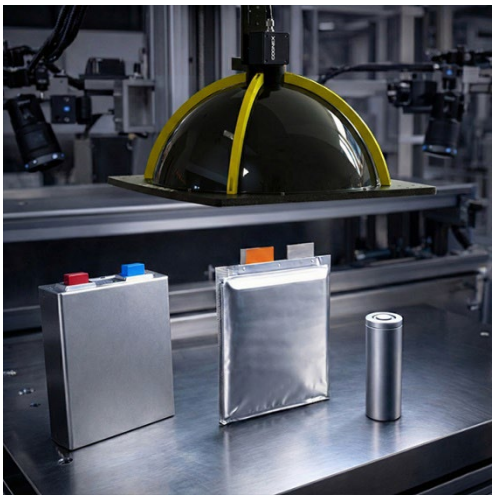
State-of-the-Art Inline Battery Cell Inspection



The AIT Battery Inspector is a high-performance inline inspection system designed for the safe and reliable quality control of cylindrical cells, prismatic cells, and pouch cells in high-speed battery production environments. The system detects even the smallest surface defects and damage in real time, ensuring maximum quality assurance at the highest production rates.

In battery cell manufacturing, uncompromising quality is essential. Even minor surface imperfections can lead to internal short circuits, posing significant safety and fire risks. The AIT Battery Inspector identifies critical defects at an early stage, making a substantial contribution to process reliability, product safety, and liability risk reduction.

Powered by advanced trevista® technology and the Shape-from-Shading method, the system performs highly precise topographical surface analysis without interference from reflections and independently of production-related variations. This enables the reliable detection of challenging defect types such as dents, scratches, microcracks, bubbles, and pinholes—even on coated battery cell surfaces.

The inspection process is fully inline, non-contact, and highly stable. All inspection results are comprehensively documented and transmitted directly to the production line via a standardized PLC interface. System operation and data analysis are managed through the powerful **AIT EasyPlus** software platform, providing intuitive configuration, transparent visualization, and secure logging of all inspection results.

The modular architecture of the AIT Battery Inspector allows flexible expansion to meet future manufacturing requirements, including:

- **Deep-learning modules** for intelligent defect classification
- **Optical measurement** of battery cells (geometry, diameter, height)
- Advanced **statistical analysis** and **traceability** solutions

AIT Battery Inspector: Ensuring Maximum Safety, Highest Inspection Accuracy, and Consistent Quality in Advanced Battery Cell Production.

Technical Highlights & Benefits

- 100% inline inspection of cylindrical, prismatic, and pouch cells
- Detection of smalles surface defects and safety-critical damage
- Highest inspection speeds combined with exceptional process reliability
- Precise evaluation of topographical defects and superior image quality through trevista® technology
- Reliable inspection of coated battery cell surfaces
- PLC connectivity and complete inspection results documentation
- Upgradeable with AI-based defect classification, optical metrology, and traceability concepts

AIT Goehner GmbH
Wilhelmsplatz 11
D-70182 Stuttgart

Tel. +49.711.23853.0
info@AIT.de
www.AIT.de