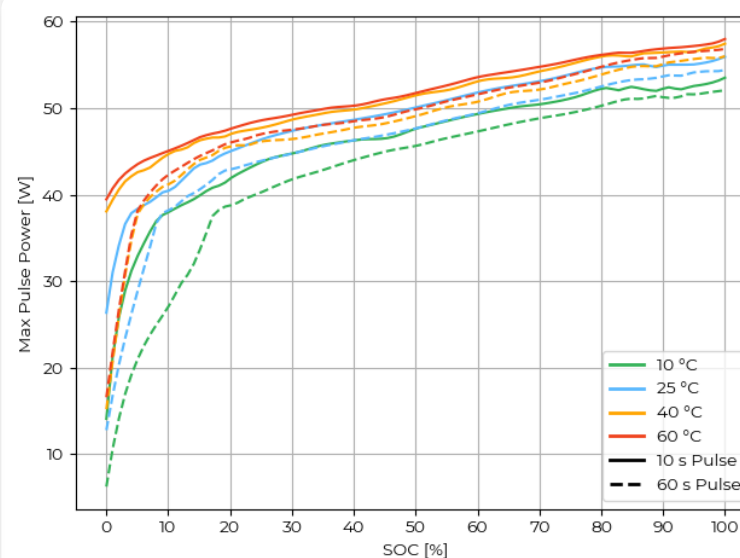


Energy Density: 270 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

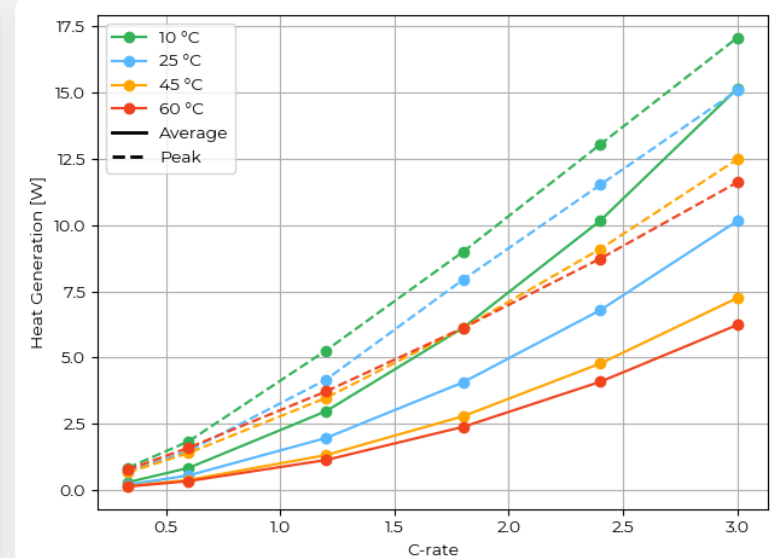


Power Density: 735 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.2%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

81

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



Far East Battery (FEB)



Founded in 2009 and headquartered in China as a core subsidiary of Far East Smarter Energy Co., FEB manufactures high-energy cylindrical lithium-ion cells for robotics, power tools, and industrial platforms. Its 21700 cell series has been adopted in fourth-generation industrial quadruped robots and targets the growing low-altitude economy across UAV and light-power vehicle segments.

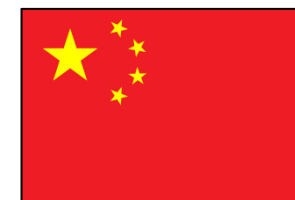
FEB achieved mass production of its 300 Wh/kg cylindrical cell using full-tab structure and composite silicon-based anodes. Its 68E cell reaches 320 Wh/kg, with 7 GWh of cylindrical capacity operational and expansion underway.

Key focus areas

Power tools, Drones,
Robotics

Key Facts

Founding Year	Headquarters
2009	China
Chemistry	A:E Verification
Lithium-ion	Yes



FEB Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
18650-30S	18650	3	10.8	6	30	10	628	216	6278	2160
18650-48E	18650	4.5	16.2	4.5	9	2	942	324	1883	648
26EBX	18650	2.6	9.36	2.6	7.8	3	544	195	1632	585
30M	18650	3.3	11.88	3.3	9.9	3	691	248	2072	742
35EA	18650	3.5	12.6	3.5	7	2	732	263	1465	525
38EA	18650	3.8	13.68	3.8	7.6	2	795	279	1590	558
42E	18650	4	14.4	4	8	2	837	288	1674	576

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

83

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

FEB Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
21700-50A	21700	5	18	5	15	3	689	247	2067	740
21700-50S	21700	5	18	10	30	6	689	250	4135	1500
21700-50U	21700	5	18	10	40	8	689	247	5513	1973
21700-55S	21700	5.5	19.8	10	30	5.5	758	264	4135	1440
21700-60S	21700	6	21.6	8	30	5	827	288	4135	1440
45EBX	21700	4.5	16.2	4.5	13.5	3	620	228	1861	685
50H	21700	5	18	10	60	12	-	247	-	2959

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

84

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

FEB Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
58E	21700	5.5	19.8	10	30	5.5	758	271	4135	1479
62E	21700	6	21.6	6	12	2	827	288	1654	576
68E	21700	6.5	23.4	6	13	2	896	312	1792	624

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

85

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



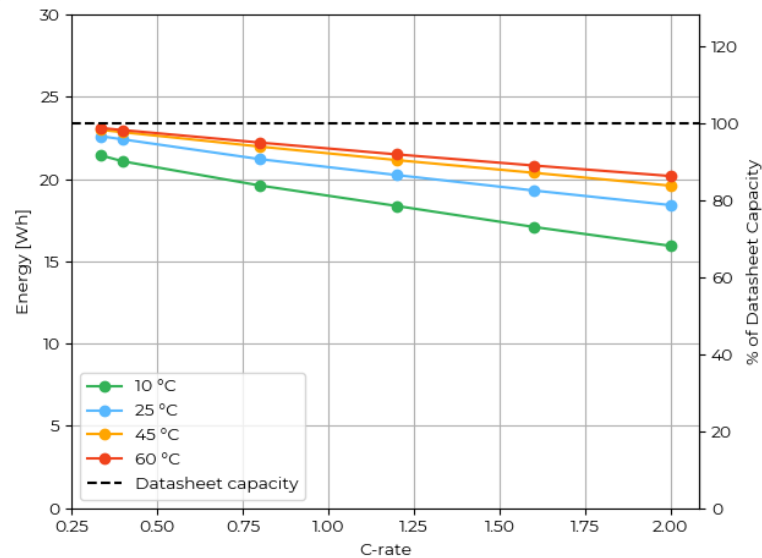
FEB 68E



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

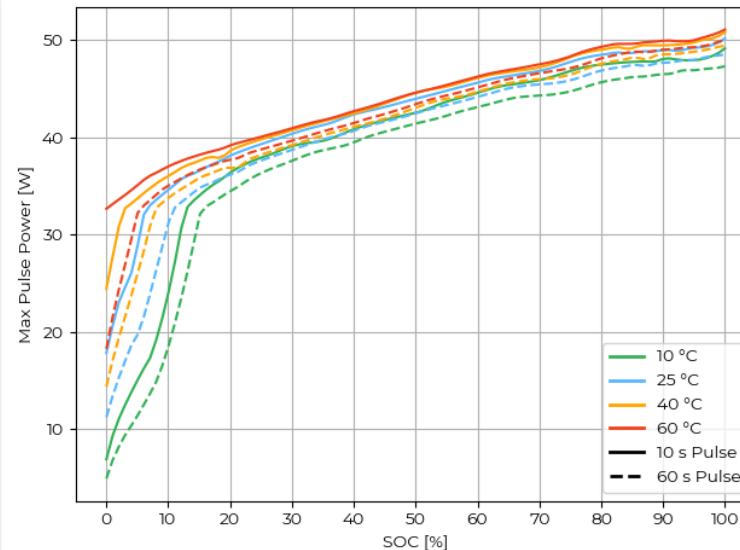


Energy Density: 301 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

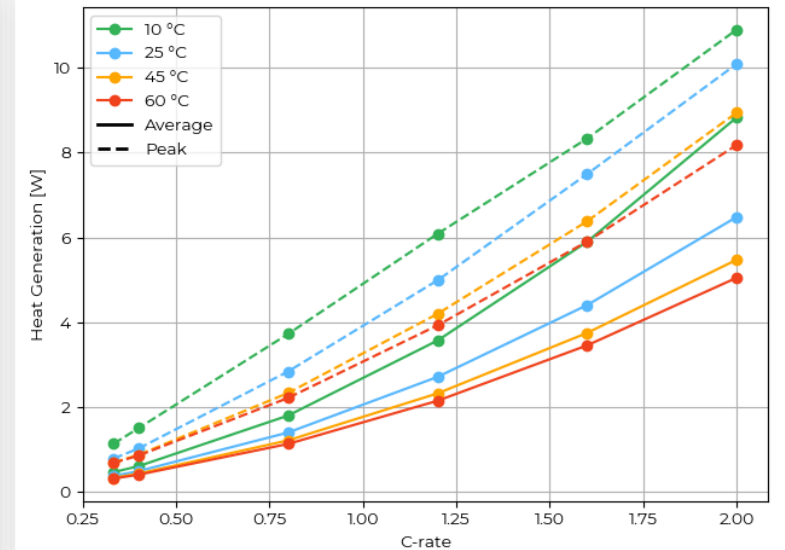


Power Density: 586 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 5.1%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

86

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>

inoBat

Inobat



Founded in 2019 and headquartered in Bratislava, Slovakia, InoBat is a European battery technology company specialising in lithium-ion cells for motorsport, aerospace, defence, and drone applications. Its customised chemistry approach delivers cells optimised for specific OEM performance targets, with its Gen4 technology exceeding 326 Wh/kg.

InoBat operates its own R&D and pilot production facility in Voderady, with a gigafactory partnership alongside Gotion High Tech. Its E10 cell, built on the Gen4 platform, brings eVTOL-derived silicon anode technology to the UAV and defence drone market, offering faster charging and longer flight times than conventional graphite anode cells, with a strategic focus on European supply chain independence.

Key focus areas

Aviation, Drones,
Motorsports

Key Facts

Founding Year	Headquarters
2019	Slovakia
Chemistry	A:E Verification
Lithium-ion	Yes



Inobat Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
E10	Pouch	13	45.11	52	130	10	785	323	7851	3234
E33B	Pouch	30.9	110.313	92.7	154.5	5	688	317	3442	1585

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



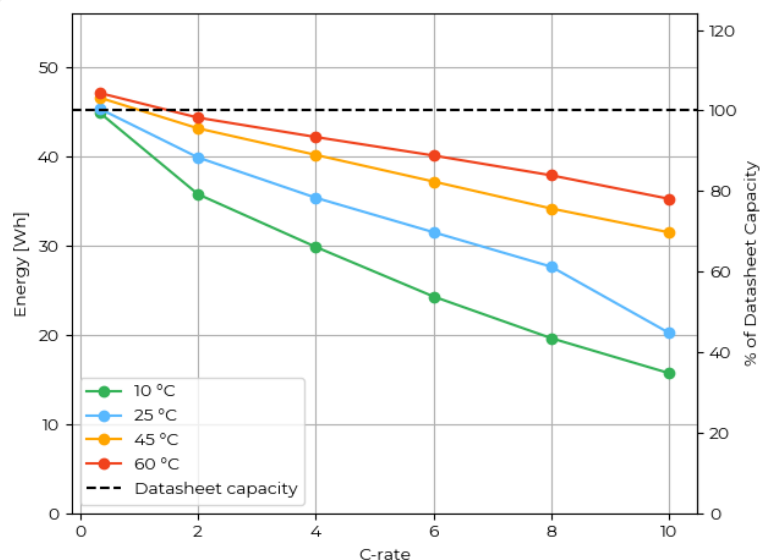
Inobat E10

InoBat

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

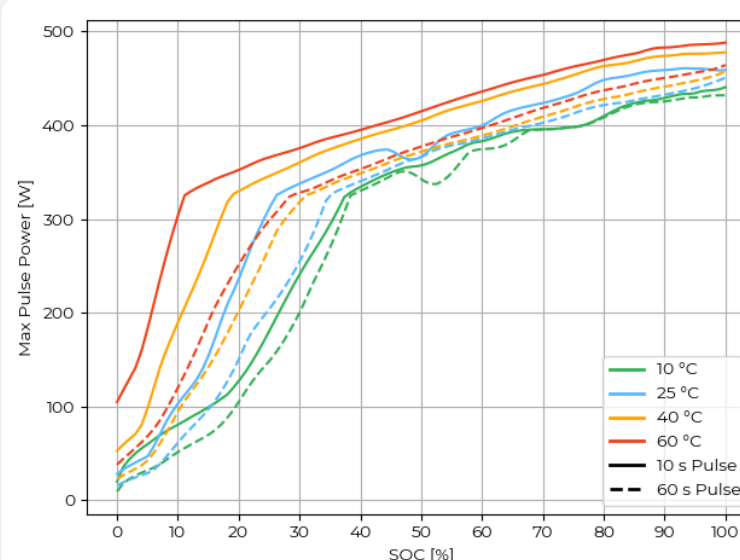


Energy Density: 322 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

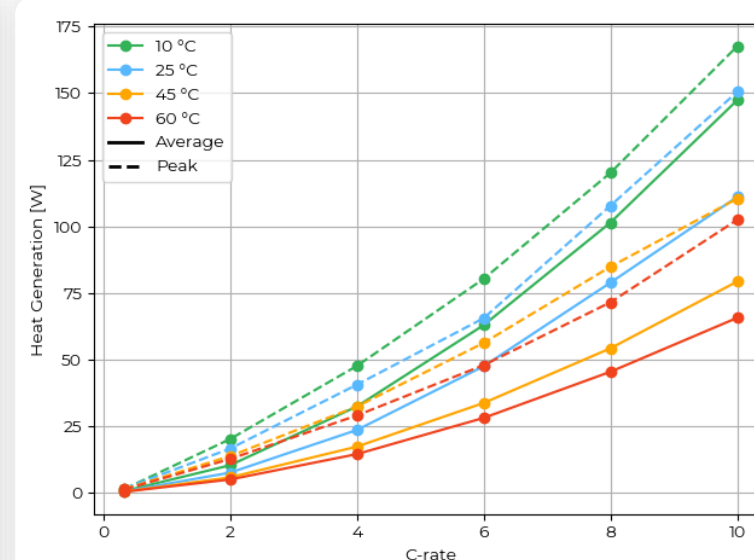


Power Density: 2605 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.3%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

ABOUT:ENERGY

Version 1.0

89

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



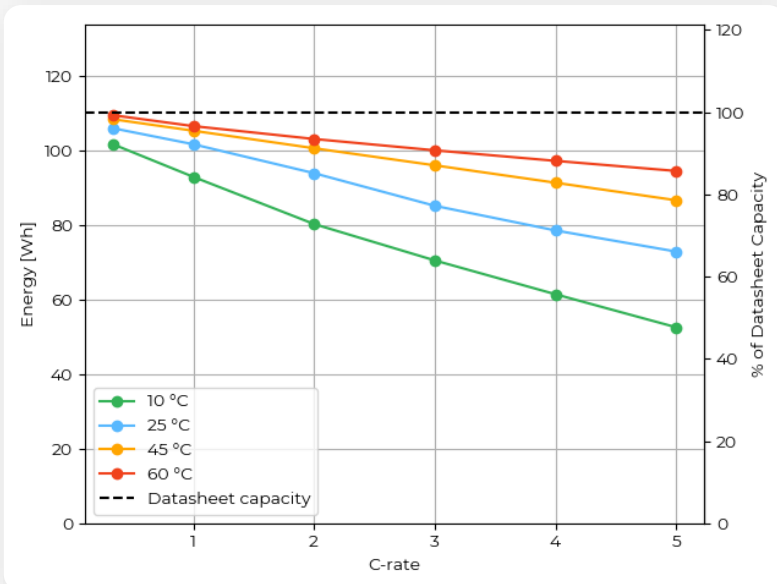
Inobat E33B

InoBat

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

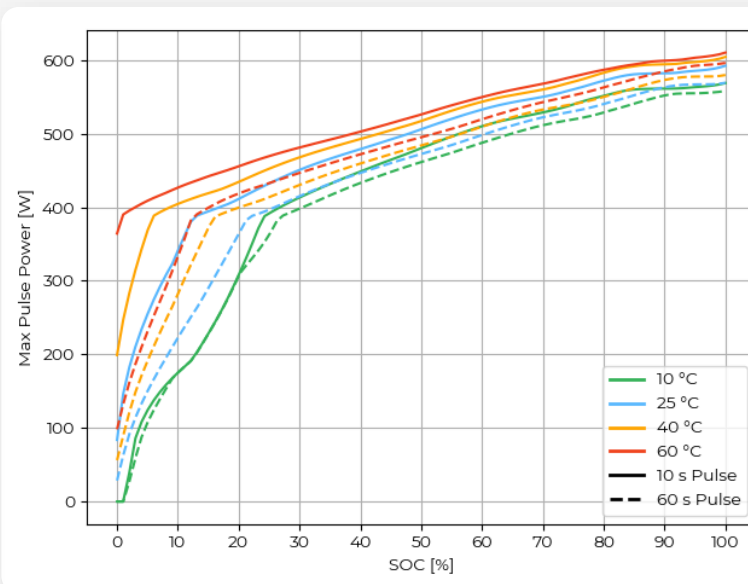


Energy Density: 313 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

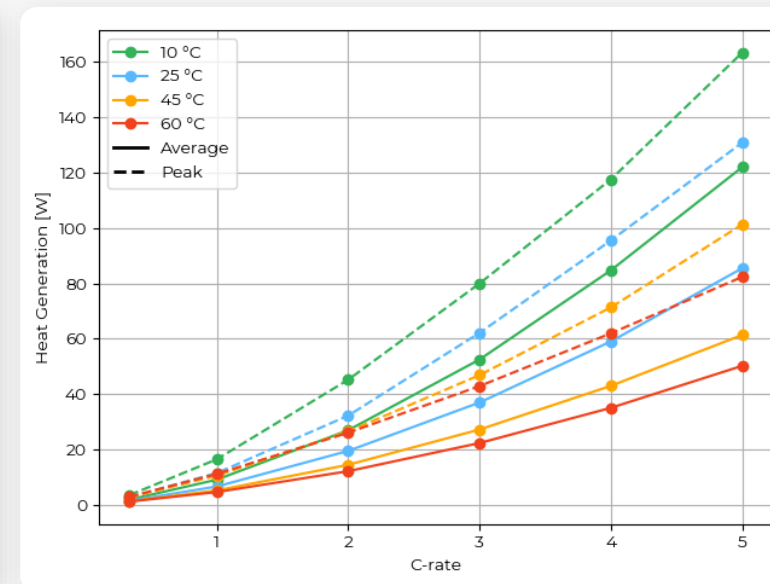


Power Density: 1494 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

ABOUT:ENERGY

Version 1.0

90

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



LG Energy Solutions



Spun out from LG Chem in 2020 and headquartered in Seoul, South Korea, LG Energy Solutions is one of the world's largest lithium-ion battery manufacturers. The company has expanded well beyond automotive into robotics, drones, aviation, and space, with dedicated product zones and a partnership and NASA to develop space-rated cells operating to -60°C.

