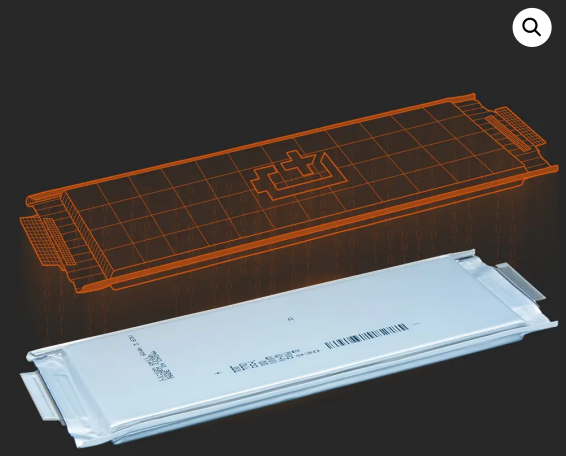

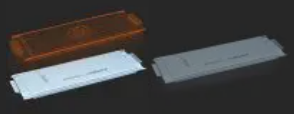

Batemo Cell Library

LG CHEM E63B

The Batemo Cell of the lithium-ion battery cell LG Chem E63B is a high-precision, physical battery model with global validity. As a digital twin it seamlessly integrates into your research, development and battery analytics by basing your decisions on simulations.

GET DATA GET REPORT GET MODEL

Get a battery model for precise simulations, extensive measurement data and a detailed cell report of the LG Chem E63B.

Cell Origin	extracted from Hyundai KONA (2018)
Cell Format	pouch
Dimensions	310 x 114 x 15 mm
Weight	887.8 g
Capacity [definition]	nominal 60.0 Ah C/10 61.1 Ah
Current [definition]	continuous 71 A peak 182 A
Energy [definition]	C/10 225.2 Wh
Power [definition]	continuous 248 W peak 640 W
Energy Density [definition]	gravimetric 254 Wh/kg volumetric 598 Wh/l
Power Density [definition]	gravimetric 721 W/kg volumetric 1.70 kW/l

BATEMO CELL

The Batemo Cell of the lithium-ion battery cell LG Chem E63B is a high-precision, physical cell model with global validity. As a digital twin it seamlessly integrates into your research, development and battery analytics by basing your decisions on simulations. See the details to learn more about the features and capabilities of the Batemo Cell.

Batemo Cell Version	1.307
Release Date	February 01, 2022

Batemo demonstrates the accuracy and validity of the Batemo cell by comparing battery simulation and measurement data in the range given below. Validation is extensive, experimental characterization covers the total operational area of the cell: At low and high temperatures, up to the maximal current and in the whole state of charge range.

State of Charge Range	0 … 100%
Current Range [definition]	-210 A discharge … 90 A charge (-3.0C … 1.0C)
Voltage Range [definition]	2.7 … 4.2 V
Temperature Range [definition]	-20 … 60 °C

Moreover, the Batemo Cell validation is fully transparent. The Batemo Cell Data contains the raw measurement and simulation data. For all experiments the voltage, temperature, power and energy accuracies are calculated. This allows straight-forward evaluation and analysis of the Batemo Cell validity. The graphs show a selection of characteristic data of the cell LG Chem E63B to evaluate the cell performance.

Discharge Characteristics

Pulse Characteristics

- **Discharge Characteristics**: The electrical and thermal discharge behavior is strongly nonlinear.
- **Pulse Characteristics**: The shape of different current pulses changes strongly.
- **Energy Characteristics**: The graph visualizes how much energy the cell can deliver when operated at different powers.
- **Power Characteristics**: The more power the cell supplies, the shorter it can deliver the power.
- **Thermal Characteristics**: The thermal losses heat up the cell the more, the higher the depleted power is.

[show experiment definitions]

Energy Characteristics
How much energy can it deliver?

Power Characteristics
How long can it deliver the power?

Thermal Characteristics
How hot does it get?

The mean accuracies give an overview of the Batemo Cell accuracy. Therefore, the root mean square of the difference between the measurement and simulation result is derived for the voltage, the temperature, the energy and the power. Relative numbers relate the accuracy to the respective absolute value.

Mean Voltage Accuracy	0.031 V	1.0 %
Mean Temperature Accuracy	0.5 K	0.7 %
Mean Power Accuracy	2.28 W	0.9 %
Mean Energy Accuracy	2.920 Wh	2.6 %

The Batemo Cell precisely describes all aspects of the cell. It is the perfect tool for battery system development.

BATEMO CELL DATA

Batemo offers an extensive, experimental characterization of the lithium-ion battery cell LG Chem E63B. The data contains measurement results in the total operational area of the cell. The descriptions and graphs below explain and show the available measurements. The Batemo Cell Viewer allows easy and fast analysis, evaluation and comparison of the data. See the details to learn more.

Constant Currents

The cell is discharged from 100% SOC or charged from 0% SOC with different constant currents at different ambient temperatures. The thermal boundary condition is free convection. The measurement stops when reaching either the voltage of 2.7V or 4.2V or the surface temperature of 60°C. The graph shows for which ambient temperatures and charging and discharging constant currents measurements are available.

Pulse Currents

The cell is discharged from 100% SOC or charged from 0% SOC with current pulses followed by no-load phases at different ambient temperatures. The thermal boundary condition is free convection. The measurement stops when reaching either the voltage of 2.7V or 4.2V or the surface temperature of 60°C. The graph shows for which ambient temperatures and pulse currents measurements are available.

Power Profiles

The cell delivers a typical power profile from 100% SOC at different ambient temperatures. The thermal boundary condition is free convection. The measurement stops when reaching either the voltage of 2.7V or the surface temperature of 60°C. The table summarizes for which ambient temperatures the profile is available.

Ambient Temperature	Available
-20 °C	
0 °C	
25 °C	
40 °C	

BATEMO CELL REPORT

Batemo offers a detailed report of the lithium-ion battery cell LG Chem E63B. The report covers all important aspects about the cell. This information greatly helps you to further evaluate and compare the cell. It is a profound basis for your decisions concerning your battery system design. See the details to learn more.

Performance Overview
Cell Exterior

Cell Interior

Safety Features

Electrode Microstructure and Material