

Basler runner GigE Cameras Inspect Titanium Zinc Plates Used for Building Construction

Customer

Wise Technologies is a research and development company from Slovenia, performing system integration and software development in industry and research organizations. They started their business in 2003, and they have been involved in some of the most demanding projects in Europe.



Wise SCAN System for Defect Detection in Continuous Sheets

Application

Wise SCAN is a system used to inspect TiZn (Titanium Zinc) metal sheets produced by a rolling process. TiZn sheets are used for roofs and wall panels in building construction. Their flawless appearance and protective functionality are important features of the end product. The metal sheets have a reflective surface, and this makes selecting the correct imaging technology for an inspection system crucial. Another challenge is the application's location in a rolling plant, where high temperatures (~ 60° C), dust, lubricants, aerosols, vibration, electromagnetic interference, and light interference are all present.

Solution and Benefits

After a careful analysis of all requirements for the application, Wise Technologies found that the optimal solution was a line scan imaging approach. The solution consists of a table on the production line with an electrical cabinet and two imaging modules that cover the complete width of the metal sheets. Each module contains two Basler runner GigE line scan cameras, and this means that four cameras acquire images of the work pieces at the required resolution from both the top and bottom sides. Each imaging module also has specially designed illumination sources positioned and configured in such a way that errors on the metal sheets can be distinguished with enough contrast to allow reliable defect recognition. One of the modules contains an encoder that triggers the cameras based on the speed of the production line and the length of the metal sheet. The cameras typically deliver almost 19,000 lines per second at full resolution. The housing of the Wise SCAN imaging module provides the protection and cooling required in tough industrial environments.

The system offers two modes of operation: quality control before winding of the sheet metal or quality control before cutting the plates. The Wise SCAN application can communicate directly with the primary production line. In the cutting mode, for instance, the materials handling system receives a "pass" or "fail" signal depending on the quality of the individual plates.



Screenshot of the Measurement Software

Wise Technologies has incorporated the most powerful hardware currently available including a multi-core CPU, high resolution Basler GigE runner cameras, and specially selected optics.

System characteristics:

- Control of conveyor widths of up to 1100 mm
- Control of lines with speeds up to 100 m/min
- Detection of errors with a size in the x or y axis ≥ 1 mm, user-defined
- Detection of the following defect types: open scales, closed scales, mechanical damage, burnt oil, stabs, and edge defects



The upgrade of a production line with the Wise SCAN module significantly reduces the costs of production, increases the control reliability, eliminates the need for six workers in two shifts, and last but not least, helps to ensure that the final product will become well-known for its high quality.

Robert Modic, product manager for the Wise SCAN module states: "We use Basler runner GigE cameras because of their convenient GigE Vision interface, Basler's proven professional support from Germany, and their tight integration into the National Instruments LabView software. Also, National Instruments offers a complete Basler product range on their website, which made the choice especially easy."

Technologies Used

- 4 Basler runner GigE cameras (ruL2048-19gm)
- National Instruments LabView
- Customized imaging module

More Information

For more information on the application, please contact Robert Modic phone: +386 31 342867, email: robert.modic@wise-t.com or visit the Wise Technologies website: <http://www.wise-t.com/WT/>.

Basler AG

Germany, Headquarters

Tel. +49 4102 463 500

Fax +49 4102 463 599

bc.sales.europe@baslerweb.com

www.baslerweb.com

USA

Tel. +1 610 280 0171

Fax +1 610 280 7608

bc.sales.usa@baslerweb.com

Asia

Tel. +65 6425 0472

Fax +65 6425 0473

bc.sales.asia@baslerweb.com

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