LGES continues to showcase drone and robotics battery platforms in 2026 alongside cube satellites developed with K-Drone Alliance. Its cylindrical high-output cells also power BBU solutions for AI data centres, reflecting a broadening high-performance mandate across demanding sectors.

Key focus areas

Space, Drones,
Robotics, Aviation

Key Facts

Founding Year	Headquarters
2020	Koran
Chemistry	A:E Verification
Lithium-ion	Yes



LG Energy Solutions Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
H51	21700	5	18.2	5	25	5	725	258	3627	1291
H52A	21700	5	18	15	40	8	711	273	5692	2182
M53L	21700	5.1	18.5	5.1	15.3	3	745	261	2254	789
M58T	21700	5.57	20	2.7	12.5	2.2	755	273	1693	613

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

92

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



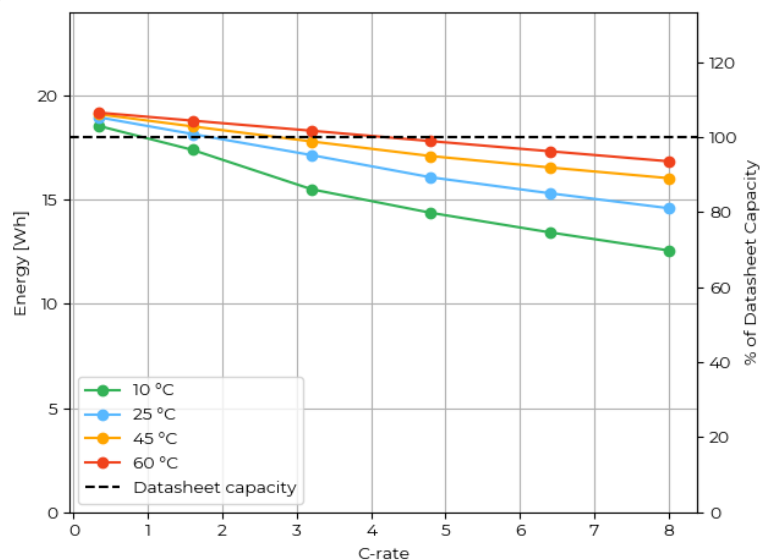
LG H52A



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

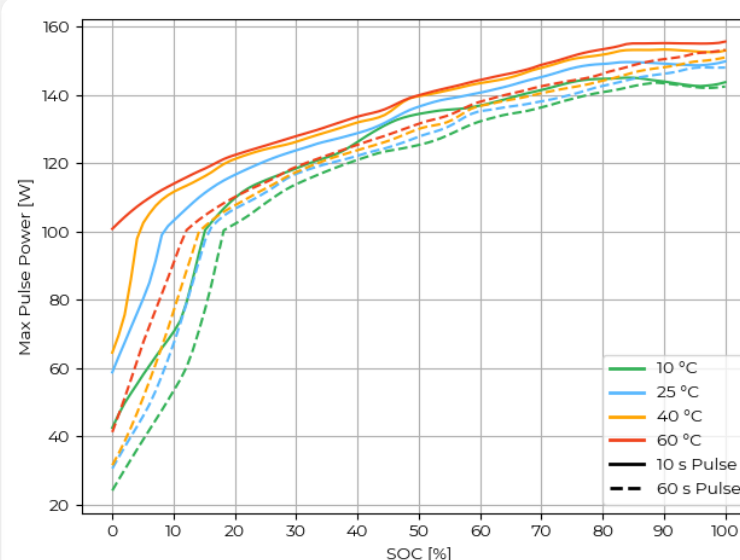


Energy Density: 294 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

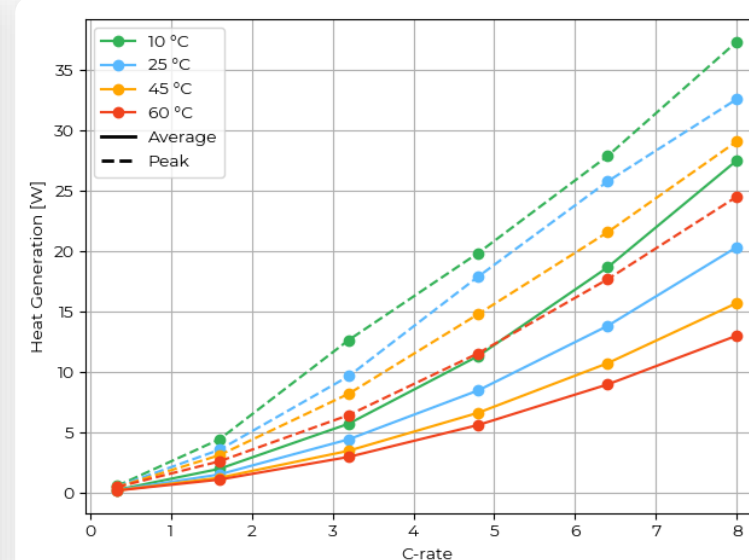


Power Density: 2116 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.9%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

93

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



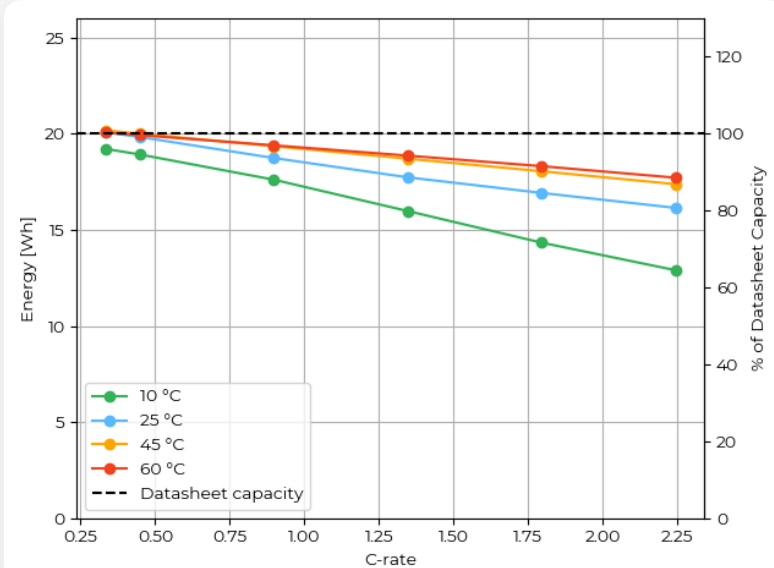
LG M58T



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

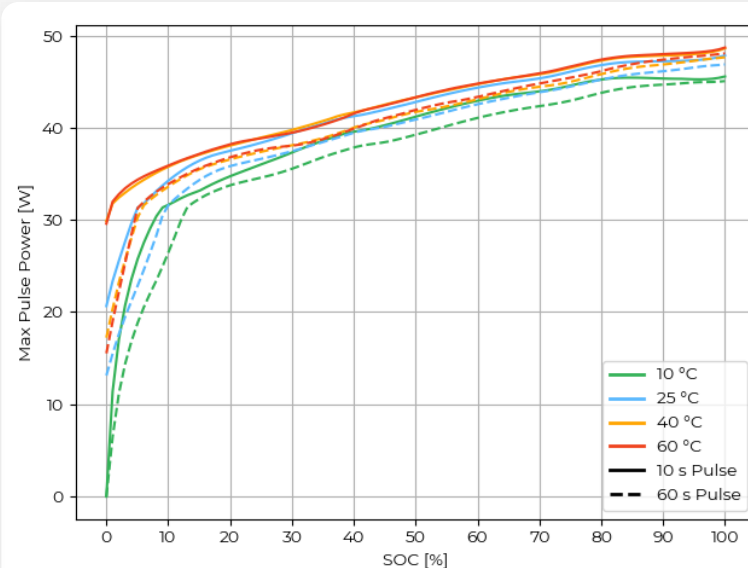


Energy Density: 279 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

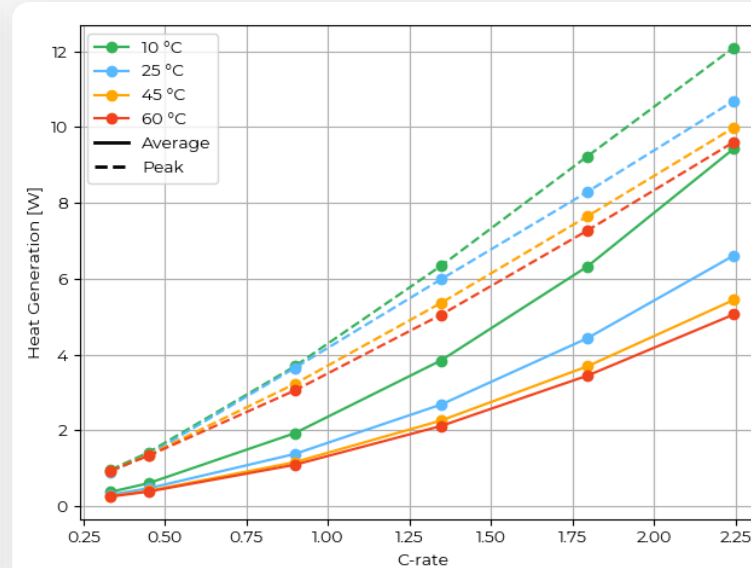


Power Density: 595 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

ABOUT:ENERGY

Version 1.0

94

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



Molicel



Founded in 1998 and headquartered in Taipei, Taiwan, Molicel (E-One Moli Energy Corporation) is a specialist manufacturer of ultra-high power cylindrical lithium-ion cells. Its 18650 and 21700 formats are widely adopted across motorsport, aerospace, eVTOL, high-performance drones, and demanding industrial applications where continuous high discharge currents are non-negotiable.

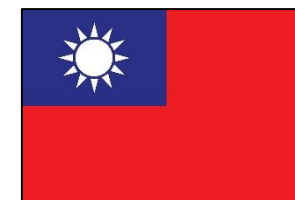
Molicel's P-series cells, including the P42A, P45B, P50B, and P60C, deliver up to 60A continuous discharge with low internal resistance and wide temperature tolerance. The company is part of the Taiwan Cement Corporation Group, with primary manufacturing in Tainan and Kaohsiung.

Key focus areas

Drones, Motorsports,
Space, Aviation

Key Facts

Founding Year	Headquarters
1998	Taiwan
Chemistry	A:E Verification
Lithium-ion	Yes



Molicel Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
P30B	18650	3	10.8	9	30	10	609	230	6095	2298
P30S	18650	3	10.8	6	54	18	609	225	10971	4050
M65A	21700	6.5	23.4	-	26	4	914	314	3655	1256
P50B	21700	5	18	25	60	12	703	257	8441	3086
P50S	21700	5	18	25	100	20	703	254	14068	5070
P60B	21700	6	21.6	30	100	16.7	-	-	-	-
P60C	21700	6	21.6	30	100	16.7	860	288	14337	4800

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

96

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Molicel Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
P70X	21700	7	25.2	-	-	-	-	-	-	-
P80X	21700	8	28.8	-	-	-	-	-	-	-
XA1	21700	2.6	9.36	130	260	100	-	-	-	-
XA2	21700	3.5	12.6	210	315	90	-	-	-	-
XA3	21700	4	14.4	160	360	90	-	-	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

97

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



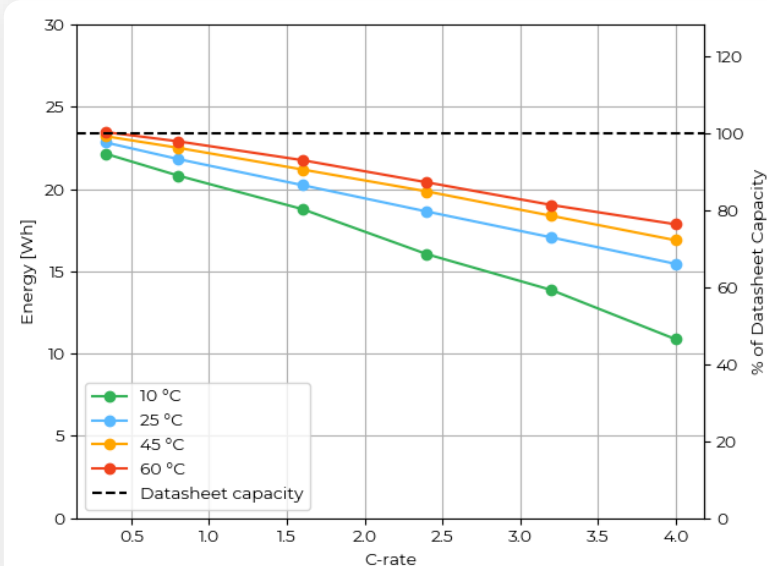
Molicel M65A



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

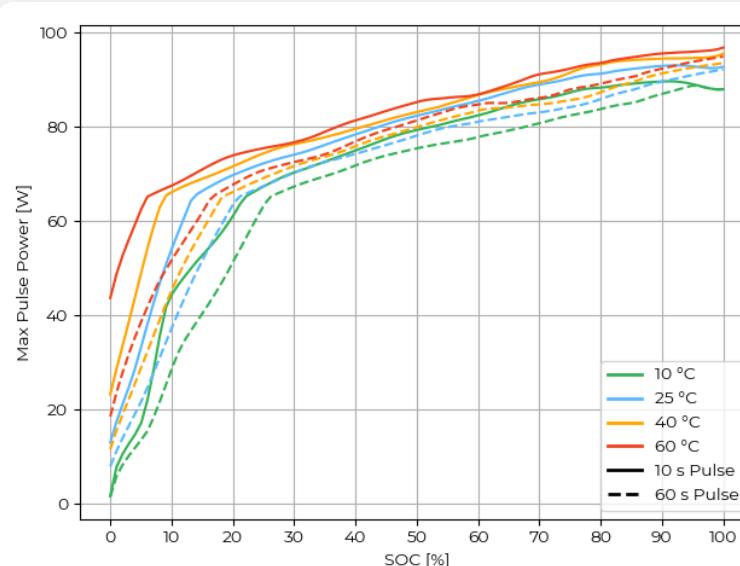


Energy Density: 303 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

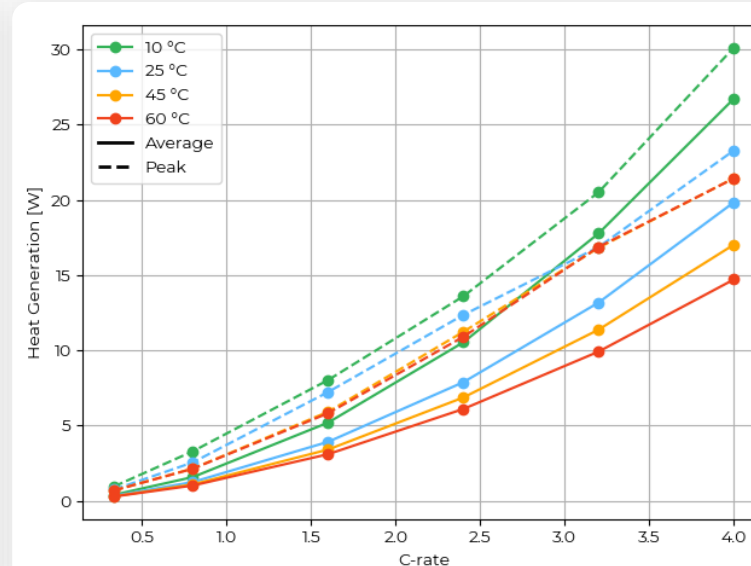


Power Density: 1092 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.5%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



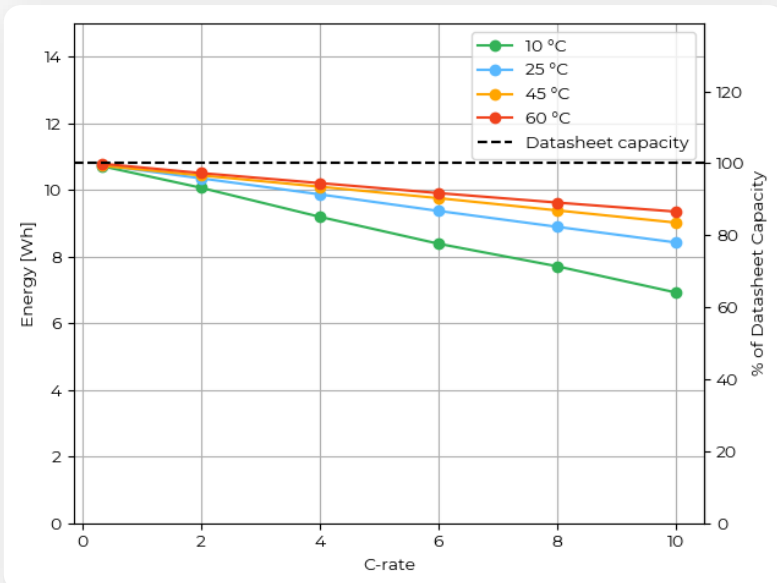
Molicel P30B



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

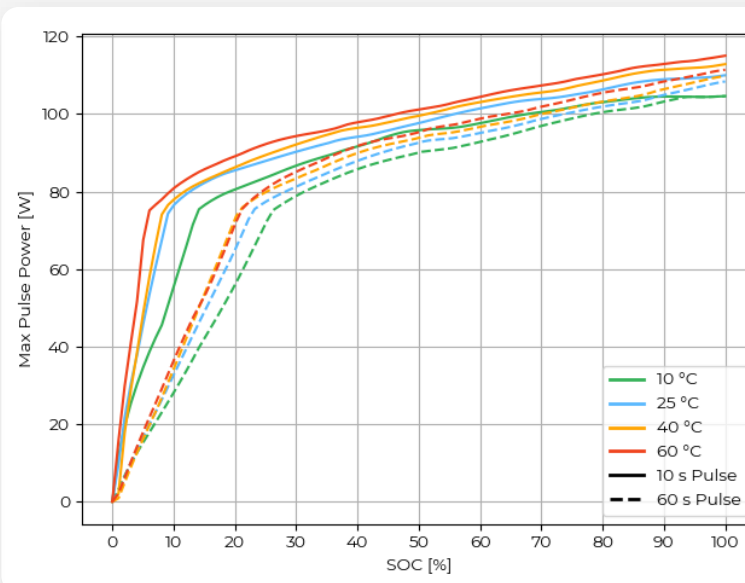


Energy Density: 237 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

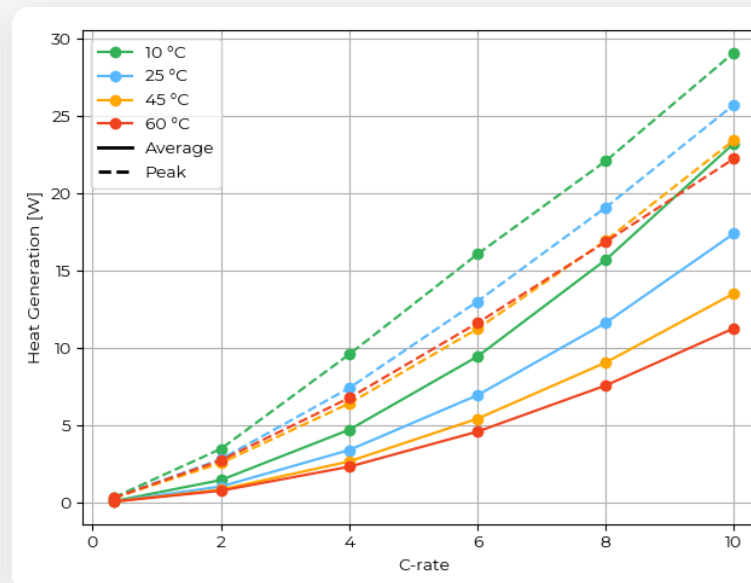


Power Density: 2157 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.1%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



