ENERGY INTELLIGENCE FOR EVs

V-Hola ***e²Lab***: Driving Vehicle Development Faster

A breakthrough platform delivering diagnostic and predictive energy optimization for electric vehicles - powered by a truly non-intrusive approach. V-Hola e²Lab redefines how R&D teams measure, analyze, and enhance EV energy efficiency. The result: extended driving range, lower costs, and faster time-to-market - all driven by unmatched energy intelligence

V-HOLA

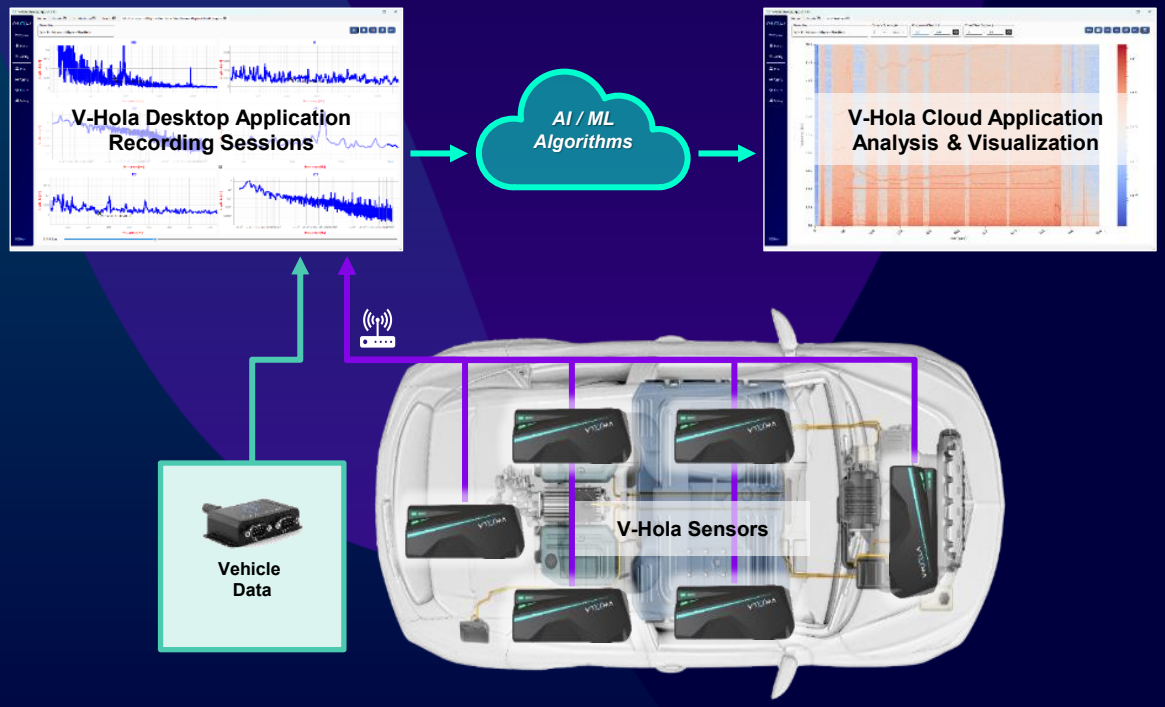
V-Hola's e²Labs - Driving the Future with Energy Intelligence & Predictive Insight.

Overview

V-Hola e²Lab is a breakthrough **diagnostic solution** engineered to transform how R&D teams measure and optimize vehicle energy efficiency. Purpose-built for next-generation mobility, e²Lab delivers **unmatched accuracy** and insight by seamlessly combining proprietary EMF sensors, advanced AI/ML signal analysis, and integrated vehicle data.

Unlike traditional intrusive methods, e²Lab provides a holistic 360° view of energy consumption across every onboard system - without hardware modifications or complex wiring.

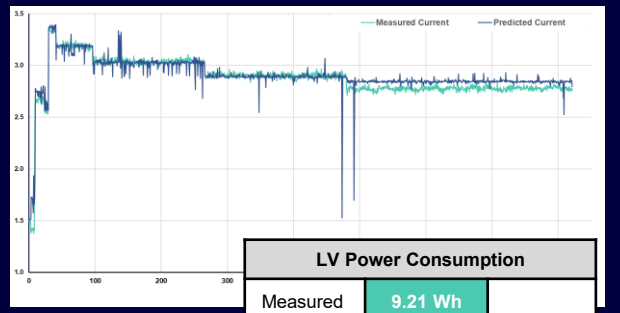
Solution Architecture



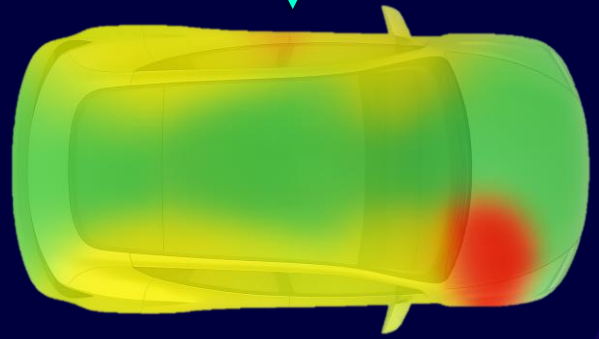
Proven Results (Based on Customer Trials)

In recent trials with a leading European OEM, V-Hola ***e²Lab*** demonstrated its ability to:

- ✓ **Detect** every active power consumer - from milliamp-level electronics to high-power subsystems, across both low- and high-voltage domains.
- ✓ **Uncover** energy consumption patterns - revealing when, where, and how components draw power under real operating conditions, identifying anomalies and inefficiencies.
- ✓ **Deliver** predictive accuracy >90% in current (Amps) and energy (Wh) usage - even with minimal model training, enabling faster insights and earlier optimization.
- ✓ **Locate** potential energy leakage, providing valuable insights into potential error states in LV power systems.



LV Power Consumption		
Measured	9.21 Wh	99.4%
Predicted	9.26 Wh	



Potential Benefits

- **Extended Range** – Maximize efficiency to drive farther.
- **Lower Battery Cost & Weight** – Smaller, lighter, more affordable packs.
- **Faster Development** – Accelerate testing and validation.
- **Smarter Range Prediction** – Greater accuracy in all conditions.
- **Sustainability** – Cut CO_2 with improved efficiency.

Key Use Cases

- Diagnose power anomalies and usage regressions
- Assess energy behavior of sub-systems and ECUs
- Verify compliance with energy budgets and consumption targets
- Optimize calibration parameters with energy feedback
- Streamline power test cycles and cut measurement costs

Designed for Engineers

- ***e²Lab*** supports development-stage validation in:
- Lab rigs, benches, and vehicle prototypes
- Controlled conditions (e.g. environmental chambers) and road testing
- Fast iteration, low setup overhead, and full signal traceability