

PURE

Powerful Battery With Long Lifetime



E-MERSIV
Submerged battery packs



Immersion Cooling Technology

PURE, the Long Lifetime Powerful Battery

16 min

Fast charging¹

6C

High continuous power²

2,000

Cycles³

100%

Thermally safe⁴

1- From a state of charge of 20% to 80% at 35°C inlet cooling temperature

2- 6C continuous discharge power and 4C continuous charge power

3- 100% DOD @ 1C & 25°C

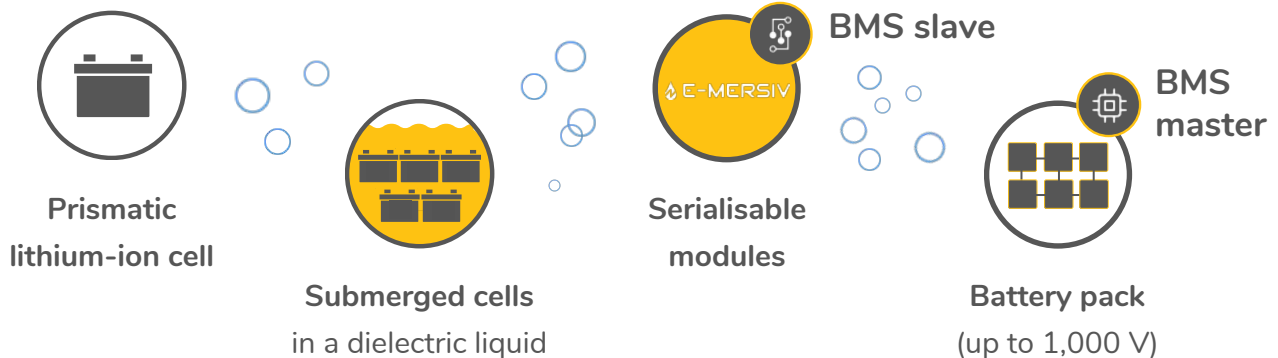
4- No thermal runaway propagation in case of 2x cell fire and no leaks in the cooling system

These information and photos are not contractual.

E-MERSIV can adapt this battery to your needs. More information on: www.e-mersiv.com

From a single cell to a **complete battery pack**, **E-MERSIV** masters all the steps of the chain to develop and offer an **innovative battery cooling system**.

PURE technology



Focus on the cooling loop

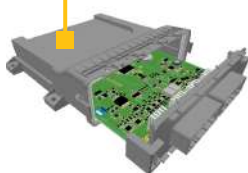
Example of a cooling loop for electric vehicle

With **PURE**, cooling loop can be adapted to any shape and any type of vehicles.

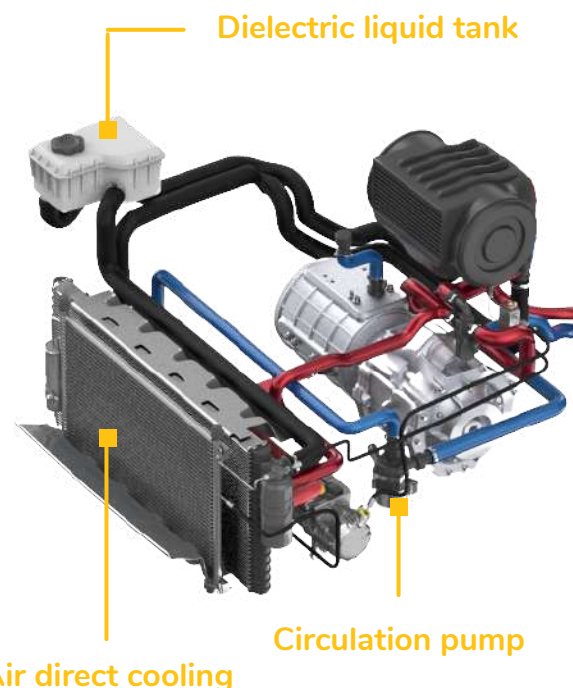
e-BTMS

Battery Thermal Management System

Advanced algorithms to reach the **best safety-performance ratio**.



- Data logging
- Cooling strategies
- Strategy to avoid lithium plating



Option: integrate a secondary dual loop with a pump and a plate heat exchanger.