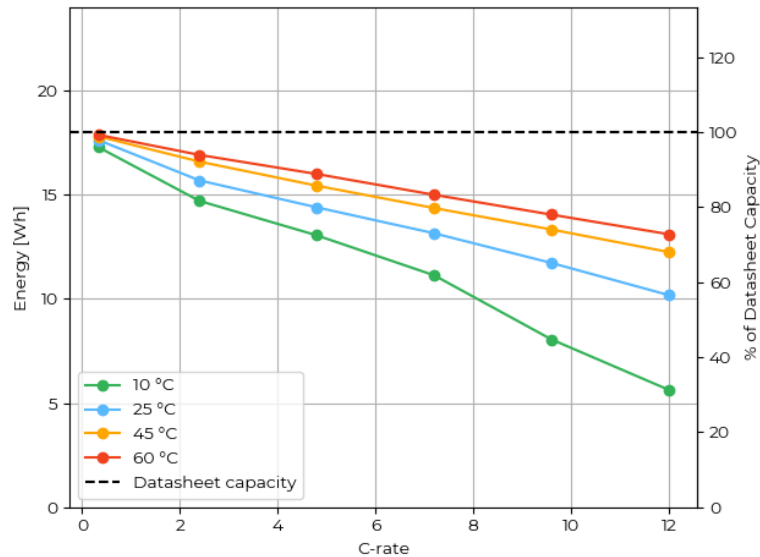
Molicel P50B



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

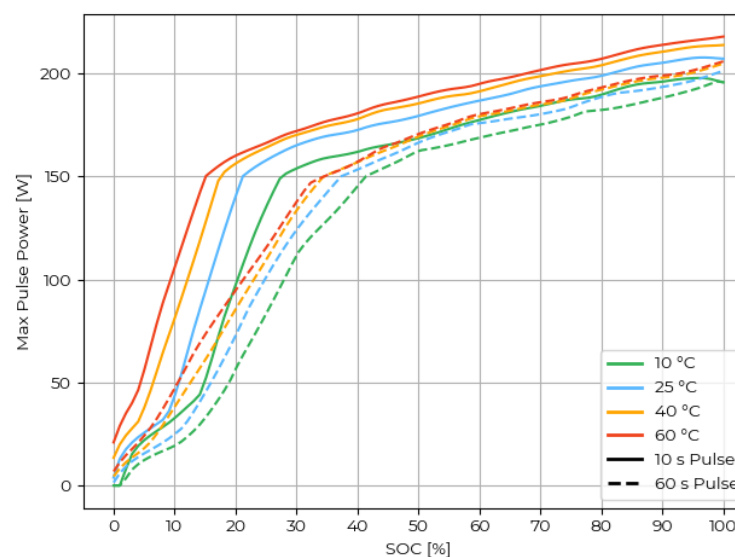


Energy Density: 252 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

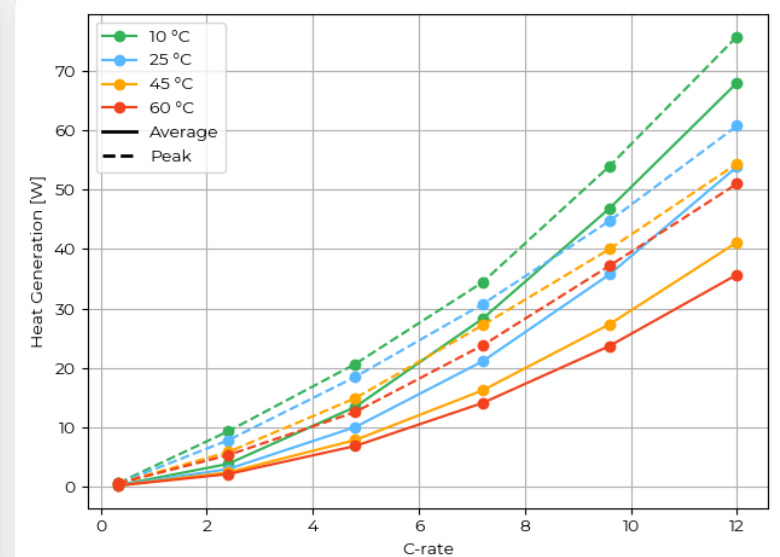


Power Density: 2560 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.4%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



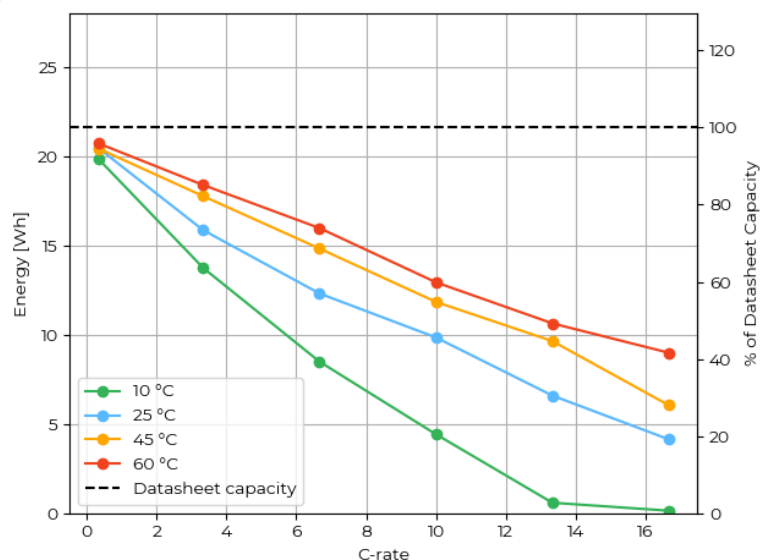
Molicel P60C



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

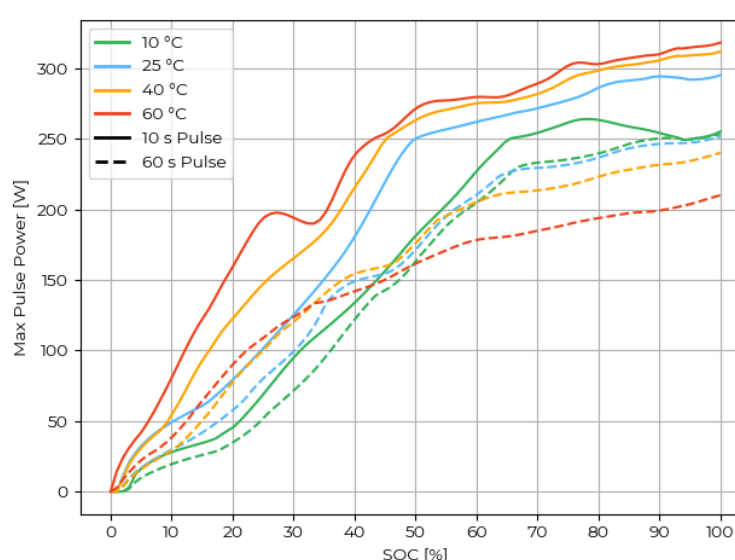


Energy Density: 279 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

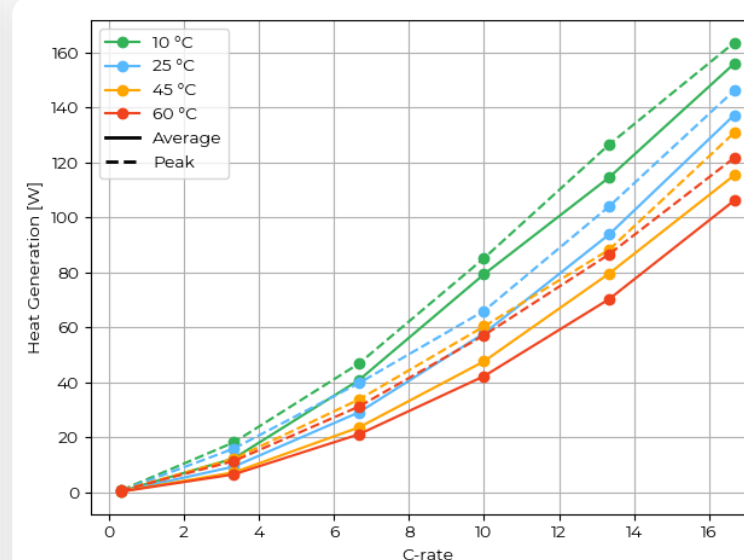


Power Density: 3407 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



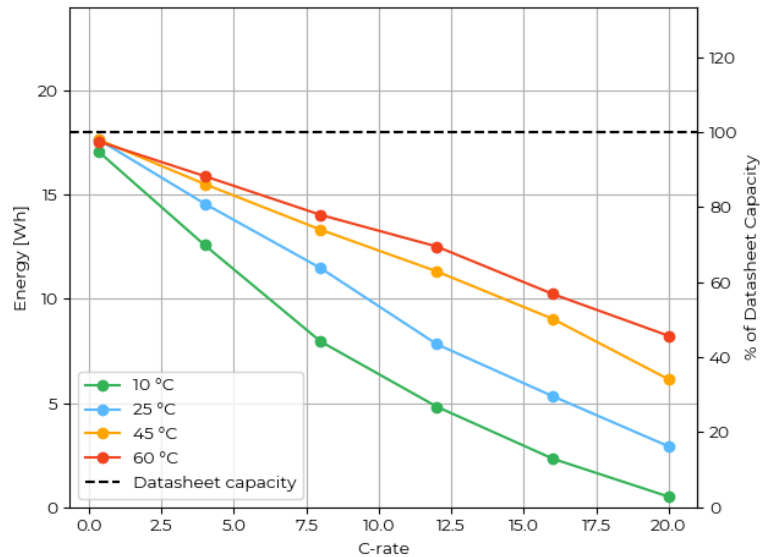
Molicel P50S



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

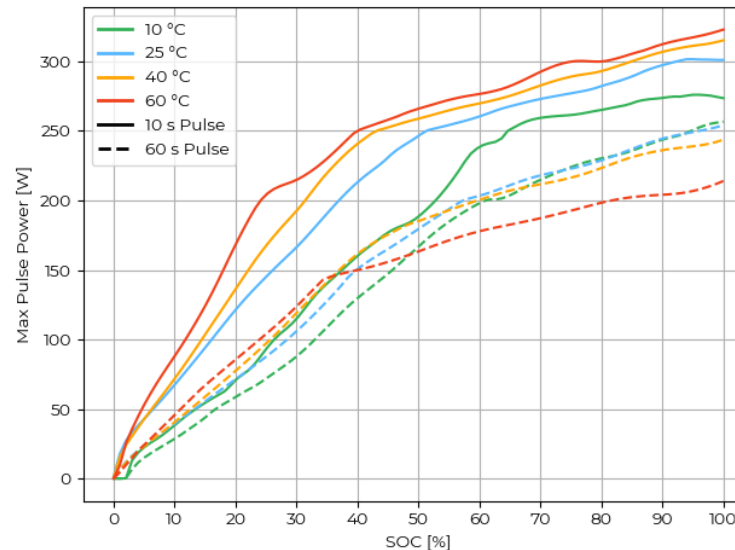


Energy Density: 249 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

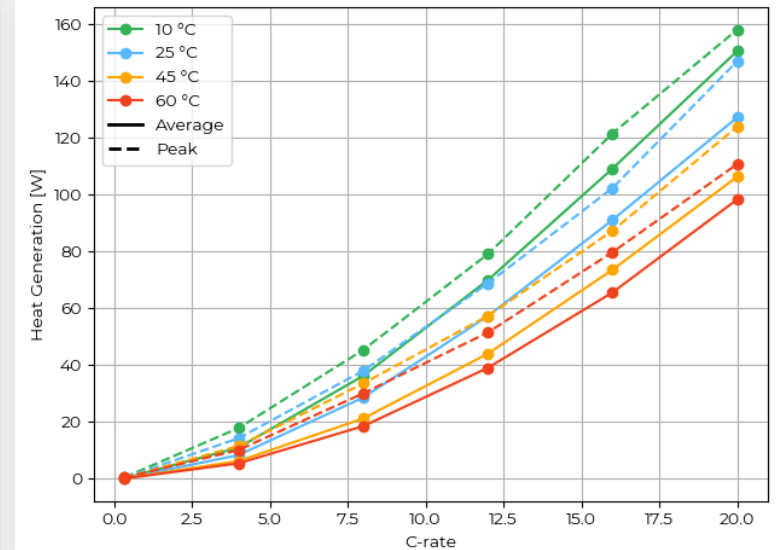


Power Density: 3471 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

RELIANCE

Reliance Energy



Founded in 2021 and headquartered in Changzhou, Jiangsu, China, Reliance (Jiangsu Reliance Energy Technology Co., Ltd.) is a specialist tabless cylindrical lithium-ion cell manufacturer targeting power tools, robotics, drones, and low-altitude aircraft. Its founding team brings over 20 years of high-rate cylindrical battery expertise drawn from Sanyo, Panasonic, and Tenpower.

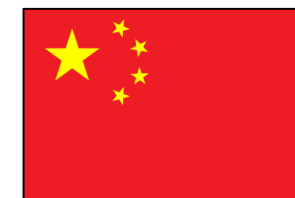
Reliance's RS50 and RH60/RS60 tabless 21700 cells achieve energy densities exceeding 300 Wh/kg, with ultra-high discharge rates, wide temperature range operation, and ultra-fast charging. The tabless architecture reduces internal resistance and thermal buildup, directly addressing the performance demands of eVTOL platforms, humanoid robots, and professional power tools.

Key focus areas

Motorsports, Power tools, Robotics, Drones

Key Facts

Founding Year	Headquarters
2021	China
Chemistry	A:E Verification
Lithium-ion	Yes



Reliance Battery Cell Products

RELIANCE

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
RH60	21700	6	21.6	6	12	2	831	304	1663	608
RH70	21700	7	25.2	7	14	2	967	-	1933	-
RP70	21700	7	25.2	7	21	3	-	-	-	-
RP75	21700	7.5	27	7.5	7.5	1	1036	-	1036	-
RP85	21700	8.5	30.6	8.5	8.5	1	1174	-	1174	-
RS40	21700	4	14.4	14	40	10	572	215	5719	2149
RS50	21700	5	18	15	40	8	715	269	5719	2149

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io

 ABOUT:ENERGY

Version 1.0

104

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Reliance Battery Cell Products

RELIANCE

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
RS60	21700	6	21.6	12	30	5	858	304	4289	1521
RS65	21700	6.5	23.4	13	20	3.1	897	-	2761	-
RT26	21700	2.6	8.32	5	100	38.5	331	-	12715	-
RT40	21700	4	14.4	14	50	12.5	571	215	7143	2687
RU25	21700	2.5	9	20	150	60	-	-	-	-
RU40	21700	4	14.4	18	70	17.5	-	-	-	-
RU50	21700	5	18	18	50	10	715	269	7152	2687

