



VITRONIC
machine vision people

Technical Information

INDUSTRY

VINSPEC^{solar}
Optical Quality Control
in Photovoltaics





**You need to assert yourself in a dynamic market.
We can support you in doing so.**

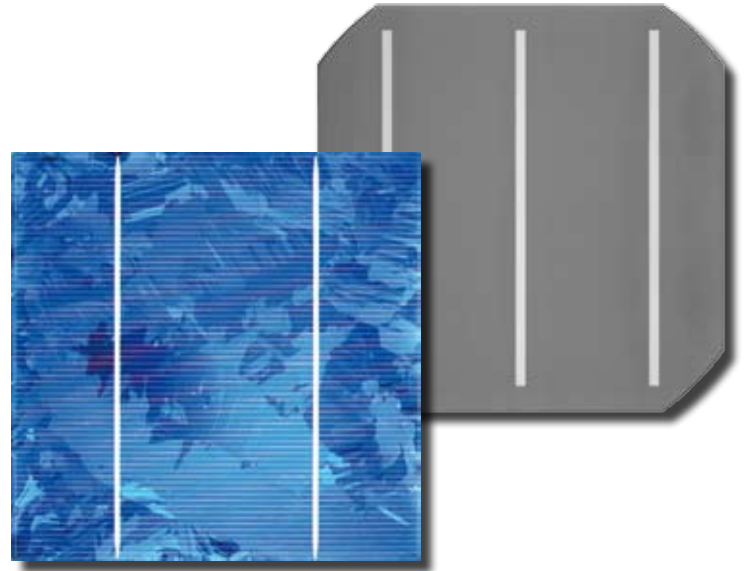
Optical quality control in the production of photovoltaics contributes decisively to accurately classified and top-quality products. Thanks to many years of experience and many successfully implemented systems, VITRONIC provides an adapted inspection solution for any relevant production step with the product series VINSPEC^{solar}. Quality-relevant optical criteria and imperfections on wafers, cells and thin film substrates, as well as on complete modules, are detected up to the μm -range and classified in accordance with customer requirements by means of high-resolution matrix and line-scan cameras.

What we can do for you:

With our strong engineering team, we have been developing machine vision solutions that are adapted to your requirements for 25 years. Continued advancements of our software and hardware components, as well as consistent investments in research and development, make VITRONIC a leader in industrial machine vision. A sizeable and skilled service team enables us to provide fast and competent support for all your needs – throughout the world.

VINSPEC^{solar}

Inspection of wafers and solar cells



**How efficiently do you capture the sun?
We show you how you can become even better!**

During the production of wafers and solar cells VINSPEC^{solar} carries out microcrack inspections, contour and surface inspections, texture and color inspections and even inspections of the front and rear.



**There is always room for
improvement.**

With positive classification, you increase value creation and actively improve your processes by utilizing the inline machine vision systems VINSPEC^{solar} – a broad database for the analysis of irregularities is provided. All measured values can be transmitted into databases, as well as to MES-systems via standardized interfaces.