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Module Specifications

Value

Available Energy @1C & 25°C	7.7 kWh		
Nominal voltage	133 V (NMC 36s)	66 V (NMC 18s)	44 V (NMC 12s)
Nominal capacity	58 Ah	116 Ah	174 Ah
Continuous charging current	232 A	464 A	696 A
Continuous power in Discharge	46 kW		
Continuous power in Charge	31 kW		
Gravimetric energy density (wet)	154 Wh/kg		
Volumetric energy density	233 Wh/L		
Targeted cooling inlet temperature	35°C		
The module is serialisable up to	1,000 V		
Weight (wet)	53 kg		
Size H×W×D	145×670×340 mm		
Lifecycles (100% DOD @ 1C & 25°C)	2,000 cycles		



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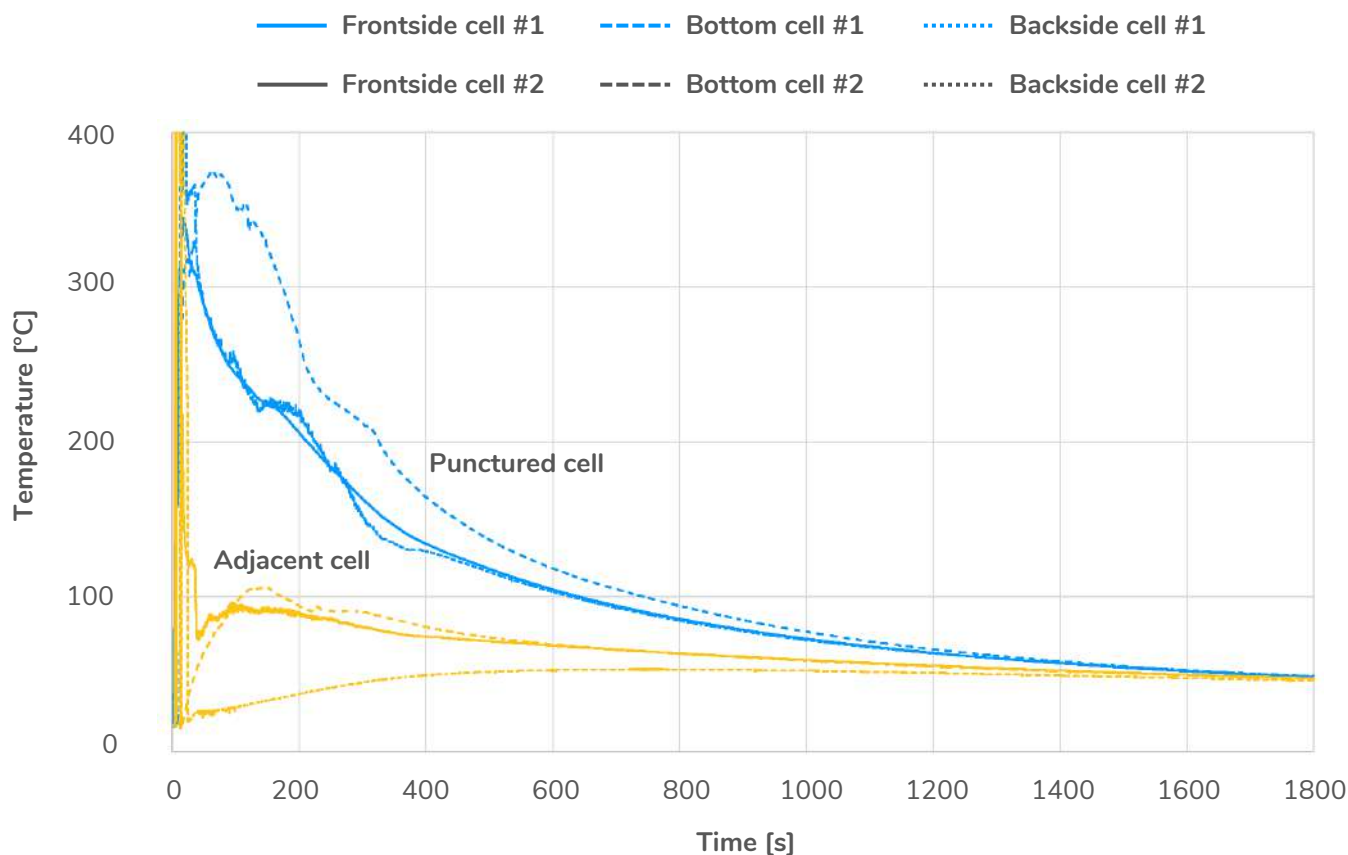
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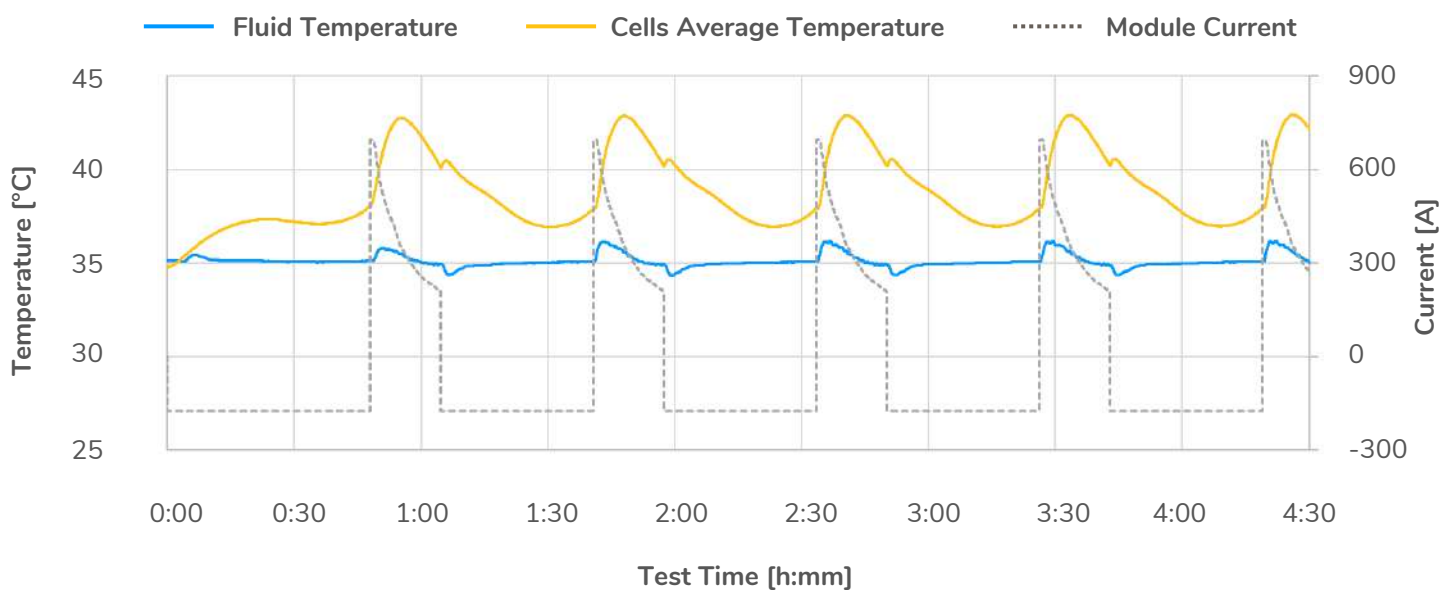
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No thermal runaway propagation¹