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

105

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



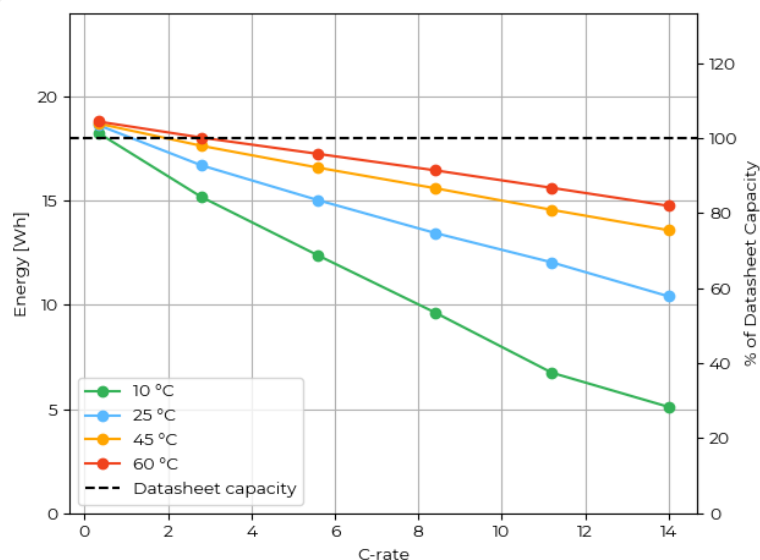
Reliance RS50

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

RELIANCE

Energy

Total usable energy determining range, efficiency, and overall system capability

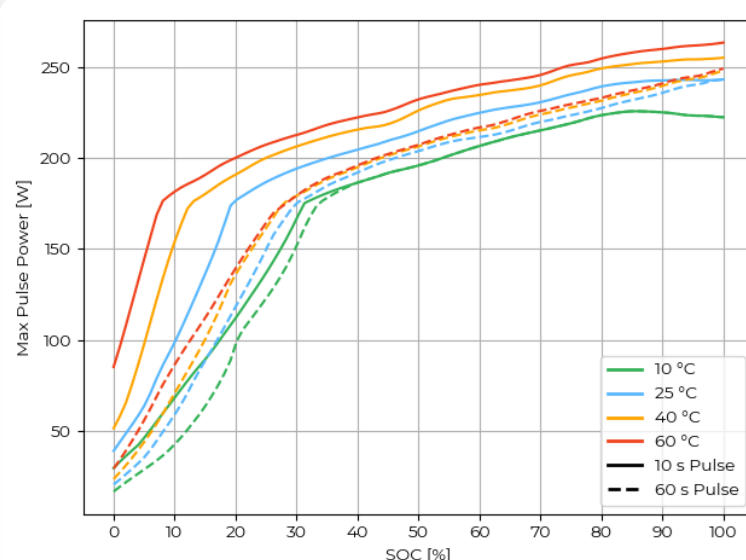


Energy Density: 281 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

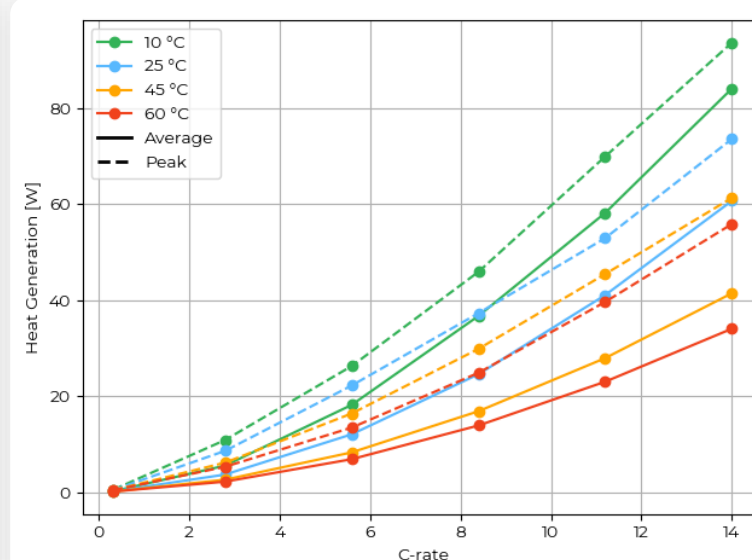


Power Density: 3241 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

106

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



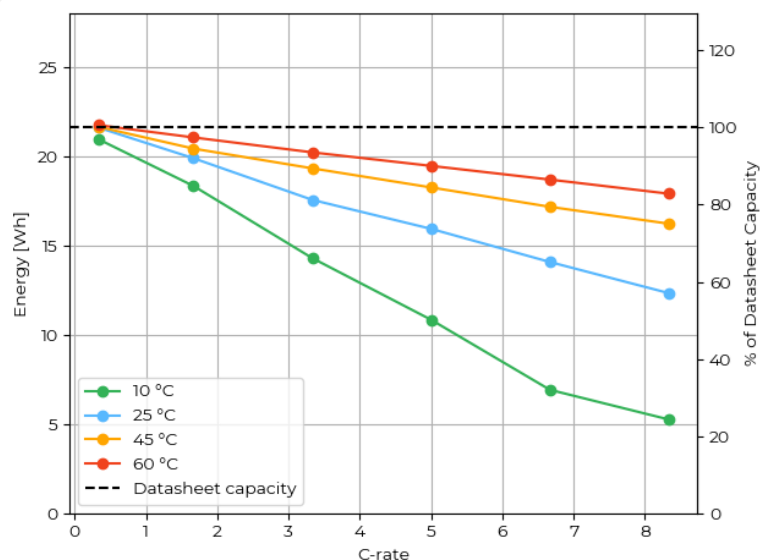
Reliance RS60

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

RELIANCE

Energy

Total usable energy determining range, efficiency, and overall system capability

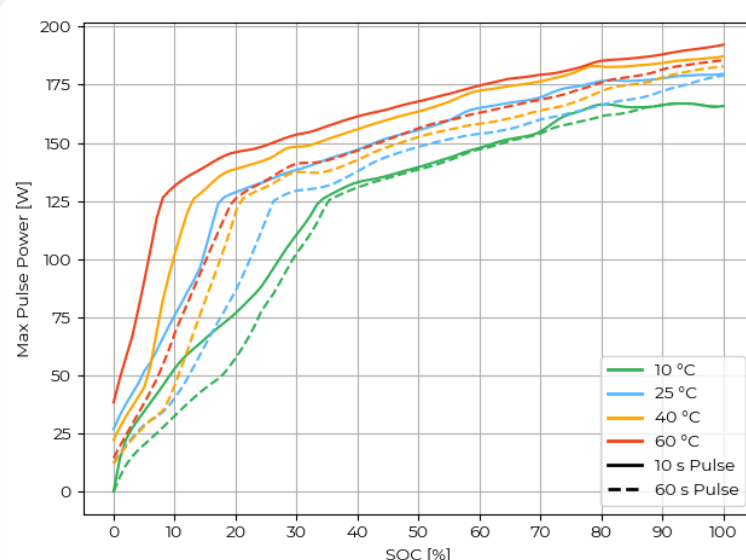


Energy Density: 306 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

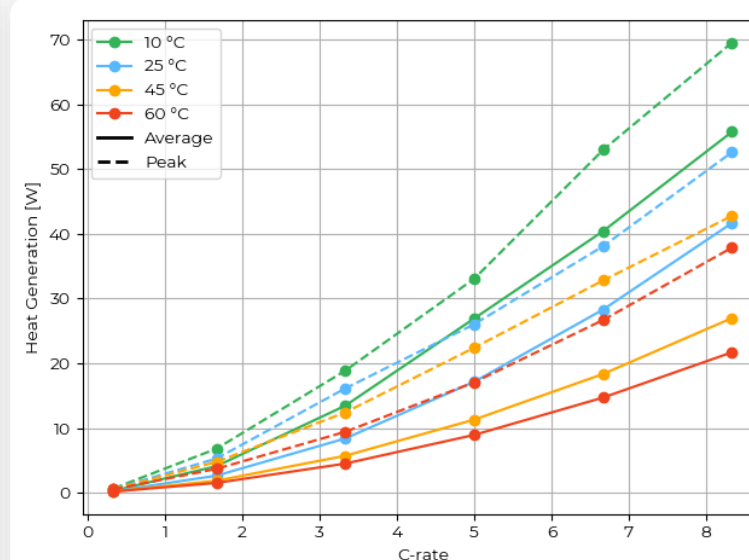


Power Density: 2202 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.1%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



Rincell



Founded in 2023 and headquartered in San Francisco, California, Rincell is a US-based advanced cell manufacturer producing silicon-graphite lithium-ion and sodium-ion cylindrical cells for defence, government, and high-performance industrial platforms. Its RC41 and RC58 cells target fast charge, strong low-temperature discharge, and extended cycle life in compact 18650 and 21700 formats.

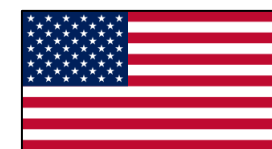
Rincell holds exclusive supply agreements with defence integrators and is scaling domestic US manufacturing backed by government grants. Its NDAA-compliant positioning and American ownership make it a strategically relevant option for programmes requiring secure, non-Chinese battery supply chains.

Key focus areas

Drones, Space,
Defence

Key Facts

Founding Year	Headquarters
2023	United States
Chemistry	A:E Verification
Lithium-ion	Yes



Rincell Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
RC41	18650	4.1	14.15	12.3	12.3	3	807	292	2421	875
RC58	21700	5.8	20.01	17.4	17.4	3	785	292	2355	876

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

109

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



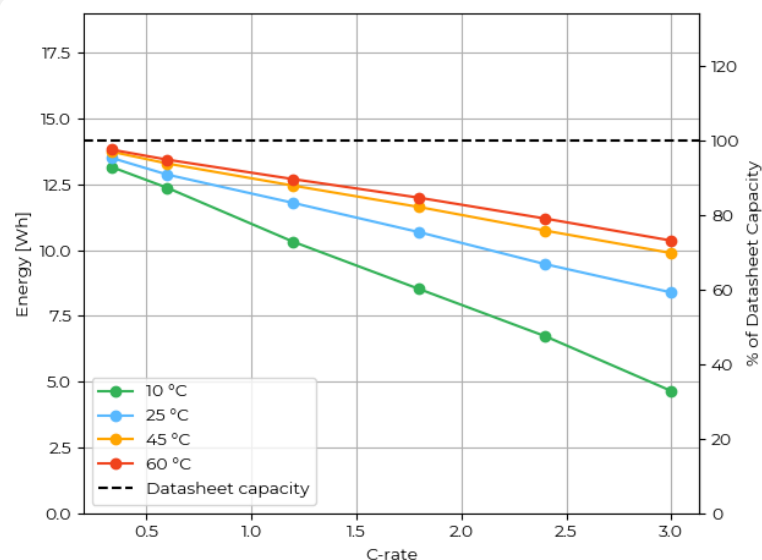
Rincell RC41



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

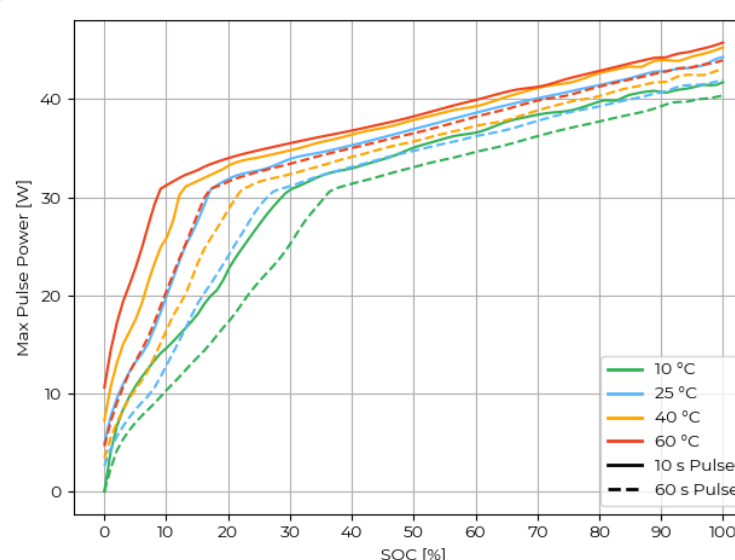


Energy Density: 280 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

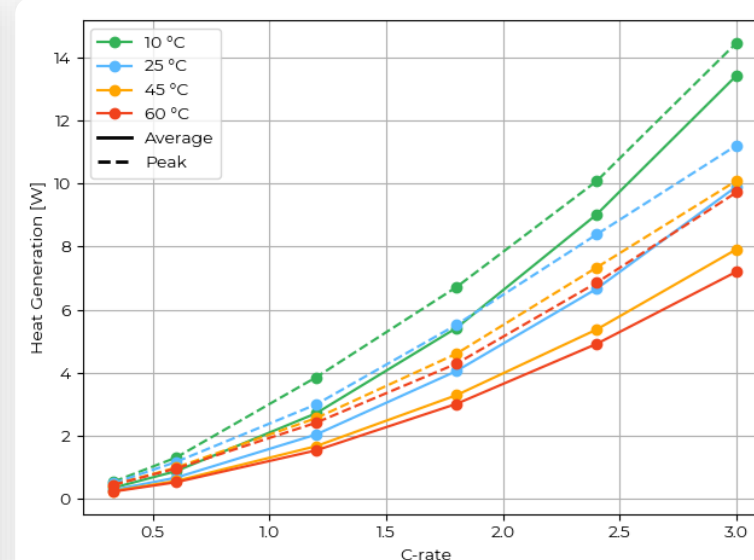


Power Density: 766 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 16.2%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

110

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



Samsung SDI



Founded in 1970 and headquartered in Yongin, South Korea, Samsung SDI is a global battery manufacturer with a growing presence across space, aviation, motorsport, and power tools. The company produces cylindrical, prismatic, and pouch cells and is advancing 46-series large-format cylindrical cells alongside solid-state battery pilot production targeting next-generation high-performance applications.

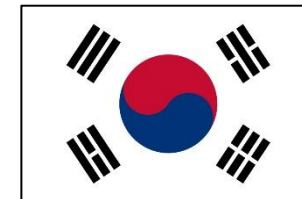
Samsung SDI's cylindrical portfolio supports high-power tool and motorsport applications, while its aerospace and space roadmap is backed by R&D investments across global centres. Manufacturing spans South Korea, the United States, Hungary, and Malaysia, with joint venture EV gigafactories targeting tens of GWh annually.

Key focus areas

Space, Aviation,
Power tools,
Motorsports

Key Facts

Founding Year	Headquarters
1970	Korea
Chemistry	A:E Verification
Lithium-ion	Yes



Samsung Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
25U	18650	2.5	9	-	40	16	-	-	-	-
30U	18650	3	10.8	-	40	13.3	-	-	-	-
40V	21700	4	14.4	-	50	12.5	-	-	-	-
40W	21700	4	14.4	-	60	15	-	-	-	-
45T	21700	4.5	16.2	-	35	7.8	-	-	-	-
50U	21700	5	18	15	60	12	709	250	8504	3000
51X	21700	5	18.25	5	15	3	742	247	2226	740

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

112

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Samsung Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
54X	21700	5.4	19.44	5.4	5.4	1	-	-	-	-
58E	21700	5.5	19.998	5.5	11	2	756	270	1512	540
63E	21700	6.3	22.68	3.15	6.3	1	-	-	-	-
F34E	46950	34	122.4	17	34	1	-	-	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

113

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



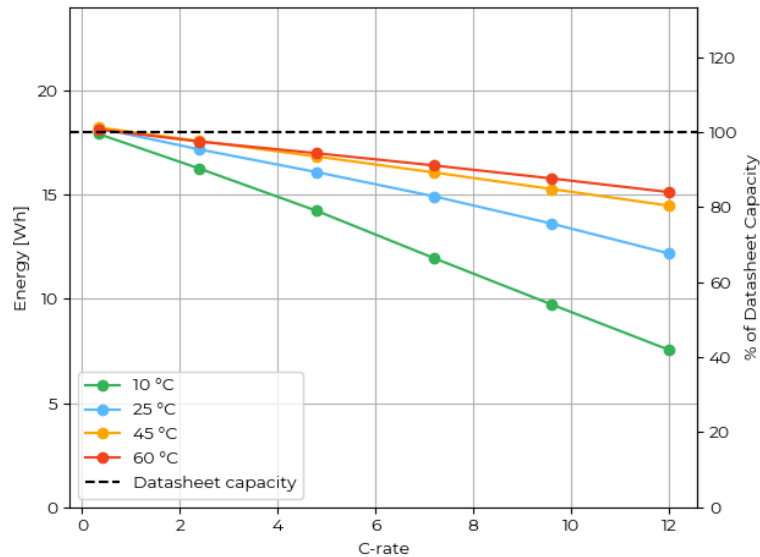
Samsung 50U



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

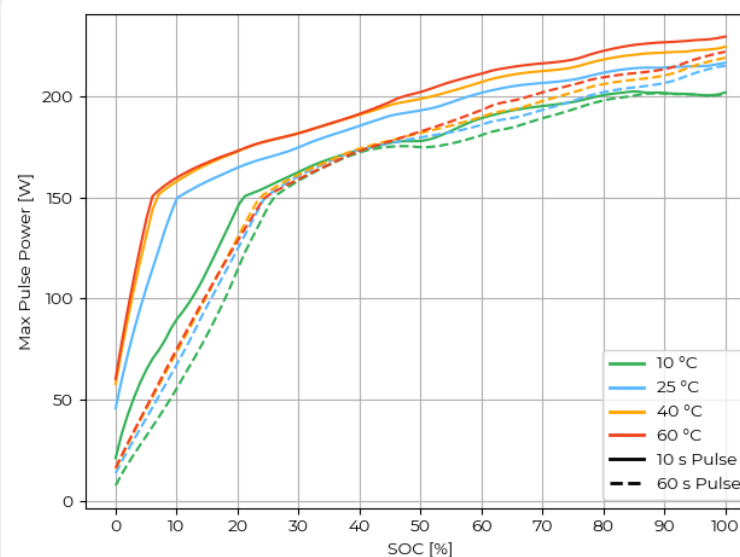


Energy Density: 269 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

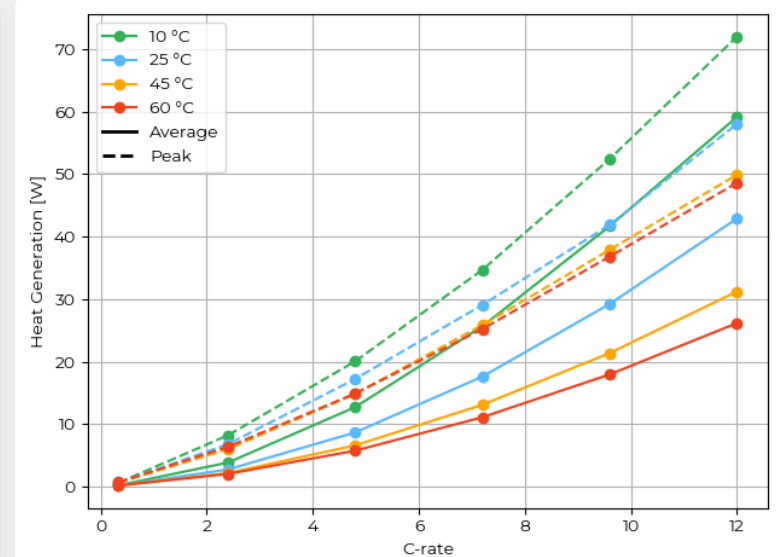


Power Density: 2856 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.9%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



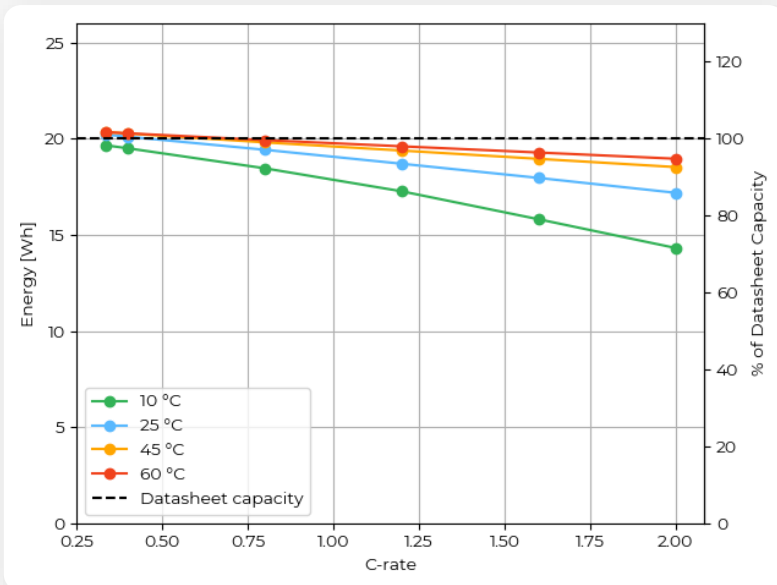
Samsung 58E



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

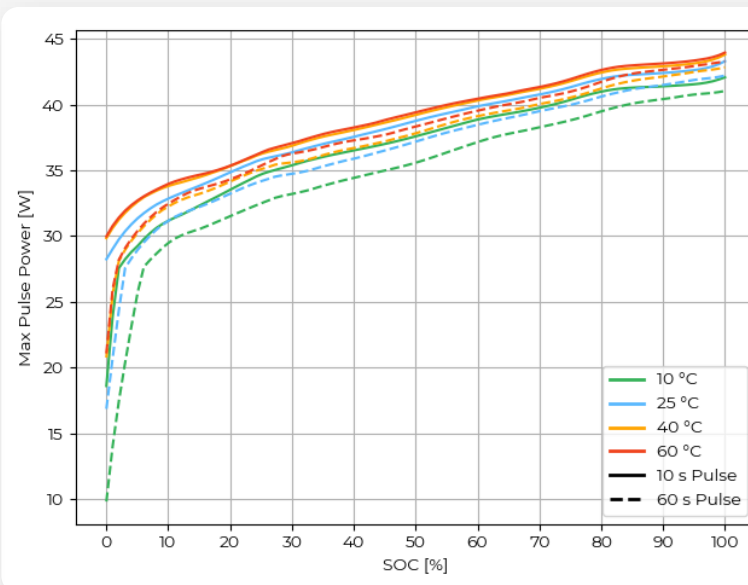


Energy Density: 275 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

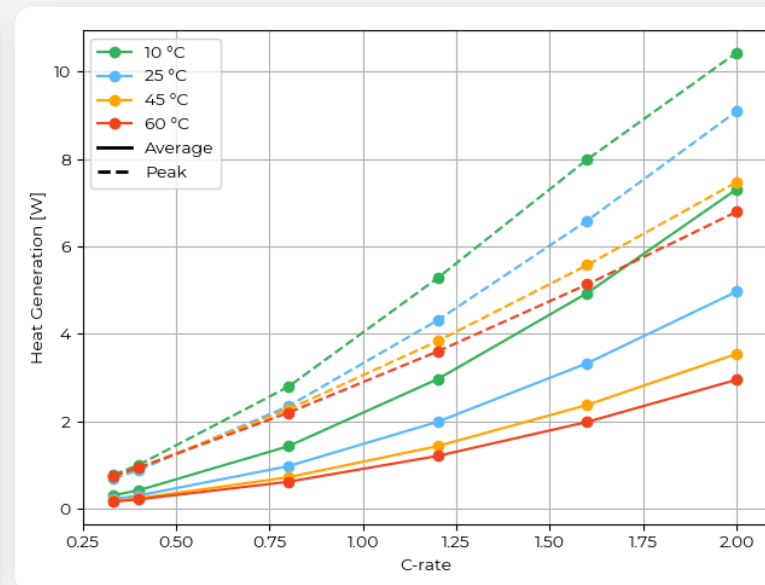


Power Density: 528 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.4%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