VINSPEC^{solar}

Automatic visual inspection of thin film modules

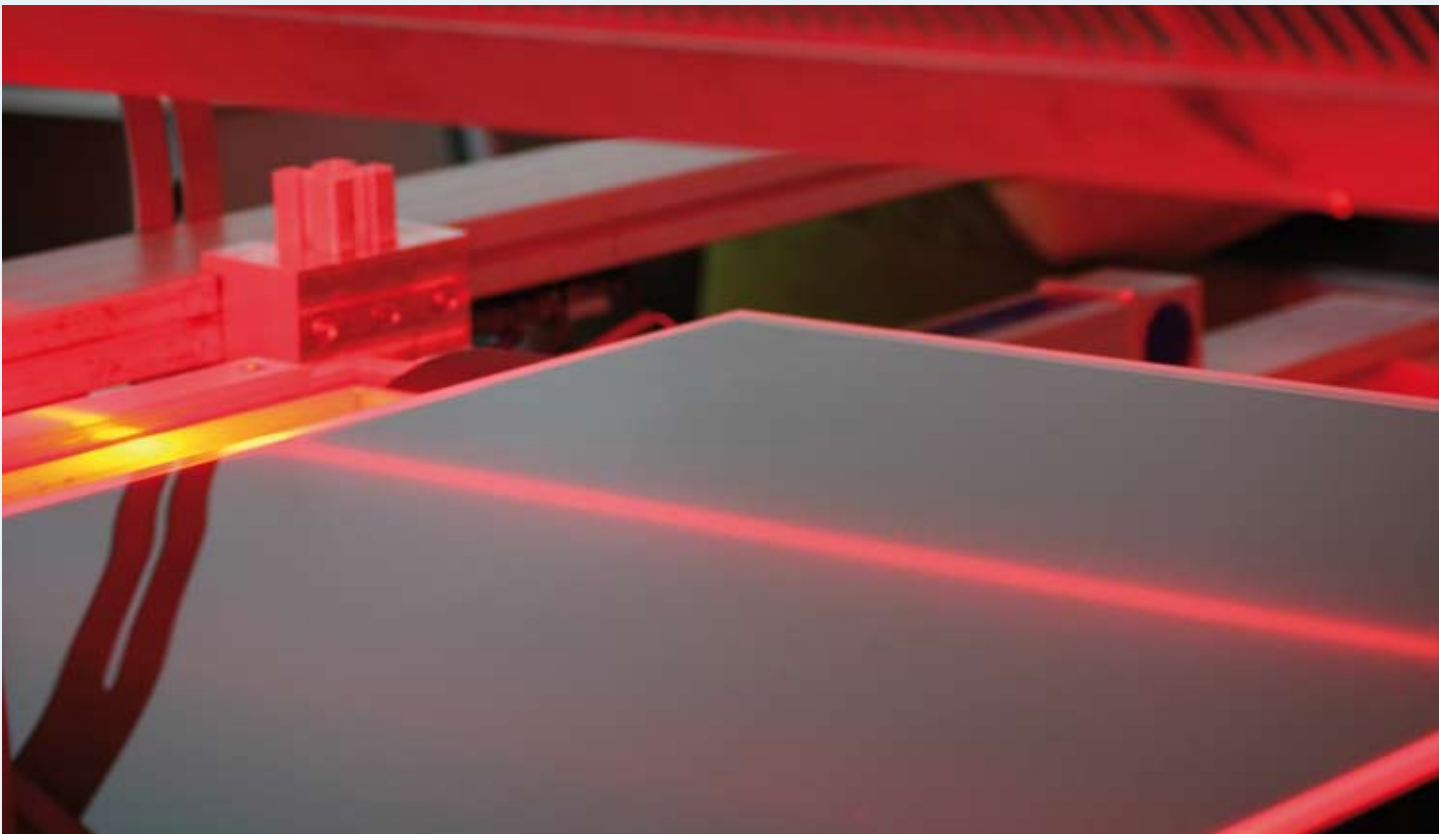


We bring light into darkness – and into your process.

VINSPEC^{solar} inspects thin film modules inline before and after relevant production steps. Various module types can be inspected regardless of the manufacturing method. The machine vision system VINSPEC^{solar} is used for glass and coating inspection, after the individual coating and structuring processes and for the final inspection and classification.

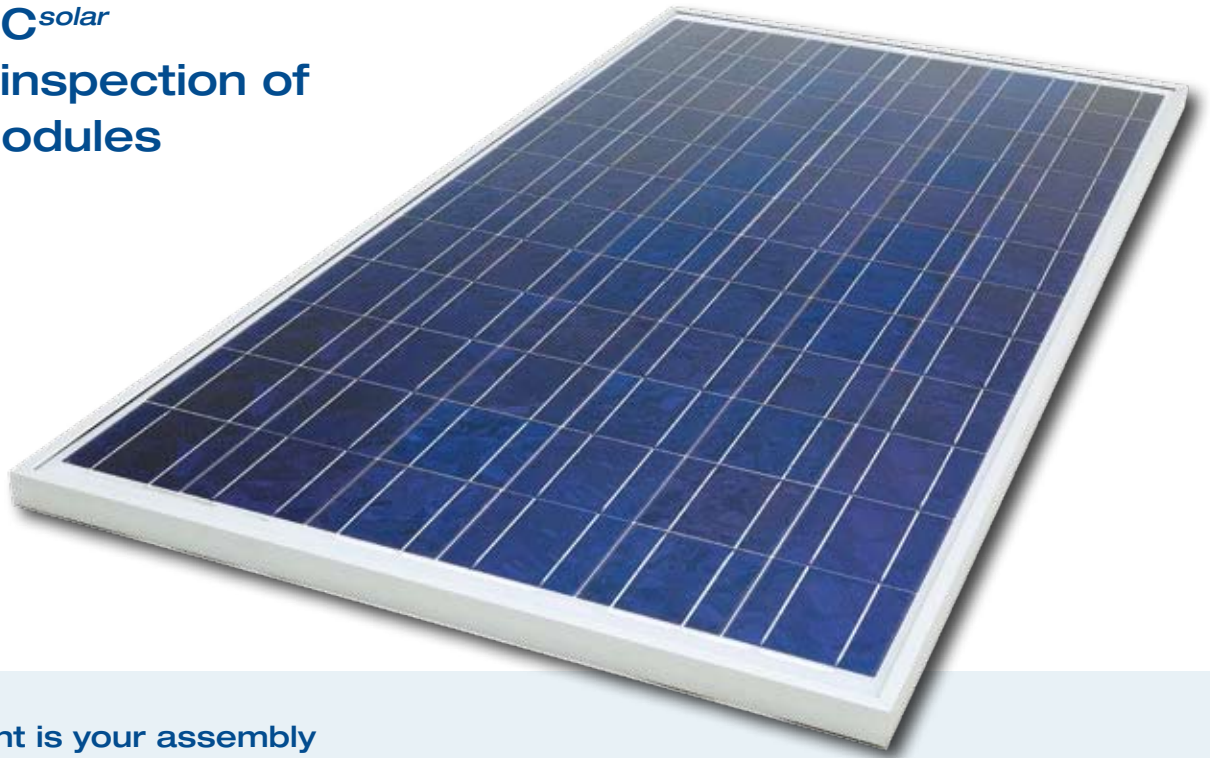
Special inspections such as the measurement of the scribe positioning make it possible to avoid consequential defects from the beginning. But it gets even better:

We make your modules light up. Inactive and defective regions on the module become visible with an electroluminescence inspection.



VINSPEC^{solar}

Quality inspection of solar modules



How efficient is your assembly process?

We can help you reduce your cycle time.

VINSPEC^{solar} performs all important inspection tasks in the production of solar modules such that you can count on 100% quality for your customers. The machine vision system ensures that only flawless solar cells are processed into modules. VINSPEC^{solar} goes even one step further and saves your most valuable commodity: time. Handling and quality inspection are merged into one production step.



What we can do for you:

- Quality inspection and position detection of the solar cells upstream of the stringer
- Inspection of the string
- Electroluminescence inspection from the string up to the complete solar module in the layup and in the flasher
- Position detection for correctly setting the J-box and for soldering the connector
- Quality control of the module frame
- Quality inspection of the complete module after the lamination

VITRONIC worldwide

We now are your direct contact on four continents.
Please contact us, we look forward to your projects.
All contact addresses can be found at www.vitronic.com



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