

E-bike Battery Systems

Powering the evolution of battery technology

Johnson Matthey Inspiring science, enhancing life

Johnson Matthey Battery Systems

Designer and manufacturer of high-quality e-bike battery systems

We are experienced producer of li-ion e-bike batteries, with a portfolio of high-quality battery systems used by clients worldwide.

Our exceptional expertise in the industry allow us to meet all clients' demands, and we've become a valued partner of several major businesses.

We stand with those calling for cleaner modes of transport and support our customers throughout e-bike battery development, as well as with production, encouraging environmentally friendly practices throughout the process.

As one of Europe's top battery manufacturers, we've been providing tailored solutions to e-bike industry for **over 20 years.** And we are proud of our excellent industry reputation in the market.

Our success is almost entirely down to the hard work and drive of our team. They have propelled our exceptional growth over previous years, and we expect to see this growth continue.



>3.5 million batteries produced per year

>1000 employees

>100 million cells used annually

12,500 sqm advanced manufacturing plant

One stop shop battery provider

All core competences in one location, ensure an optimal solution for your application.

In-house laboratories for efficient and cost-effective testing – including UN 38.3 – and R&D



Battery design and manufacture to meet the requirements of all external certifications



Produced in Europe with easy access to high-quality components and close to major air and road transportation routes for fast delivery



External locations for alternative cell tests to expedite time to market and promote savings



Rapid and agile prototyping to ensure brief compliance and enhanced speed to market



Easily scalable production lines to facilitate speedy manufacture of products regardless of order size.

E-bike batteries tailored to your needs

Powered by the pursuit of innovation

We prioritise our clients' wants and needs. Before beginning any partnership, we listen carefully, ensuring we understand exactly what you need. We then work diligently to find the best possible solution.

Our expertise, allied with our resources, ensure we're well-placed to plan and execute each project to the highest standards. **The result? Innovative, tailored, and budget-friendly solutions every time.**

Our R&D department is integral to the overall process, working with clients to perfect battery system design, mechanical and electrical engineering, BMS development, software management, system integration, and materials research. We use the advanced product quality planning approach to ensure optimal results. Our testing services work to the highest standards. We carry out periodic quality assurance purposes in our modern and well-equipped laboratory. Our range of battery systems tests encompasses the following:

- UN 38.3 testing to ensure safety of Li-ion and lithium metal batteries during transportation.
- IEC 62133 testing, an important standard for the global exportation of Li-ion batteries.
- Periodic tests for quality control.
- Mechanical tests, including IP, life performance, temperature, and drop and drum testing.
- Cell tests.

We constantly strive not to meet but exceed the expectations of our customers. To ensure we can provide products at scale, we regularly invest in innovative ways to maximise our production capabilities. This ability to supply large volumes ensures we can develop and run cost-effective production lines for our customers.

We can help you:

- Design complete battery systems focused on high performance.
- Optimise your battery packs through more efficient assembly processes.
- Create prototypes at each stage of the product.
- Secure high-quality components for use in the production phase.
- Perform advanced laboratory testing to ensure maximum performance.
- Design and deliver cost-effective production lines and assembly processes.
- Carry out chemistry-based evaluation to ensure the correct cell choice.



Model S-tube 36 V

S-tube was designed to combine low weight, slim form, and optimal performance.

Convenience has been prioritised with this e-bike battery, with a handle and slide-in design making replacement simple.

We've used aluminium within the design to ensure **low weight and maximum durability**, while standard 18650 cells are used for their narrow design – although different cell models can be used if required.

As always, safety has been strongly considered when designing the S-tube. We've implemented temperature control via BMS and a second, independent system to protect against overheating. CAN communication used by BMS can be adjusted to meet client needs. What's more, all materials are UL 94 V-0 flame-retardant rated.