115

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



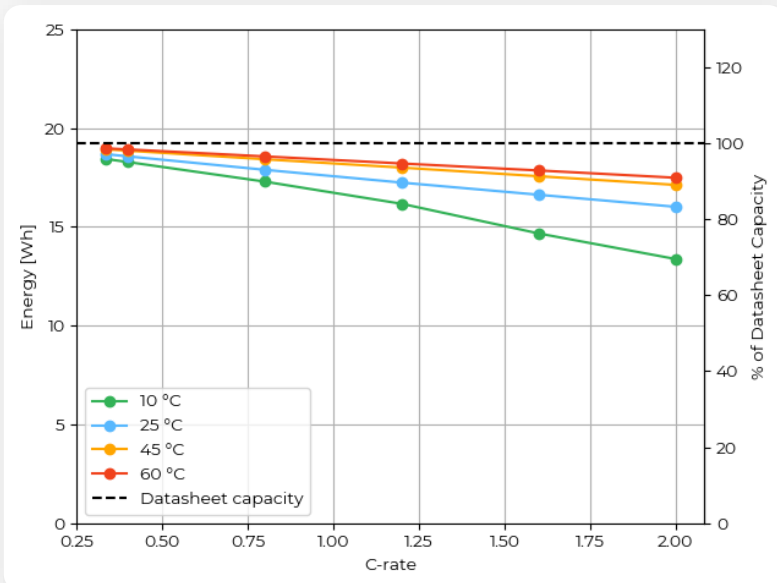
Samsung 53G



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

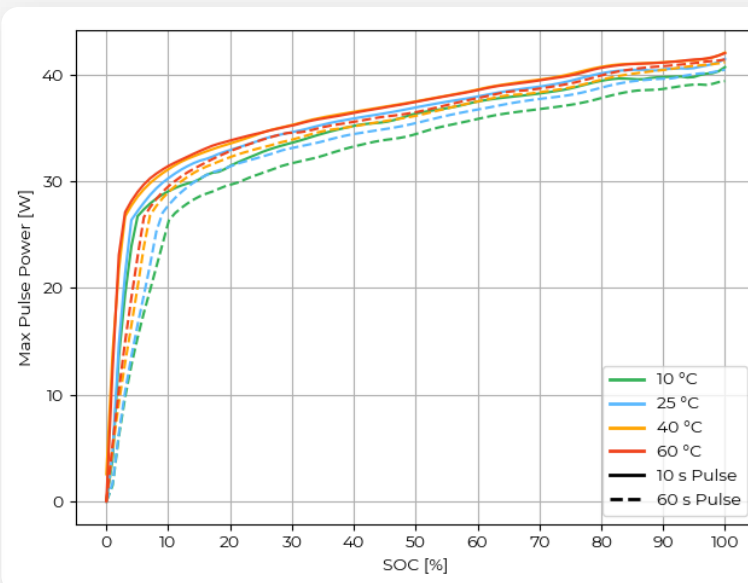


Energy Density: 265 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

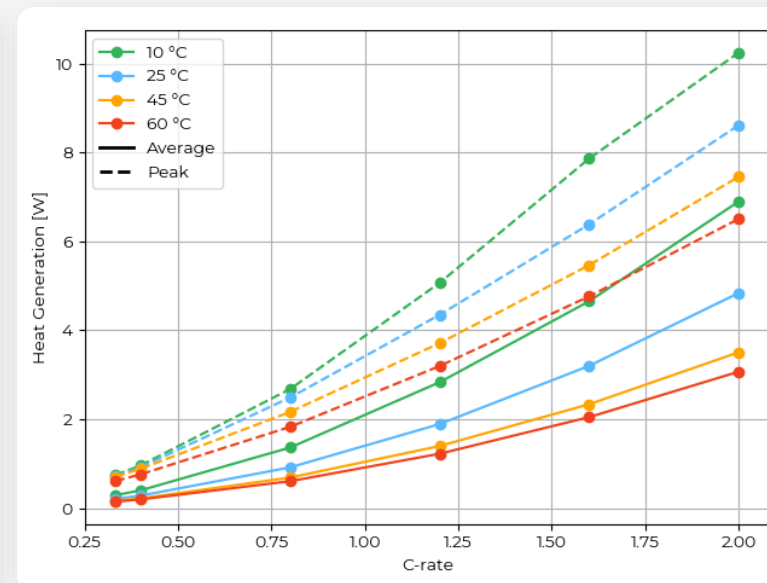


Power Density: 524 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.3%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.



SES AI



Founded in 2012, SES AI is a lithium battery developer headquartered in Woburn, Massachusetts, with manufacturing in Boston and Chungju, South Korea. The company originally built its cell technology and Chungju facility around lithium metal batteries for electric vehicles, but has since pivoted its manufacturing focus toward drones, UAVs, and robotics as its primary commercial markets. SES AI's new H10 series targets the drone market

directly, with the H10E cell delivering 397 Wh/kg for long-endurance missions and the H10P offering 338 Wh/kg for high-power, rapid-discharge applications. Its Chungju facility has been converted to NDAA-compliant production, sourcing materials from Korean manufacturers to give US defence and government-adjacent customers a secure, traceable supply chain.

Key focus areas

E-mobility, Robotics,
Drones

Key Facts

Founding Year	Headquarters
2012	United States
Chemistry	A:E Verification
Lithium-ion	Yes



SES AI Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
H10B	Pouch	11.4	39	45.6	68.4	6	819	379	4886	2258
H10E	Pouch	11.8	40.1	23.6	23.6	2	889	397	1779	794
H10P	Pouch	10.8	37.48	43.2	75.6	7	737	338	5159	2363

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

118

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



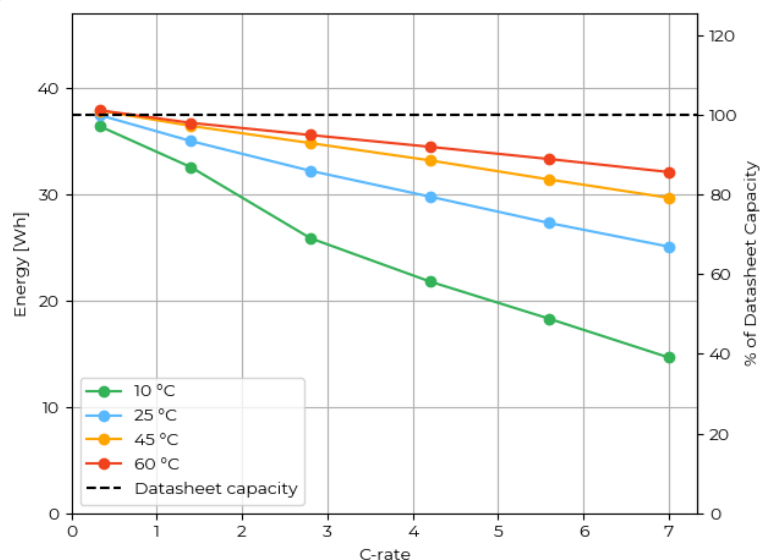
SES H10P



Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

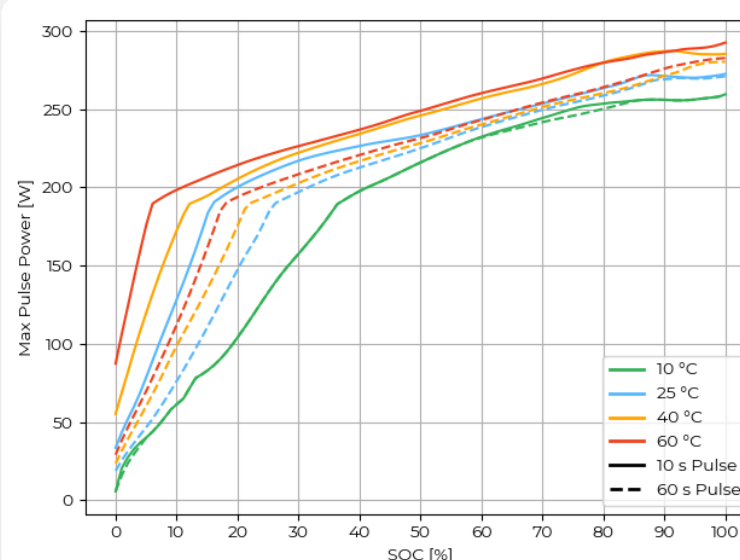


Energy Density: 329 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

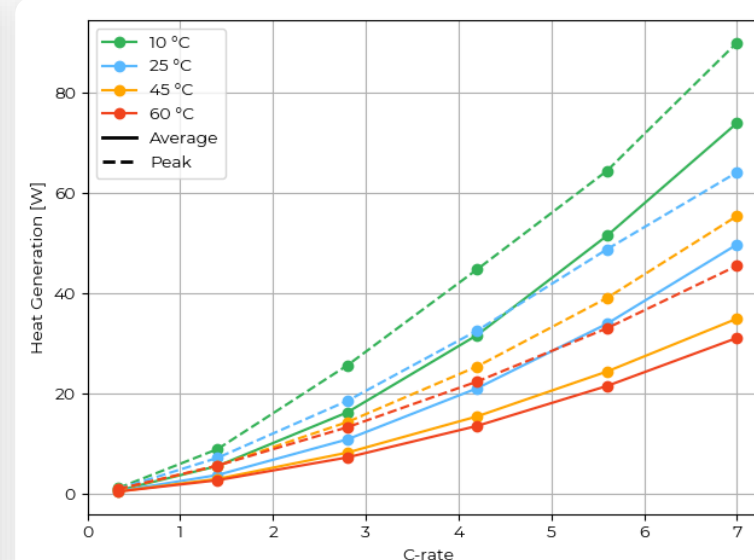


Power Density: 2055 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 4.4%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

TENPOWER

Tenpower



Founded in 2006 and headquartered in Zhangjiagang, Jiangsu, China, Tenpower is a volume cylindrical lithium-ion cell manufacturer producing 18650, 21700, and 26700 formats in NMC, NCA, and LFP chemistries. Its high-discharge cells, rated up to 45A continuous, are designed for power tools, robotics, and industrial platforms requiring reliable output under high thermal and mechanical stress.

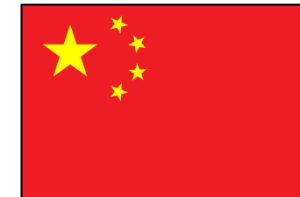
Tenpower has shipped billions of cells globally and operates production facilities in China alongside a Malaysian plant producing over 400 million cells annually. Its product range covers both high-power and high-energy variants with multi-stage quality control targeting consistent performance across demanding field conditions.

Key focus areas

Power tools, Drones,
Robotics

Key Facts

Founding Year	Headquarters
2006	China
Chemistry	A:E Verification
Lithium-ion	Yes



Tenpower Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
30PG	18650	3	10.8	6	30	10	615	230	6153	2298
30XC	18650	3	10.8	15	40	13.3	615	225	8205	3000
32HE	18650	3.2	11.52	3.1	10	3.1	649	250	2029	783
35HE	18650	3.5	12.6	3.4	10	2.9	710	263	2029	750
30TG	21700	3	10.8	6	40	13.3	427	164	5687	2182
40XC	21700	4	14.4	16	90	22.5	575	218	12934	4909
50ME	21700	5	18	4.9	15	3	707	254	2120	761

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

121

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Tenpower Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
50SC	21700	5	18	10	35	7	707	257	4947	1800
50XC	21700	5	18	15	90	18	710	257	12776	4629
58HE	21700	5.65	20.34	5.6	12.5	2.2	799	283	1767	625
60XC	21700	6	21.6	16	60	10	852	300	8517	3000
70XC	21700	7	25.2	10	35	5	-	341	-	1703
32HES	26700	3.2	9.92	-	10	3.1	251	115	783	360

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

122

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



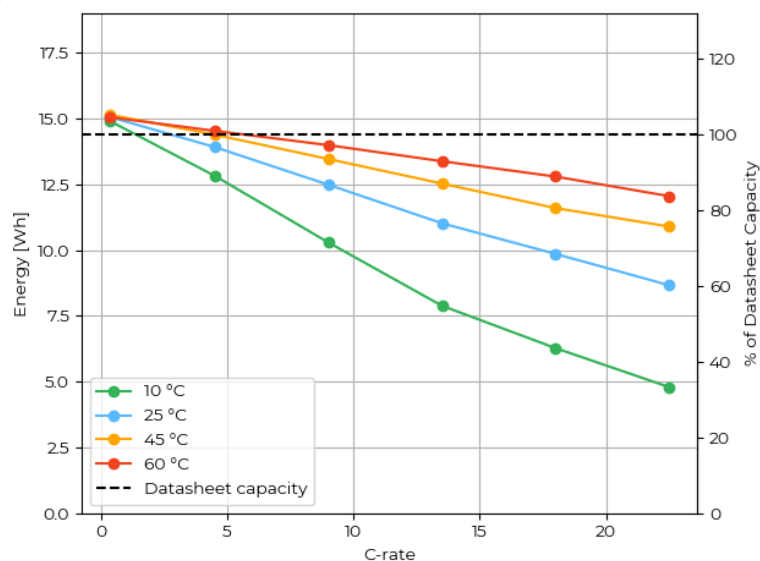
Tenpower 40XG

TENPOWER

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

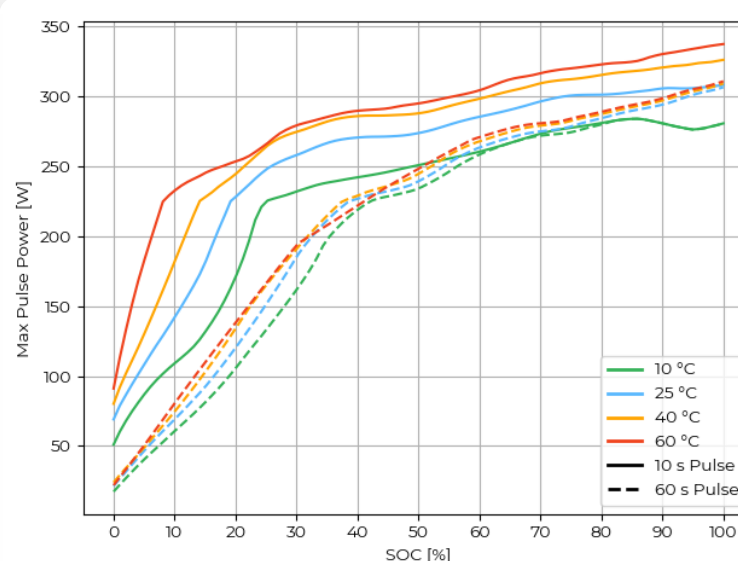


Energy Density: 228 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

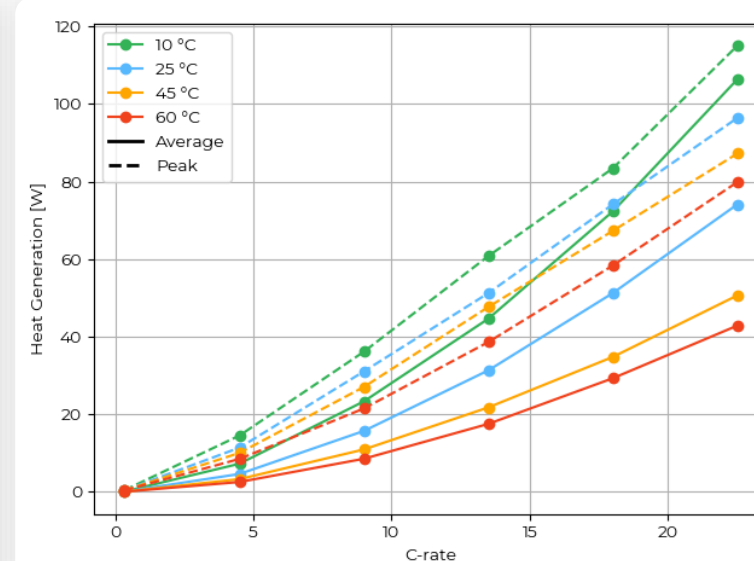


Power Density: 4152 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 1.7%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

123

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



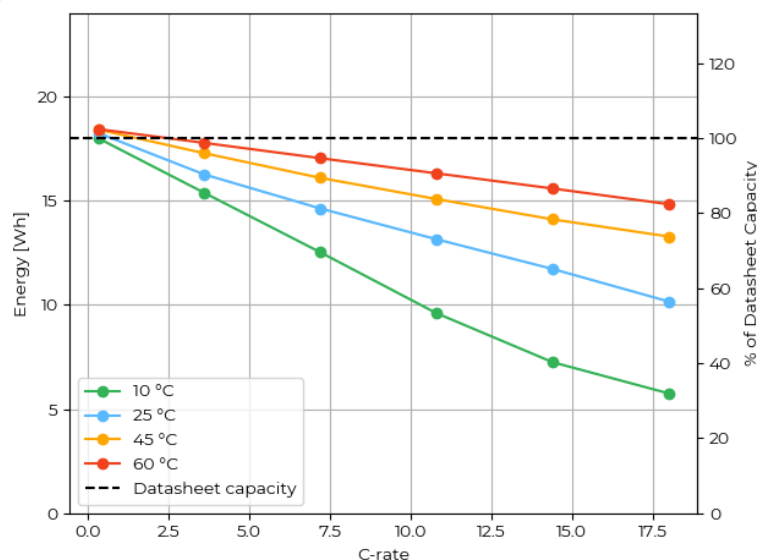
Tenpower 50XG

TENPOWER

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

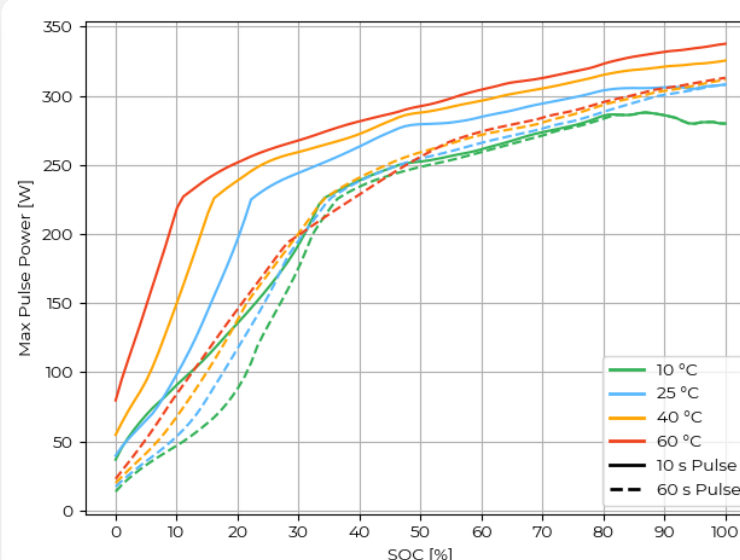


Energy Density: 257 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

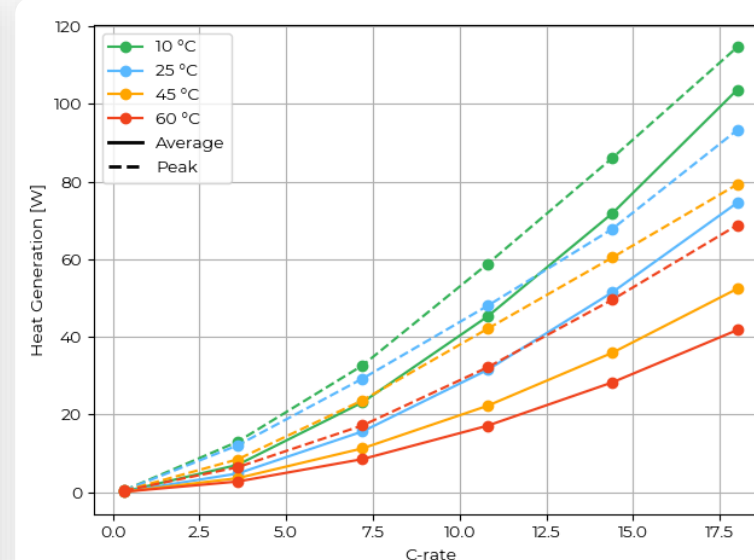


Power Density: 3935 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 2.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