Fast charge repeatability

5× cycles: 1C discharge; up to 4C fast charge 20%-80% SOC²



1- NPT abuse tests, 100% SOC @20°C ambient temperature, NMC 12s version

2- NMC 12s version

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Battery Pack Specifications (10 modules) Value

Available Energy @1C & 25°C	77 kWh
Nominal voltage (18s version)	666 V
Continuous power in discharge	460 kW
Continuous power in charge	310 kW
Regenerative braking power	460 kW
Fast charge time (20% to 80% SOC)	16 minutes
Estimated total battery weight *	580 kg

*including powerbox and wet cooling loop



SEVERE TEMPERATURE

Provide the best temperature homogeneity between the cells to improve the performance and capacity of the battery.



INCREASED SAFETY

No thermal runaway propagation.
Tested with simultaneous thermal runaway of two adjacent cells.



LONGER LIFETIME

Improve cell lifetime by **up to 30%** for a sustainable battery that meets the needs of the market and new ecological challenges.



ULTRA-FAST CHARGING

Charge **from 20% to 80%** in only **16 minutes** with increased performance up to **4C** continuous power and **6C** peak power.

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Thanks to a **20 years experience** in Li-ion Batteries, Battery Management System and Thermal Management, **E-MERSIV** can meet **all your needs** and support **all your projects**:

Simulation

Design

Tests

Production

Certifications

Whatever is your market, **E-MERSIV** helps you to **meet standards** and can accompany your efforts to obtain the **right approvals** and **certifications**.



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E-MERSIV

6 Avenue de La Grande Lande, 33170 GRADIGNAN, France

+33 5 56 13 04 68 - contact@e-mersiv.com