S-tube Key Features:

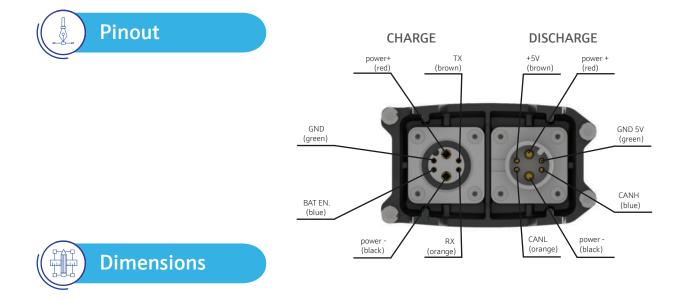


We understand that different clients will have different requirements, which is why we can offer full customisation of mechanics, electronics, and product configuration, such as cell model and IP rating.

We can also provide products specifically designed to conform with other markets and standards than those outside the EU.

Technical specifications

Parameter	Eco	Light	Standard	Ultra		
Nominal Voltage	36 V	36.5 V	36 V	36.5 V		
Cell configuration	10S3P	10S3P	10S4P	10S4P		
Nominal Capacity	9.6 Ah	10.5 Ah	12.8 Ah	14 Ah		
Nominal Energy	346 Wh	384 Wh	461 Wh	511 Wh		
Nom. Charge current	2 A					
Max. Charge current	6 A					
Nom. Continous Discharge current	4 A					
Max. Continous Discharge current	16 A					
Charge operating temperature	045°C					
Discharge operating temperature	-2045°C					
Storage	1 month: 060	D°C 3 months: 045°C 1 year: 020°		1 year: 020°C		
Weight	~2.4 kg	~2.5 kg	~2.8 kg	~2.9 kg		
Communication	CÁN					
Connector	A&C Z624C male+female – or optional different type (customizable)					
Additional Features	5V, 12V output - optional					
Housing	IP54, IPX4 – higher on request, Aluminium tube + plastic covers					
Compliance	IEC 60529:2014, CE, UN 38.3, EN 15194 - other certification possible					





Model B-tube 48 V

B-tube

Developed by our team, the **B-tube** delivers up to 949 Wh, making it a standout performer in the field of larger batteries. We have used 21700 cells with a capacity of up to 5 Ah, and to ensure the best possible performance under heavy load, we've chosen a voltage of 48 V for this battery.

Aluminium housing is used to minimise temperature, as well as for durability. Despite their high energy output, **B-tube batteries have retained their aesthetic appearance, offering a rounded shape made possible by intelligent design**.

The design of the B-tube has been optimised to enable high-volume production, with flex PCB used to quicken the assembly process. This also boosts the overall endurance of the battery plus increases the battery's longevity.



Many B-tube features, such as the number of DC outputs and the connector types used, can be customised to ensure all customers get the right solution.

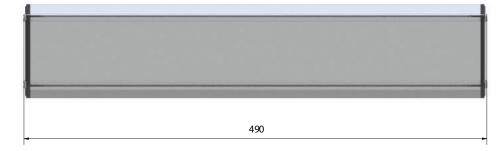
We can provide certification for higher IP ratings and conform to the requirements of most specific markets and standards.

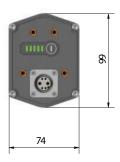
Technical specifications

Parameter	Eco	Light	Standard	Ultra		
Nominal Voltage	46.8 V	47.5 V	46.8 V	47.5 V		
Cell configuration	13S3P	13S3P	13S4P	13S4P		
Nominal Capacity	12 Ah	15 Ah	16 Ah	20 Ah		
Nominal Energy	562 Wh	712 Wh	749 Wh	949 Wh		
Nom. Charge current	4 A					
Max. Charge current	8 A					
Nom. Continous Discharge current	10 A					
Max. Continous Discharge current	20 A					
Charge operating temperature	045°C					
Discharge operating temperature	-2045°C					
Storage	1 month: 060°C 3 months: 045°C 1 year: 020°C					
Weight	~4.3 kg	~4.4 kg	~5.1 kg	~5.2 kg		
Communication	CAN					
Connector	Customizable					
Additional Features	5V, 12V output – optional, SoC LED display - optional					
Housing	Option for IP67, IPX4, Aluminium tube + plastic covers					
Compliance	EN 15194, IEC 60529:2014, CE, UN 38.3, UL 2271 – other certification possible					

Dimensions







Advanced Battery Systems Solutions

Innovating to realise value

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