ABOUT:ENERGY

Version 1.0

124

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



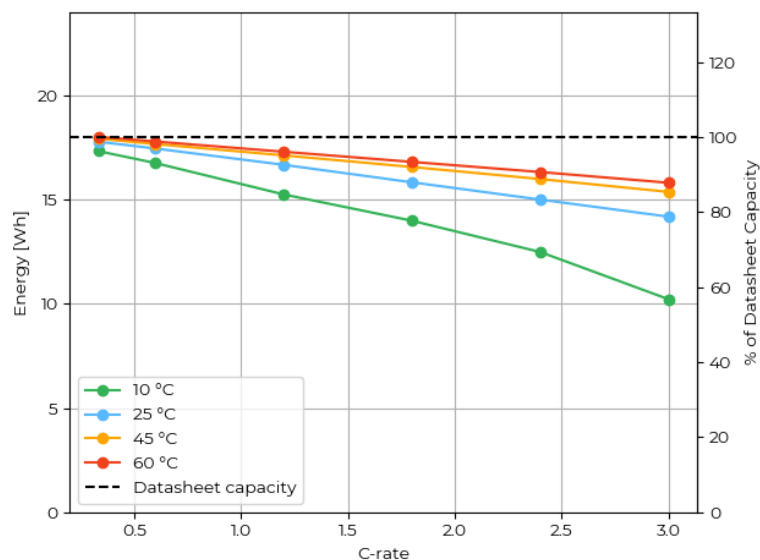
Tenpower 50ME

TENPOWER

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

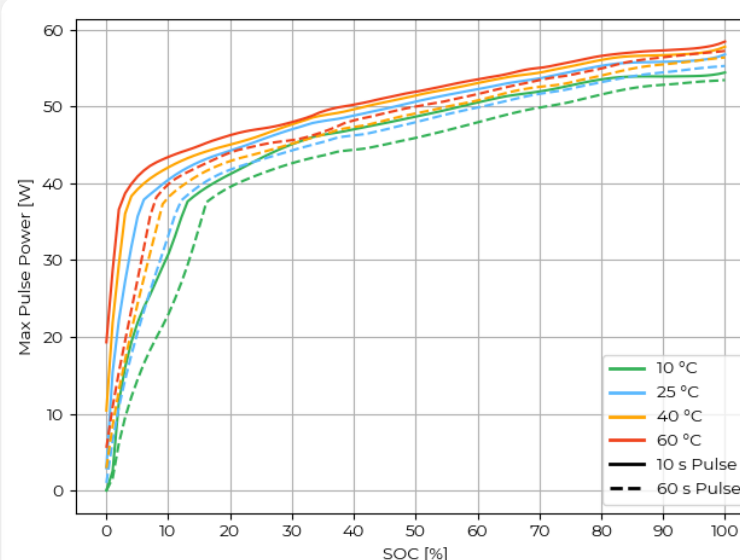


Energy Density: 261 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

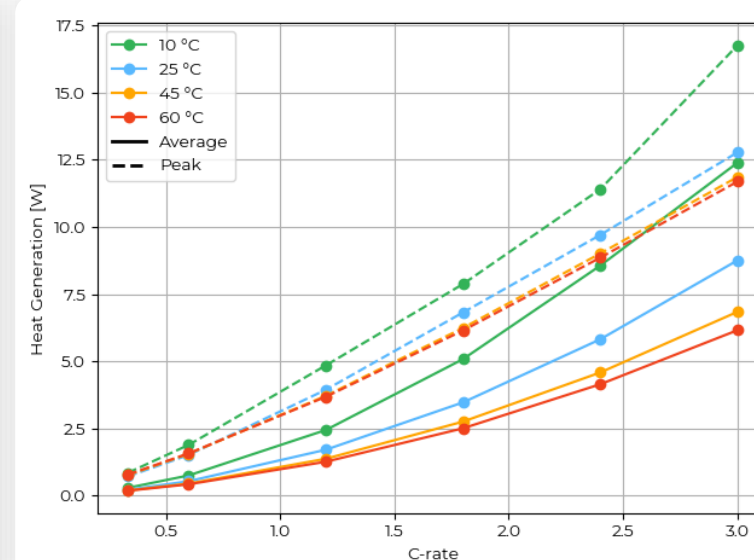


Power Density: 744 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.6%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

ABOUT:ENERGY

Version 1.0

125

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



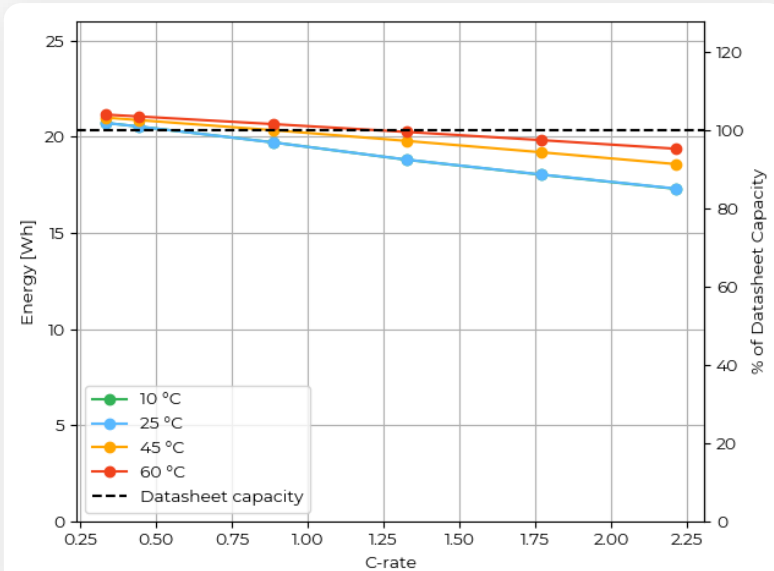
Tenpower 58HE

TENPOWER

Standardised metrics from About:Energy test data providing consistent electrical and thermal performance assessment. Enabling cell comparison and informing better pack design.

Energy

Total usable energy determining range, efficiency, and overall system capability

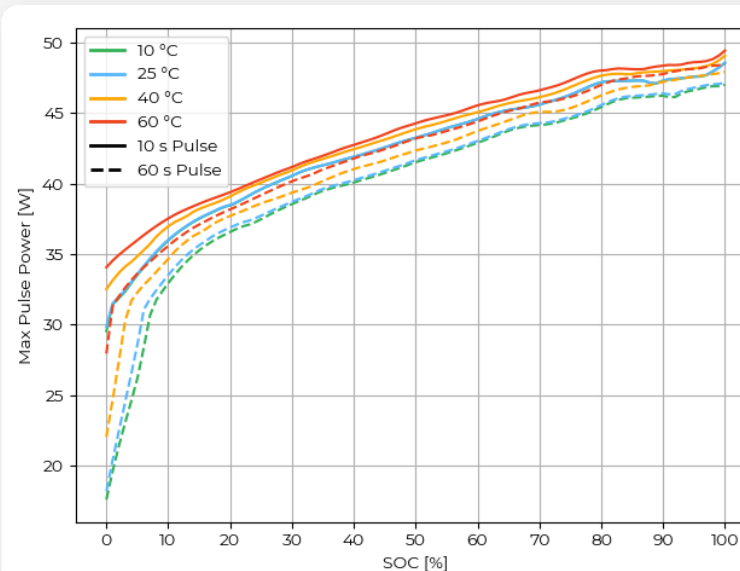


Energy Density: 280 Wh/kg

Simulated 1/3 C discharge energy divided by measured cell mass

Power

Ability to deliver sustained and peak performance under varying load conditions

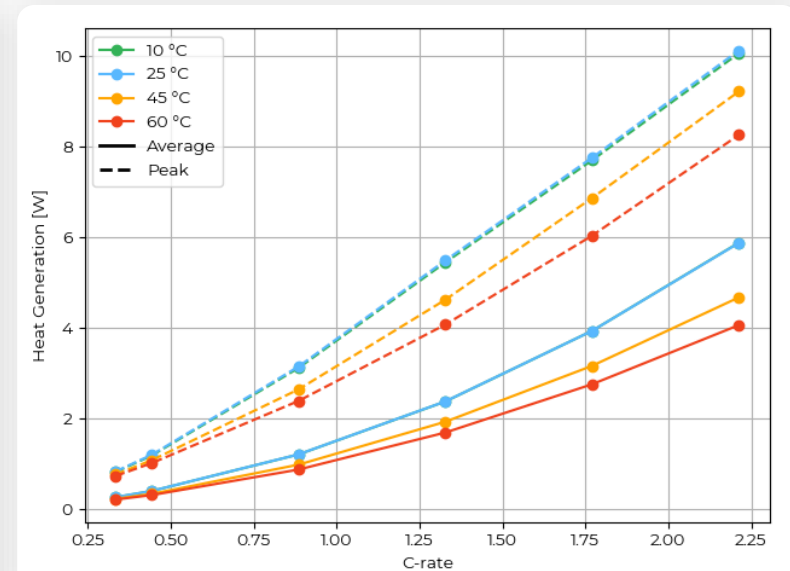


Power Density: 585 W/kg

Simulated 10 s peak power at 50% SOC, divided by measured cell mass

Heat Generation

Thermal output influencing cooling requirements, safety, and overall system reliability



TEL: 3.8%

Simulated energy lost as heat during a 1/3 C discharge as a percentage of output energy.

For data on 500+ cells: voltt.aboutenergy.io

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Version 1.0

126

Evaluate energy, power, and heat generation characteristics tailored to your use case: <https://voltt.aboutenergy.io/cell-library/>



Company Profiles – Category 2 (Manufacturer Data)

Overview of high-performance cell manufacturers, including relevant commercial products, using manufacturer data.



A123 Systems

Founded in 2001 as an MIT spinout and acquired by Wanxiang Group in 2013, A123 Systems is now headquartered in Hangzhou, China, with legacy US operations in Livonia, Michigan. Its Nanophosphate LFP cell portfolio serves automotive, energy storage and motorsport, with 12V and 48V low-voltage systems commanding a leading share of the global start-stop battery market. A123's proprietary super-nano LFP and NMC ternary

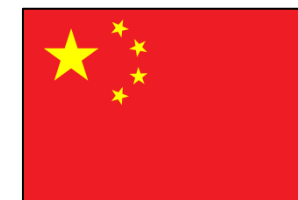
chemistries underpin a dual-track strategy: LFP for safety-led, high-volume low-voltage applications, and NMC for high-voltage BEV/PHEV platforms, including a supply role on VW's MEB architecture. The company is also developing semi-solid and all-solid-state cells, and its packs extend into Formula 1 and grid-scale storage, differentiating on chemistry breadth rather than a single-vertical focus.

Key focus areas

Automotive,
Motorsport, Energy
storage

Key Facts

Founding Year **2001** Headquarters **China**
Chemistry
Lithium-ion



A123 Systems Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
21700 S	21700	2.5	9.125	125	200	80	353	136	28218	10896
26700 GL	26700	3	10.95	60	240	80	288	126	23044	10092
18700	18700	0.8	2.6	40	120	50	149	69	22320	10421

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



Advantelec

Founded in 2011 and headquartered in Vénissieux, France, Advantelec provides custom electronic systems and lithium-ion battery solutions under its ADV-POWER brand, combining European quality standards with manufacturing support from a Chinese subsidiary. The company sources cells from established manufacturers including CATL and ATL, then designs and assembles custom packs to client

specification. Advantelec's battery lineup uses NMC and LCO chemistries tailored for energy density, thermal tolerance, and safety certification requirements, with a 2024 pilot line in France aimed at bringing cell production in-house. Its products include rugged UAV batteries and medical-grade packs, certified to IEC, EN, and UN safety standards.

Key focus areas

Drones, Robotics,
Aerospace

Key Facts

Founding Year	Headquarters
2011	France
Chemistry	
Lithium-ion	



Advantelec Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
3S300-20	Pouch	20	73	40	60	3	675	292	2024	876
3S300-25	Pouch	25	91.2	50	75	3	689	300	2068	900
3S300-32	Pouch	32	116.8	64	96	3	697	301	2091	903
3S300-35	Pouch	35	127.75	70	105	3	695	301	2085	902
3S340-20	Pouch	20	71	40	60	3	715	333	2145	1000
3S340-25	Pouch	25	88.75	50	75	3	712	341	2135	1024
3S340-4.4	Pouch	4.4	15.62	8.8	13.2	3	609	306	1828	919

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

131

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>

Advantelec Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
3S340-40	Pouch	40	142	80	120	3	752	341	2257	1022
EP260-10.2	Pouch	10.2	39.984	20.4	102	10	530	258	5299	2580

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



American Lithium Energy

Founded in 2006 and headquartered in Carlsbad, California, American Lithium Energy (ALE) develops high-performance lithium-ion batteries for defence, aerospace, and other demanding commercial markets. The company holds over 100 patents, with technology originally developed under U.S. Army and Air Force funding to solve discharge power and extreme temperature limitations in standard cells.

ALE's cells include a proprietary silicon-anode 18650 format capable of 200A discharge for short-duration high-power tasks, alongside patented zero-volt technology that allows batteries to be safely shipped fully discharged. Its cells power military systems, satellites, spacecraft, UAVs, and healthcare devices, and the company is expanding capacity with a new large-scale U.S. manufacturing facility.

Key focus areas

Defence, Aerospace,
Drones

Key Facts

Founding Year	Headquarters
2006	United States
Chemistry	
Lithium-ion	



American Lithium Energy Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
NMC3000	18650	3	11.1	3	15	5	627	241	3133	1207
NMC3500	18650	3.5	12.775	3.5	10.5	3	721	272	2163	815
Si4000	18650	4	13.8	8	6	1.5	784	294	1176	440
Si4000ZV	18650	4	13.8	8	8	2	792	294	1585	587
C-Si5500	21700	5.5	19.8	5.5	16.5	3	764	287	2293	861
NMC5000	21700	5	18.5	5	15	3	714	276	2142	828
NMC5500	21700	5.5	20.35	5.5	16.5	3	786	295	2357	885

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



Basquevolt

Founded in 2022 and headquartered in Vitoria-Gasteiz, Spain, BASQUEVOLT is a solid-state battery developer backed by the Basque Government, Iberdrola, CIE Automotive, and other industrial partners, with technology built on over a decade of research at CIC energiGUNE. The company aims to become Europe's leading producer of next-generation solid-state and lithium-metal batteries.

BASQUEVOLT's first commercial cell, the BQV400L, delivers 402 Wh/kg with 8.9C pulse power capability and HL3 safety certification, produced in Spain with 75% of components sourced within Europe. The company has signed a joint development agreement with Renault's Ampere EV division to validate the cells under automotive conditions, with production capacity targeted at 10 GWh by 2027.

Key focus areas

E-mobility,
Automotive, Energy
storage

Key Facts

Founding Year	Headquarters
2022	Spain
Chemistry	
Lithium-metal	



Basquevolt Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
BQV400L	Pouch	27	102.6	27	50	1.9	697	410	1290	2435

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

CustomCells

CustomCells

Founded in 2012 as a spin-off from the Fraunhofer Society and headquartered in Itzehoe, Germany, Customcells is a battery cell manufacturer that restarted in mid-2025 under a new investor consortium led by Abacon and Salvia following an insolvency triggered by customer Lillium's own collapse. Under new leadership, the company has refocused on tailor-made high-performance cells rather than its

previous broader e-mobility and aviation base. Customcells now prioritises special solutions for defence and motorsport applications, building on its ultra-fast silicon-dominant chemistries and modular cell formats developed for demanding OEM requirements. Customers include NATO system integrators and motorsport teams requiring qualified cells for extreme operating conditions.

Key focus areas

Motorsport, Defence,
Aerospace

Key Facts

Founding Year	Headquarters
2012	Germany
Chemistry	
Lithium-ion	



Customcells Battery Cell Products

CustomCells

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L)	Gravimetric Power Density (W/kg)
CC-HE-65C4D0-E374	Pouch	17.3	58.82	34.6	51.9	3	561	375	1684	1124
CC-HE-90C4D0-B353	Pouch	23.3	79.22	69.9	116.5	5	546	354	2730	1768

[†]For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io

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138

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



Enovix

Headquartered in Silicon Valley with facilities in India, South Korea, and Malaysia, Enovix is a battery technology company built around a proprietary 3D cell architecture that enables 100% active silicon in the anode, with no graphite. This design manages the swelling and mechanical degradation that has historically prevented silicon anodes from being commercially viable. Enovix's AI-1 platform

targets high-value, space-constrained applications including smartphones, smart eyewear, and defence systems, alongside emerging edge-AI devices. Its silicon-anode architecture is chemistry-agnostic, giving it flexibility to partner across cathode and electrolyte formulations while pursuing higher energy density than conventional graphite-anode cells.

Key focus areas

Consumer
electronics, Defence,
Robotics

Key Facts

Founding Year	Headquarters
2007	United States
Chemistry	
Lithium-ion	



Enovix Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
Giants	Pouch	7.406	26.81	15.55	14.81	2	923	320	1846	640
MX1-B01	Pouch	11.05	-	-	-	-	-	-	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



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140

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Grepow

Headquartered in Shenzhen, China, Grepow is a lithium battery manufacturer whose Tattu brand is one of the most established names in drone and UAV power. The company produces both LiPo and Li-ion cells, alongside semi-solid-state chemistry, with in-house stacking production technology built for high discharge rate applications.

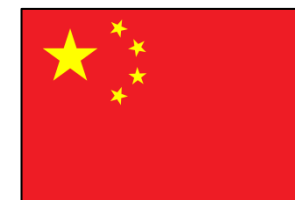
Grepow's high discharge rate cells reach up to 275 Wh/kg with peak currents of 200A, and its Tattu smart battery ranges support fast charging up to 5C with lifespans exceeding 600 to 1000 cycles. Its products span FPV racing, industrial and agricultural drones, and eVTOL platforms, alongside RC hobby, wearable, and IoT applications.

