

HORIBA MIRA

High-performance HV battery testing for a major OEM

Case study overview

A major global OEM approached HORIBA MIRA to support a fast-paced battery development and validation programme. The client needed to test large, high-voltage battery systems under aggressive timelines and sought a partner with the engineering expertise and infrastructure to deliver a tailored, high-performance solution.

HORIBA MIRA was selected for its proven capability in battery systems integration and testing. The objective was to design and deliver a bespoke facility that could validate next-generation electric vehicle battery systems to stringent durability, safety and performance requirements.

Engineering team deployed: Eight UK-based subject matter experts formed the core of a team that numbered up to eleven at times.



Battery management, virtual validation, de-risk vehicle trials



Passenger vehicles



UK



This collaborative agreement between HORIBA MIRA and the client has enabled us to bring state of the art battery testing facilities to market in an extremely accelerated timeframe. What's been achieved in just 9 months is remarkable and showcases HORIBA MIRA's ability to not only deliver superior test services, but also significant infrastructure projects. Working together in partnership with the client has allowed us to concentrate on a 'customer first' approach and build something that's truly valuable to both businesses.

Robert Ripley, Commercial Manager - Business Development
HORIBA MIRA



Approach

HORIBA MIRA worked in close collaboration with the OEM's commercial and engineering teams to define the facility specification and delivery approach. Drawing on over 15 years of battery test and rig design experience, the team developed a modular facility concept incorporating:

- ✓ High-voltage battery cycling
- ✓ Environmental temperature control
- ✓ Large-scale vibration testing

To meet the compressed delivery schedule, HORIBA MIRA applied an agile programme structure with weekly engineering sprints and real-time issue resolution. A multidisciplinary team, including mechanical, software and systems engineers, ensured all elements were delivered in parallel for maximum efficiency.

Technologies from leading global suppliers (IMV and Bitrode) were integrated using HORIBA MIRA's proprietary software platform to enable coordinated, autonomous testing.

Successes and benefits

The facility was delivered within a nine-month timeframe, from contract signature to first test, enabling the OEM to accelerate development and reduce reliance on overseas testing. Key benefits for the client included:

- ✓ **Faster time-to-market:** Development timelines for EV models were reduced
- ✓ **Cost and carbon savings:** Testing was localised, cutting shipping costs and CO₂ emissions
- ✓ **Long-term value:** The facility remains in use for ongoing programmes
- ✓ **Improved decision-making:** Real-time monitoring and diagnostics supported rapid engineering reviews



Deliverables

HORIBA MIRA delivered a turnkey battery testing facility featuring:

- ✓ The UK's largest commercially available vibration system
- ✓ High-voltage battery cyclers and power management tools
- ✓ Thermal conditioning chambers for temperature cycling
- ✓ A proprietary automation layer for remote monitoring and test scheduling
- ✓ Integrated diagnostics for real-time fault detection and analysis

The facility enables 24/7 unattended operation and provides the OEM with a scalable, future-proof test environment.