



AVL Battery Testing Solutions

Tested and trusted.

Testing Process

Battery development and testing is essential for the further development of electric vehicles and energy storage systems. For this reason, we take a holistic approach that covers every phase of the testing process. From careful planning to precise execution, followed by thorough analysis, our comprehensive methodology ensures the delivery of reliable and innovative battery solutions.



Planning

Engineers collaborate with test planners, leveraging our Lab Management Software Solution to design test requirements, allocate test slots, and prioritize tests based on project needs. AVL E-Library simplifies the test parameterization for the engineer with its plug-and-play approach, offering maximum convenience for automated test runs once the primary unit under test (UUT) parameters are set.

UUT Preparation

Unit under test (UUT) preparation includes the assembling of all connections and interfaces as well as the assignment to the right testbed. Once the tests are scheduled, the rigging engineer receives orders through a connected work tablet. They prepare the UUTs and dispatch them to the appropriate testbeds.

Test Execution

Our automation system AVL PUMA 2™ Battery facilitates this process, ensuring a smooth and error-free setup. Advanced and integrated monitoring tools provide a real-time overview of each testbed's status, facilitating proactive maintenance and minimizing downtime.

Analysis

Engineers can analyze the data with AVL CONCERTO™, extract valuable insights, and make development decisions. Automated plots and reports generated during tests expedite the analysis process, providing continuous information for further refinement and innovation.

Central data management with Data.CONNECT™ plays a vital role in ensuring the availability, integrity, and efficient utilization of data throughout the battery testing and development process.

Our Holistic Offering

From individual test components to integrated system solutions and complete battery test facilities, you have come to the right place for battery test expertise. Our software and hardware portfolio is complemented by holistic support options and application services. A selection of our portfolio highlights is listed below.

Individual Test Products



AVL CELL TESTER™ Family



Data Acquisition with AVL FEM 4™



AVL PUMA 2™ Battery

Complete Test Systems



AVL Battery Cell TS™ ACORA

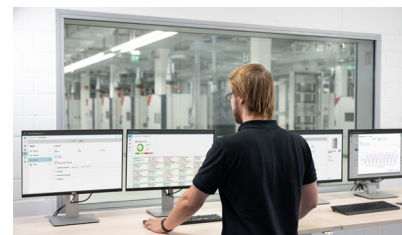


AVL Battery Cell TS™

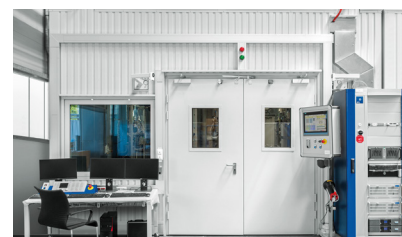


AVL Battery Module/Pack TS™

Turnkey Facility Solutions



Lab Management for Battery



Containerized Solutions



Complete Test Facilities

Our System Highlights



AVL Battery Cell TS™



AVL Battery Cell TS™ ACORA



AVL Battery Module/Pack TS™

EXPLORING THE LIMITS WITH MAXIMUM SAFETY

Installing and working with a single test channel is not a big challenge, but configuring a testbed that fully automatically controls performance components with high utilization rates is much more difficult. This is why we developed the AVL Battery Cell TS™. Whether cell cyclers for 0.5A to 2,400A with integrated impedance spectrometer, temperature, voltage, force, displacement measurement or an integrated safety system, we deliver a test system tailored to your needs.

A REVOLUTION IN BATTERY CELL TESTING

ACORA – Active Cooling Rack – provides a more efficient way of temperature conditioning cells in a test environment compared to conventional climate chambers. With ACORA, cells are placed between water-cooled plates to achieve the required temperature conditions faster and more accurately. By integrating a robotic solution, ACORA can be operated fully automatically. And improved design leads to more efficient facility building usage as well as higher equipment density, which helps to better meet the large demand on battery cell test capabilities in test labs.

TRIED AND TRUE BATTERY TEST SYSTEM

Our AVL Battery Module/Pack TS™ is an advanced test solution that accurately measures essential battery parameters under a variety of environmental conditions. Versatile multi-function interfaces ensure seamless integration with key test tools. Moreover, we offer a closed-loop hardware and software toolchain tailored to every aspect of battery development, providing a holistic view of test challenges. In addition, the integration and interaction between the electrification systems departments enables comprehensive support.

Why Partner With Us?

Modern electrified propulsion systems place enormous demands on batteries. These electrochemical energy storage and conversion devices must meet market requirements such as high sustained power and energy performance, as well as dynamic charging and discharging. To support automotive battery development tasks, we have created the AVL Battery Test System portfolio that covers all aspects of the battery testing process. Our systems are 'plug-and-play' solutions that are free standing – or containerized testbeds that can be delivered as a ready-to-go turnkey solution without needing any further adaptations.

AVL battery test systems are designed to measure all important battery data at differing temperature and humidity. The solutions are equipped with multifunctional interfaces connecting to additional tools necessary for battery testing. AVL has a seamless toolchain in hardware and software for every possible need during battery development. The combination of development services for the customer and the independent development of test equipment provides AVL with a holistic view of the challenges faced in the domain of battery testing.

- **Full Solution Portfolio**
Comprehensive solutions from cell, module and pack testing to full vehicle integration
- **Enhanced Performance and Safety**
Maximizing battery system performance while ensuring safety and reliability, through precise testing and innovative technologies
- **Customized Expertise and Support**
Tailored solutions, cost efficiency, and expert guidance to address e-mobility challenges and optimize battery testing

FACT BOX

- Compliance with global legal norms and standards
- Global presence and decades of experience in automotive development and testing
- Development and production of our battery test systems in Europe

Contact us today and start leading the charge in battery testing! Collaborate with us for your success, innovation, and future in battery technology.



FIND OUT MORE

AVL List GmbH, Hans-List-Platz 1, 8020 Graz, Austria

Phone +43 316 787-0

Fax +43 316 787-400

E-mail testsystems@avl.com

www.avl.com/battery-testing