Key focus areas

Drones, Robotics,
Consumer electronics

Key Facts

Founding Year	Headquarters
1998	China
Chemistry	
Lithium-ion	



Grepow Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
GRP4464159	Pouch	8	29.6	-	-	-	700	352	-	-
GRP5370175	Pouch	12	44.4	-	-	-	718	352	-	-
GRP5664159	Pouch	10.5	38.85	-	-	-	715	356	-	-
GRP8082133	Pouch	15.8	58.46	-	15.8	1	700	340	700	340
GRP8575195	Pouch	23.2	85.84	-	23.2	1	719	341	719	341
GRP88A3217	Pouch	41	151.7	-	-	-	802	367	-	-
GRPA1F0270	Pouch	87	321.9	-	-	-	819	372	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

Grepow Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
GRPC0F0270	Pouch	99	366.3	-	99	1	773	342	773	342
GRP9067124	Pouch	13.7	50.69	13.7	60	4.4	663	313	2902	1370

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



Lishen

Founded in 1997 and headquartered in Tianjin, China, Lishen is a state-backed lithium-ion battery manufacturer and one of the earliest dedicated Li-ion R&D and production firms in the country. The company operates across five production bases in Tianjin, Qingdao, Suzhou, Chuzhou, and Wuxi, with roughly 31 GWh of annual

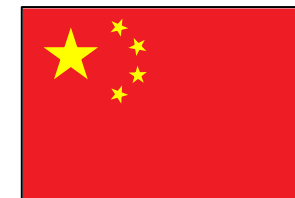
capacity. Lishen's product range spans cylindrical, prismatic, and polymer cells, alongside advancing sodium-ion and semi-solid-state technologies. Its batteries serve consumer electronics, EVs and HEVs, and grid-scale energy storage, with a market share ranking among the largest in the global high-end lithium-ion segment.

Key focus areas

E-mobility, Energy storage, Consumer electronics

Key Facts

Founding Year	Headquarters
1997	China
Chemistry	
Lithium-ion	



Lishen Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
2170LE	21700	5	18	-	-	-	715	257	-	-
2170LH	21700	3	10.8	30	45	15	403	152	6049	2282
LR2170SS	21700	6	21.6	-	-	-	-	-	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

145

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



StoreDot

Founded in Herzliya, Israel, StoreDot is the pioneer of extreme fast charging (XFC) battery technology, using silicon-dominant chemistry augmented by nanotechnology and AI-optimised materials. The company's core mission is eliminating range and charging anxiety as the last major barrier to mainstream EV adoption. StoreDot's XFC cells can add 100 miles of range in 5 minutes, sustaining over 1,200

consecutive fast-charge cycles without additional degradation compared to standard slow charging. Its technology is in active testing with more than 15 global automakers, including Polestar, Volvo Cars, and VinFast, with a public roadmap targeting 100 miles in 3 minutes by 2028 and 2 minutes by 2032.

Key focus areas

E-mobility,
Automotive,
Motorsport

Key Facts

Founding Year	Headquarters
2012	Israel
Chemistry	
Lithium-ion	



StoreDot Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
380E	46950	38	126.92	159.6	200	5.3	798	288	4202	1518

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

147

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Trydan Tech

Founded in 2020 and headquartered in Thiruvananthapuram, India, with an R&D presence in California, Trydan Tech is a battery technology company developing high-power, high-energy lithium-ion cells across lithium-ion and sodium-ion chemistries. Its proprietary approach targets the gap between high power density and high energy density, rather than optimising for one at the expense of the other. Trydan Tech's cell

technology delivers roughly double the power density of conventional cells, with fast charge times and strong thermal stability, engineered for EVs, eVTOLs, AI data centres, and industrial applications. The company positions itself across mobility, aerospace, and industrial energy storage as it scales from R&D toward commercial production.

Key focus areas

E-mobility,
Aerospace, Robotics

Key Facts

Founding Year Headquarters
2020 **India**

Chemistry
Lithium-ion/metal



Trydan Tech Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
HV	Pouch	10	39	40	150	15	604	300	9056	4500
5000T	21700	5	18	15	60	12	700	254	8403	3042
6000T	21700	6	21.6	10.8	60	10	828	300	8281	3000

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



UniverCell

Founded in 2019 in Kiel, Germany, UniverCell is a lithium-ion cell and electrode manufacturer operating Europe's largest electrode and cell production facility dedicated to non-automotive markets. The company focuses on custom high-performance 21700 cylindrical cells with a lightweight aluminium housing, built for sectors that large automotive-focused gigafactories tend to overlook. UniverCell's core

advantage is a proprietary dry electrode coating process that replaces the solvent-based slurry method used across the industry, alongside in-house control of cell formation. Its cells serve satellites and space systems, medical devices, maritime applications, robotics, and electric flying, with series production scaling toward 1.3 GWh of annual capacity by 2027.

Key focus areas

Aerospace, Marine,
Robotics

Key Facts

Founding Year	Headquarters
2019	Germany
Chemistry	
Lithium-ion	



UniverCell Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
HE60	21700	6	20.7	24	36	6	851	329	5108	1971

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

151

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



Volklec

Founded in 2023 and headquartered in Coventry, Volklec is a UK battery manufacturer targeting niche and low-volume vehicle makers underserved by large-scale gigafactories. The company operates under an exclusive licensing and knowledge transfer agreement with Chinese manufacturer Far East Battery, giving it proven cell technology without the capital risk that sank previous UK battery ventures.

Volklec is producing two 21700 cylindrical cell types at the UK Battery Industrialisation Centre in Coventry: an NMC energy cell for e-mobility and stationary storage, and a power cell for specialist automotive, aerospace, marine, and off-highway applications. The company has outlined plans for a 1 GWh line by the end of 2026 and a 10 GWh gigafactory by the end of the decade.

Key focus areas

Automotive,
Aerospace, Marine

Key Facts

Founding Year Headquarters
2024 **United Kingdom**

Chemistry
Lithium-ion



Volklec Battery Cell Products



Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
VLKCE50	21700	5	18	5	15	3	676	247	2027	740
VLKCP50	21700	5	18	25	60	12	689	257	8270	3086

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

153

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



Welion

Founded in 2016 as a spin-out from the Chinese Academy of Sciences' Institute of Physics, WeLion is a solid-state and semi-solid-state battery developer headquartered in Beijing, with production bases across Jiangsu, Zhejiang, and Shandong. Its founding team includes Chen Lique, widely regarded as the father of Chinese lithium batteries and doctoral advisor to CATL's founder. WeLion's hybrid solid-

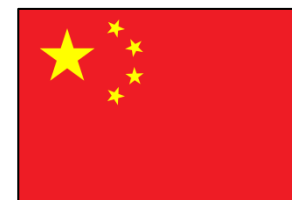
liquid cells have achieved 824 Wh/kg in lab testing, with a long-term target beyond 1000 Wh/kg, and its semi-solid packs already power NIO's production EVs at a record-breaking driving range. The company also produces solid-state cells for drones and UAVs, and is positioning humanoid robotics as an early commercial application for its highest energy density chemistry.

Key focus areas

Area 1, Area E-mobility, Drones, Robotics2, Area 3

Key Facts

Founding Year	Headquarters
2016	China
Chemistry	A:E Verification
Lithium-ion	Yes



Welion Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
PL11911835 9-106Ah	Pouch	106	376.3	-	106	1	726	345	726	345
SHP270-16	Pouch	16	59.2	32	80	5	567	257	2835	1287
SHP270-22	Pouch	22	81.4	44	110	5	588	263	2942	1313
SHP270-27	Pouch	27	99.9	54	135	5	601	271	3003	1357
SHP270-30	Pouch	30	111	60	150	5	601	271	3006	1357
SHP320-20	Pouch	20	73	40	100	5	636	286	3178	1431
SHP320-25	Pouch	25	91.25	50	125	5	654	295	3268	1477

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

Welion Battery Cell Products

Cell Name	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
SHP320-32	Pouch	32	116.8	64	160	5	663	296	3313	1482
SHP320-35	Pouch	35	127.75	70	175	5	672	308	3360	1539
SHP800L-35-CYL	4695	35	125.3	105	105	3	784	288	2353	864

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume



V4Smart

Founded in 2022 as V4Drive, a joint venture between Varta and Porsche, V4Smart was fully acquired by Porsche in March 2025 and renamed, with Varta AG retaining a minority stake. The company specialises in ultra-high-performance cylindrical lithium-ion cells, combining Varta's cell chemistry heritage with Porsche's manufacturing and industrialisation expertise. V4Smart's second-generation portfolio includes the V21700 HP-5X, its new flagship for

broader high-power applications, and the V21700 UHP-3X, both offering significantly higher continuous power than the first generation. Its Generation 1 cell already powers Porsche's hybrid models as a booster cell, absorbing and releasing bursts of power for short-term peaks, and the company is now expanding beyond Porsche to attract new customers and applications.

Key focus areas

Motorsport, E-mobility, Automotive

Key Facts

Founding Year	Headquarters
2021	Germany
Chemistry	
Lithium-ion	



V4smart Battery Cell Products



Cell Name-	Form Factor	Capacity (Ah)	Energy (Wh)	Max Charge (A)	Max Discharge (A)	Max Continuous Discharge (C-rate)	Volumetric Energy Density (Wh/L)	Gravimetric Energy Density (Wh/kg)	Volumetric Power Density (W/L) †	Gravimetric Power Density (W/kg) †
UHP-26	21700	2.6	9.62	25	100	38.5	390	136	15010	5248
UUHP-3X	21700	3	10.8	-	-	-	-	-	-	-
V21700 HP-5X	21700	5	18	-	-	-	-	-	-	-

†For consistency between cell manufacturers it should be noted power density calculations from The Voltt manufacturer database are:
power densities (W/kg and W/L) = max continuous discharge current * nominal voltage / mass or volume

For data on 500+ cells: voltt.aboutenergy.io



Version 1.0

158

This includes a sub-set of the most popular cells we see. For full list go to: <https://voltt.aboutenergy.io/cell-library/>



Regulation

Key regulatory and policy shaping viable battery cell and system choices.

Regulation Is Redefining What a Good Battery Decision Looks Like

Performance alone no longer determines which cells make it into a product. Policy is now a design constraint.

For most of the history of lithium-ion development, cell selection was an engineering problem. You optimised for energy density, power, cycle life, and thermal behaviour. The best-performing cell won. That is no longer the full picture. Across every high-performance vertical, regulation and procurement policy are reshaping which cells are permissible, which supply chains are viable, and which programmes can reach market. A cell can pass every performance requirement and still disqualify a platform. A supply chain acceptable last year may be non-compliant by 2028. A product without certified battery data can face liability exposure the moment it enters a regulated environment.

Cell selection is now a technical and strategic decision. Get it wrong and you face late-stage redesign, failed procurement bids, or blocked market access. Get it right, early, with the right data, and it becomes a competitive advantage. The following slides cover the key regulations shaping battery design across five verticals.

- **Motorsport:** F1 2026 rules demanding 350 kW continuous electrical output within strict mass limits
- **Drones and defence:** US NDAA restrictions requiring full material origin and IP independence from foreign entities of concern, in force January 2028
- **Aviation and eVTOL:** EASA and FAA airworthiness frameworks making cell characterisation data a certification input
- **Space:** ESA and NASA standards imposing the strictest screening and operating envelope requirements applied to any lithium-ion cell
- **Robotics:** EU Machinery Regulation 2023/1230 bringing battery safety into product liability law from January 2027

Defense and Drone Supply Chains Are Evolving Away from China

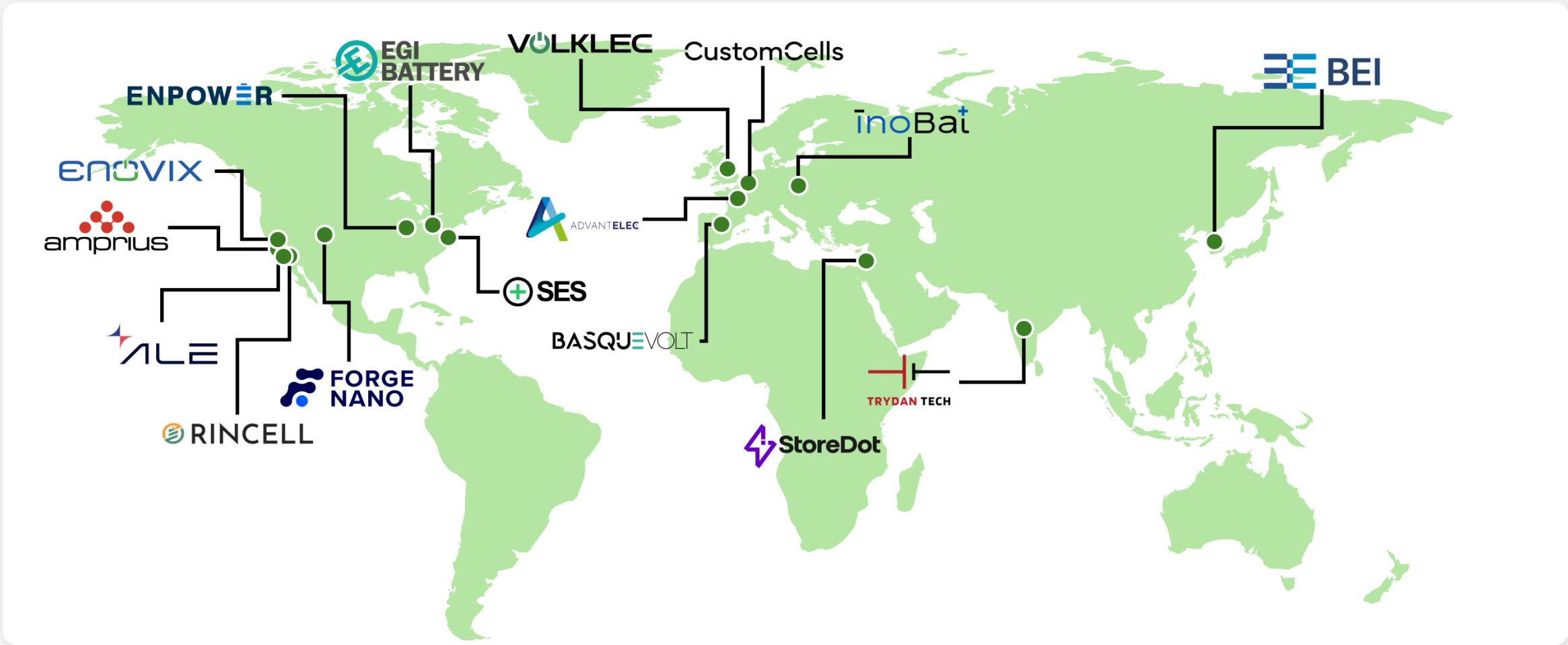
US Battery Procurement Rules Will Lock Chinese-Influenced Cells Out of Any DoW System from 2028 *NDAA Advanced Battery Restrictions | In force: 1 January 2028*



What it is From 2028, for new acquisition programs the US Department of War may only procure advanced batteries meeting strict criteria on material origin, manufacturing, and IP independence. Over 95% of electrode active materials must come from non-foreign entities of concern, covering cathodes, anodes, foils, electrolytes, salts, and additives. Cells cannot use licensed technology from foreign entities of concern where licences involve time limits, ownership, or technology transfer. The restrictions apply to batteries and any system where a battery is a substantial or critical component.

What it means for battery design The dominant global supply chains for cathode active materials, anode graphite, electrolyte salts, and process IP are heavily concentrated in China. Most high-performance cylindrical cells available today either source materials from or rely on processes licensed through entities that fall within scope. Design teams need to audit their cell supply chain at the material level, not just the manufacturer level, well before 2028. This is where cell selection becomes both a compliance risk and a strategic opportunity. Platforms built around a compliant, well-characterised cell pool gain a procurement advantage that is difficult for competitors to close quickly. Those that delay the audit, or assume manufacturer-level compliance is sufficient, risk disqualifying their platform late in development when switching cost is highest. Modelling-driven selection across the narrower compliant pool is the only way to compress that risk without sacrificing performance confidence.

Battery developers towards NDAA supply chain compliance



This manufacturer map is based on manufacturers claims and public data about plans to meet NDAA compliance for some of all of their battery products by 2028. This is not an exhaustive list and will be updated quarterly as manufacturers plans and the regulation develops.

eVTOL Certification Starts With the Battery

Airworthiness Certification Is Now the Longest Lead-Time Item in Any eVTOL Battery Programme *EASA SC-VTOL: Enacted June 2019 | FAA AC 21.17-4: Issued 2021 | Active and evolving*



What it is EASA's Special Condition for VTOL aircraft and the FAA's equivalent framework impose formal certification requirements on energy storage systems in powered-lift aircraft. Requirements cover cell-level and pack-level thermal runaway containment, defined safe operating envelopes, and full traceability of cell performance across the certified operational lifetime.

What it means for battery design A single-cell thermal runaway event must demonstrably not propagate, which determines module geometry, inter-cell spacing, and thermal management architecture before any performance optimisation begins. Certification bodies require documented, repeatable performance data across the full operating envelope, including degradation behaviour across temperature and C-rate. This makes cell selection one of the highest-stakes decisions in the programme. A cell chosen without full characterisation data forces expensive redesign when evidence gaps surface during type approval. Conversely, a cell selected early with high-fidelity model support accelerates the verification process and reduces certification schedule risk. The teams that treat cell selection as a certification input, rather than a procurement afterthought, reach type approval faster and with fewer late-stage surprises.

Space Sets the Hardest Battery Requirements

Space-Grade Battery Standards Impose the Strictest Operating Envelope Ever Applied to a Lithium-Ion Cell *ECSS-E-ST-20-30C: Updated 2021 | NASA JSC 20793 Rev D: Issued 2022 | Active*

What it is The ESA electrical standard and NASA's crewed spacecraft battery safety requirements define the conditions under which lithium-ion cells may be used in space applications. Both mandate rigorous cell-level screening, strict safe operating limits, and full electrochemical characterisation across the mission profile, including low temperature, vacuum, and radiation exposure.

What it means for battery design Space applications operate cells well below their rated limits with no opportunity for maintenance or replacement once deployed. Headline energy density is largely irrelevant. What matters is cycle stability, predictable degradation across wide temperature ranges, and low self-discharge. For deep space and lunar missions, autonomous battery management is only implementable reliably with high-fidelity cell models that accurately represent degradation over the full mission duration. Batch consistency also carries direct programme risk. A cell that performs well in initial testing but shows production variance will not pass qualification regardless of its nominal specification.



Motorsport Battery Rules Are Changing Fast

F1's 2026 Power Unit Rules Set the Most Demanding Battery Specification Ever Written Into a Racing Rulebook *Enacted: October 2022 | In force: 1 January 2026*



What it is The 2026 Formula 1 technical regulations mandate a 50/50 split between internal combustion and electrical power output, raising the hybrid system's electrical contribution from approximately 160 kW to 350 kW. The energy store must sustain this within strict constraints on total mass and capacity, with no relaxation on pack volume.

What it means for battery design At 350 kW continuous electrical output, any cell optimised primarily for energy density is eliminated before engineering begins. Teams need sustained high C-rate discharge with minimal voltage sag, cycle stability over a full race distance, and thermal behaviour that stays predictable under repeated aggressive load pulses. Mass limits on the complete power unit mean a thermally marginal cell with a strong Wh/kg figure is still disqualified. Cell selection here is both the critical risk and the primary performance lever. A wrong choice costs race outcomes. A right one, validated early through simulation across the actual duty cycle, creates a measurable competitive advantage before a wheel turns. The teams that close this decision fastest, with the highest confidence, are the ones with the best data behind their cells.

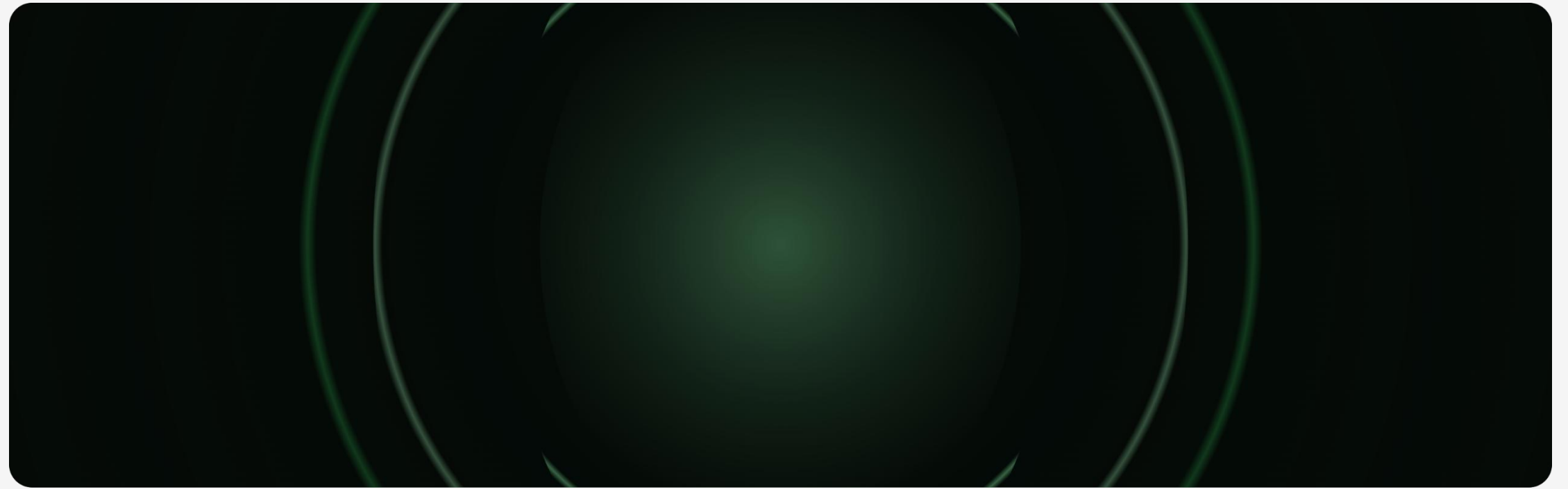
Robotics Safety Regulation Is Arriving Quickly

The EU Machinery Regulation Brings Humanoid Robots Into Industrial Safety Law, and Battery Systems Are Explicitly in Scope *Enacted: June 2023 | In force: 14 January 2027*

What it is EU Machinery Regulation 2023/1230 replaces the existing Machinery Directive and extends formal safety requirements to autonomous and collaborative machines, including humanoid and industrial robots. Energy storage hazards are addressed explicitly. Battery systems must not present unacceptable risk to operators during normal use or foreseeable misuse.

What it means for battery design Humanoid and industrial robots impose a duty cycle that is genuinely difficult to design for. High peak currents during dynamic movement, prolonged low-rate draw during standby, and highly variable load patterns between them combine in a way that fixed C-rate degradation models handle poorly. Thermal runaway risk and degradation behaviour are no longer just engineering considerations. They are product liability and market access questions. Cell selection becomes a compliance decision with commercial consequences. A cell chosen without characterisation across the real operating profile creates regulatory exposure that surfaces at the worst possible time, during product launch or customer audit. Programmes that build cell selection around validated degradation data across the actual duty cycle reach compliance faster, reduce liability risk, and carry a credible safety story into a market where that is increasingly a procurement criterion.





The Voltt

Independent, application-relevant cell data has never been available at the start of a programme. That is why we built it.

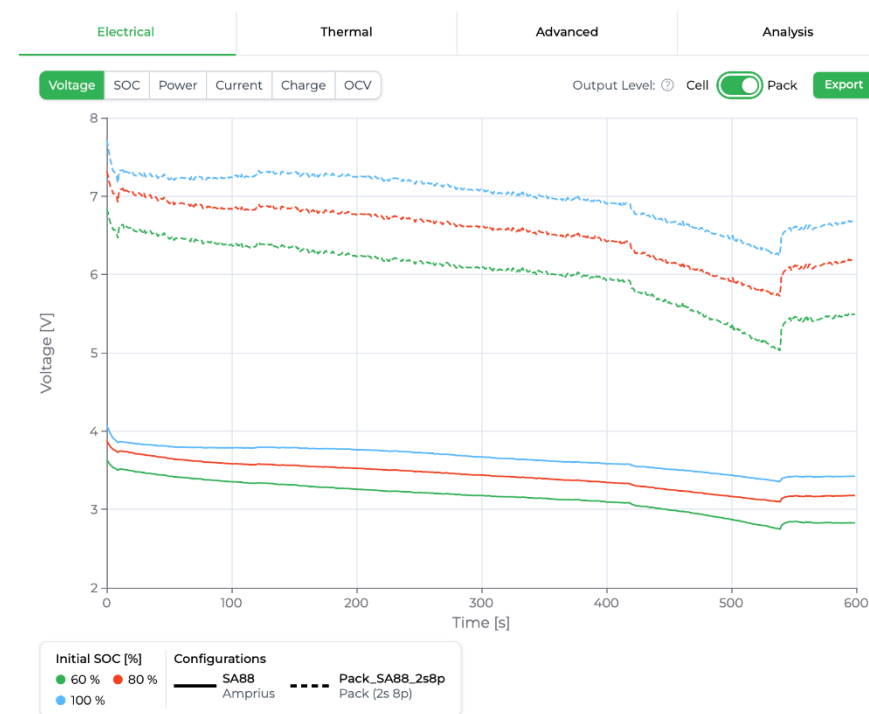
Why We Built The Voltt

Cell datasheets do not tell you how a cell will perform in your pack.

High-performance battery programmes run on tight timelines. New cell chemistries are entering the market faster than engineering teams can physically sample and test them. And the data underpinning most cell selection decisions, manufacturer spec sheets, is optimistic by design, measured under idealised conditions, and disconnected from real application constraints.

The result is a selection process that looks rigorous but is not. Teams are choosing cells based on peak headline figures, with limited visibility into how those cells behave under sustained load, across temperature, or as they age. That gap, between published performance and actual in-pack behaviour, is where programme risk lives.

Cell selection is a multi-objective problem. Capital cost, power capability, energy density, and long-term operating cost all pull in different directions. No cell wins on all four. Making the right call requires data that goes beyond what any manufacturer will publish: independently characterised, simulation-ready, comparable across the field.

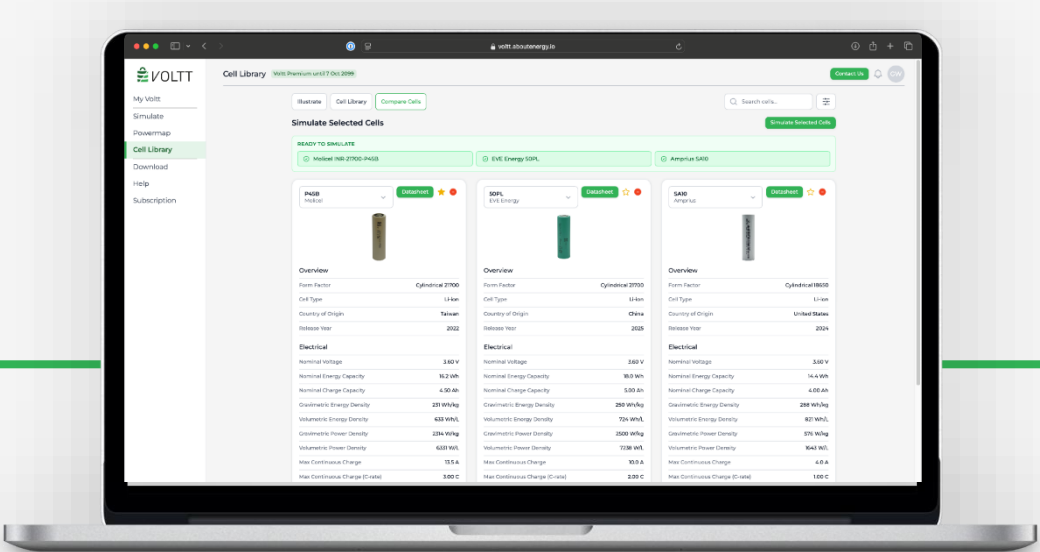


Supporting Pack Designers to Evaluate New Batteries

A few of our public customers.



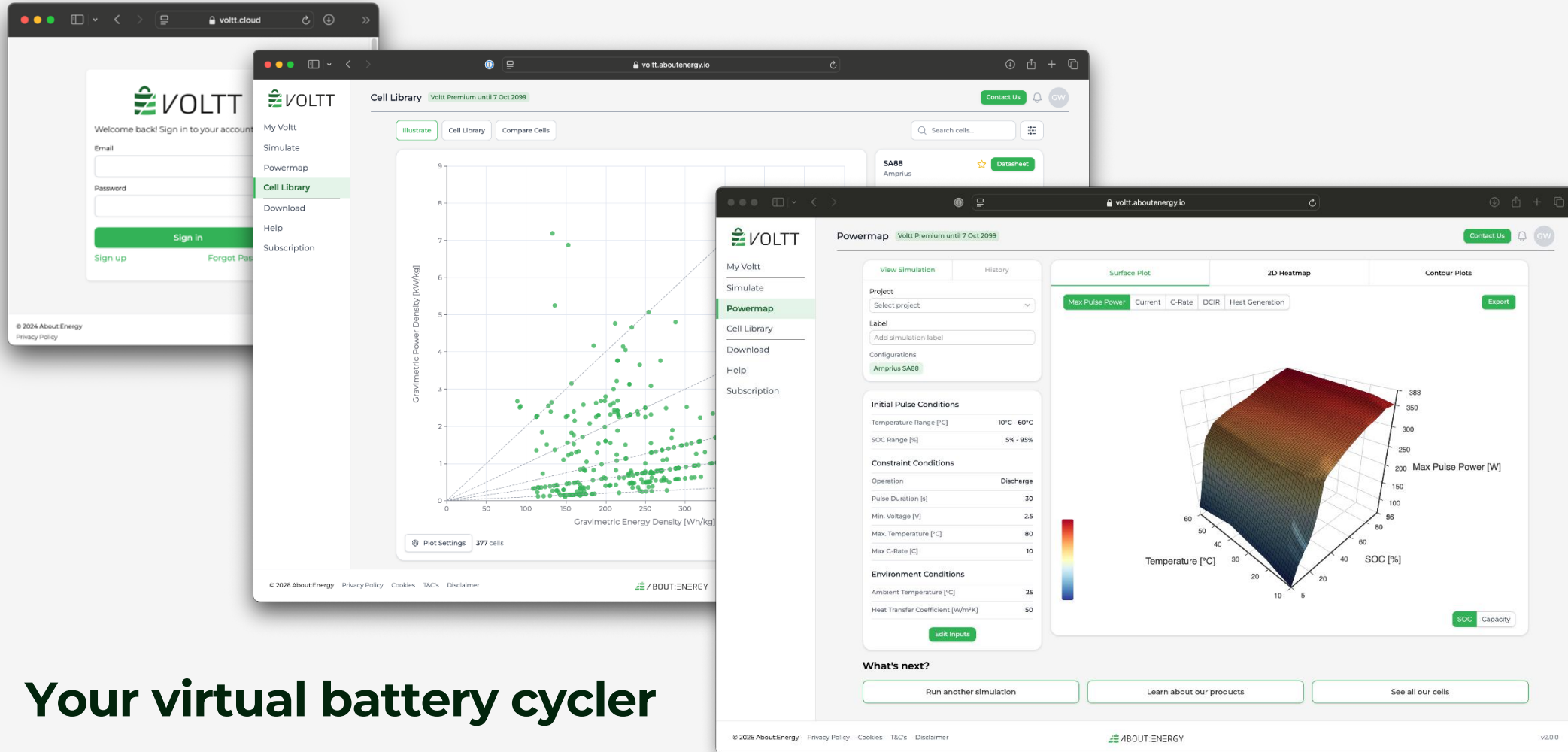
We connect battery manufacturers with engineers evaluating cells



Cell Manufacturers

Battery Pack Designers

The Voltt Enables Rapid Evaluation of High-performance cells



Your virtual battery cyclor

A Simple Workflow That Fits How Engineers Work

1.

Explore The Voltt

Get hands-on with a demo version of our simulation platform. View example KPIs of mission profiles and see how our models support real-world design decisions.

2.

Access 40+ Cells

Browse our growing library of commercial cells – all pre-tested and modelled. Need a cell we don't have? Request it, and we'll test and add it within 5 weeks.

3.

Simulate

Run performance simulations across energy density, heat generation, voltage response and more. Assess which cell fits your pack design or mission profile best.

4.

Select

Compare performance results across multiple cells and mission profiles. Identify the best fit for your design goals—whether that's maximising range or performance.

...turning cell evaluation from months into minutes.

Case Study: EFT Mobility

Trusted by Teams Pushing Performance Limits

9 month

Saving in development
time

“ We needed to understand the performance limits, especially at low speeds, for landing for UAV applications. We achieved uniform, **high quality** results.”



Forward Outlook

A look at what this report will cover next, and how to stay updated as it grows.

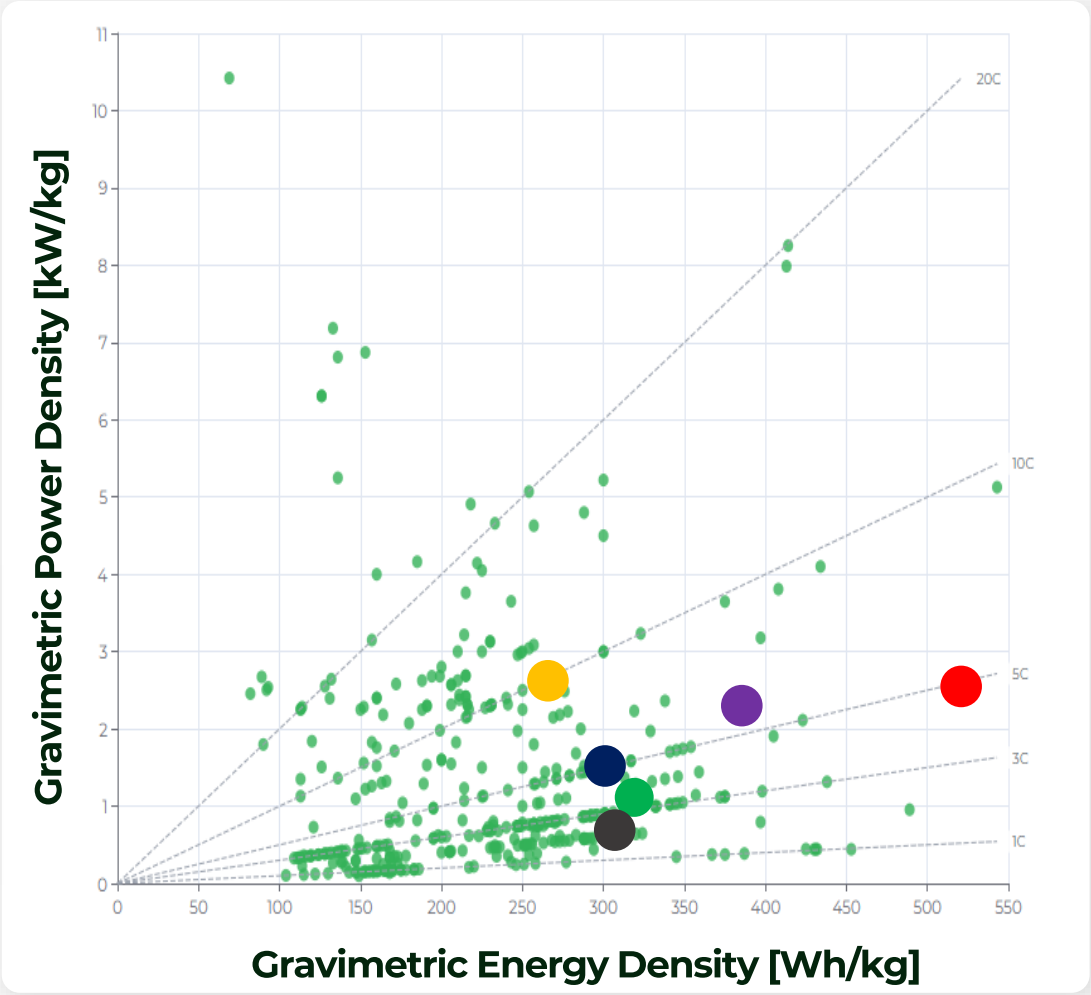
Six popular cells we are seeing for H2 2026

21700 Power

Amprius SA124
Reliance RS60

21700 Energy

Molicel M65A
FEB 68E



Pouch Energy/Power

BEI MUL20A
Amprius SA504

Why Independent Cell Data Matters

Cell selection is a complex, multi-variate problem. Energy density, power capability, and thermal efficiency are a starting point, not a conclusion. Real-world performance is also shaped by degradation rate, procurement cost, supply chain stability, and environmental impact across the full cell lifecycle. Any single metric, viewed in isolation, risks optimising for the wrong outcome. This report begins to map the landscape. It does not complete it.

Manufacturer datasheets are a necessary but insufficient basis for cell selection. They are produced under controlled conditions, they are not independently verified, and they do not capture how a cell behaves under real load profiles, thermal stress, or across thousands of cycles. For engineering teams making decisions that lock in product cost, safety margins, and long-term reliability, that gap is consequential.

Our purpose at About:Energy is to close it. Every cell in this report has been independently tested and modelled, with performance figures derived from our own lab characterisation and simulation workflows rather than taken from a spec sheet. That process is what makes the data in this report actionable. As the cell landscape evolves and new chemistries reach commercial viability, we will continue to evaluate them on the same basis and add them to the dataset.

The cells in this edition are a snapshot of what the frontier looks like today. The frontier moves quickly. So will we.

What the Next Edition Will Cover

This report covers energy density, power density, and thermal efficiency. These are meaningful, but they represent only part of the picture. Expanding the scope is a deliberate priority as new cells enter our labs and additional data matures through our modelling workflows.

Upcoming additions to the dataset for the **2027** editions:

- **Next-generation formats:** 4680 and large-format cylindrical cells, plus lithium metal chemistries targeting step-change energy density gains. Both have faced barriers to adoption at scale and will be evaluated as commercially viable versions reach our labs.
- **Cycle life and capacity fade:** Measured under real duty cycles to show how cells hold up over time in demanding applications, not just under standard test conditions.
- **Total cost of ownership:** Cell-level cost data connecting raw performance to procurement and lifetime economics for more complete selection decisions.
- **Environmental impact:** Lifecycle assessment metrics across cell chemistry and manufacturing origin, to support decisions in the face of environmental regulation.

This report is updated quarterly. You will receive the next edition direct to your inbox. Sign up to Voltt at voltt.aboutenergy.io/signup to be notified when new cell models and datasheets are added.

Access at: <https://voltt.aboutenergy.io/signup>