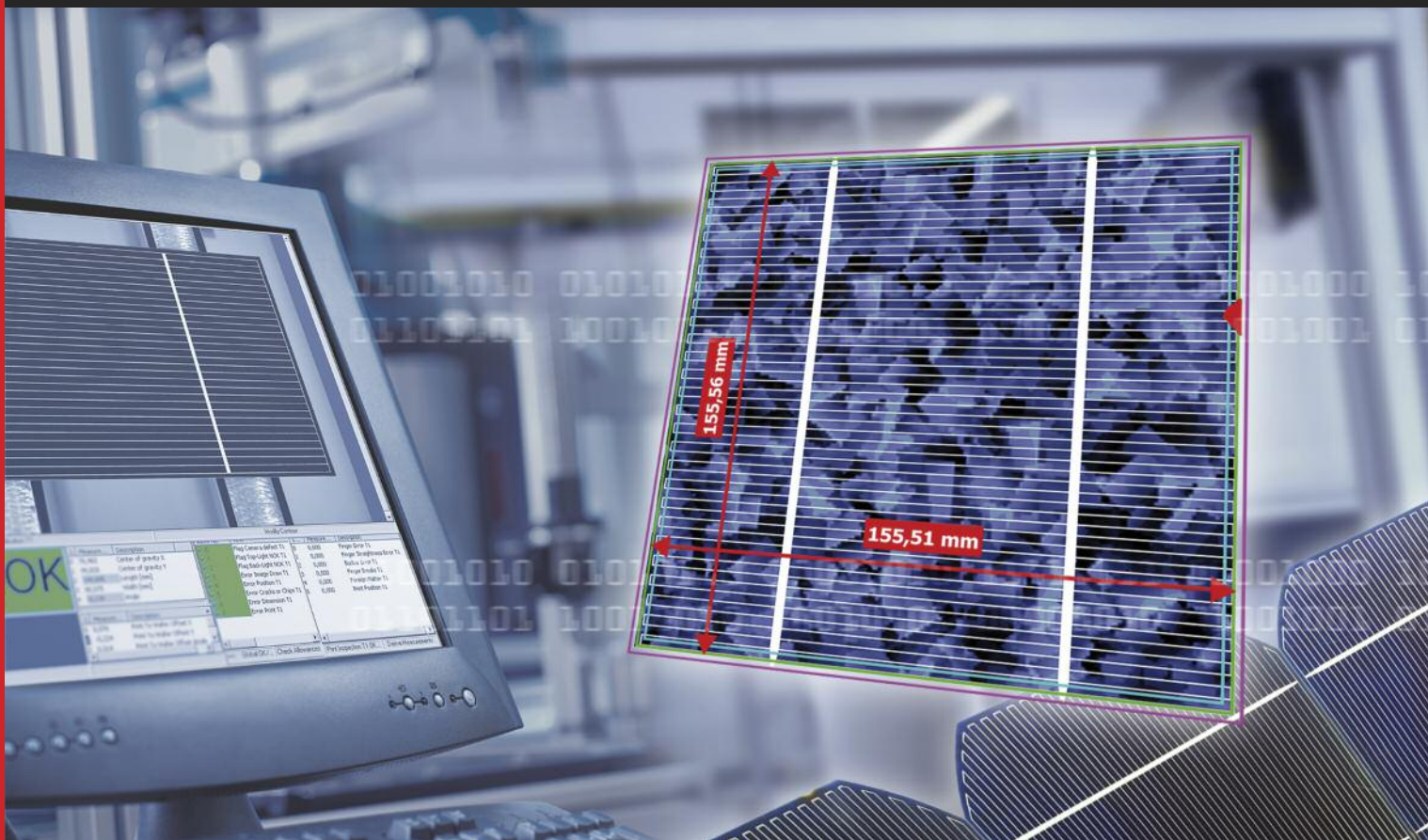




## NeuroCheck – Optical Quality Inspection for Photovoltaic Industry





## Machine Vision Software that delivers – All NeuroCheck advantages at a glance

Since 1993, NeuroCheck has stood as an innovative vision software product and turnkey inspection system builder in all application areas of image processing. Our NeuroCheck software platform has established itself in the market as the leading visual inspection system for industrial manufacturing.

For the increasing quality requirement of high-efficiency and low-cost photovoltaic production, NeuroCheck provides powerful solutions for inline quality and process control of solar wafers and solar cells. Our modular and cost-effective system assists your effort in optimizing the Photovoltaic production for better efficiency and throughput.

A competent team of experienced image processing experts assists our customer in realizing their needs. From feasibility study to planning, integration of systems, start of operation and service – the customer works with a single partner. Our comprehensive training programs provide a complete overview of the system operation, allowing your engineers to make adjustments and improvements in the future.

### Our services include:

**Software, consulting, integrated solutions for solar cell and solar module inspection.**

### Flexible

Our solutions offer a flexible approach to machine vision by offering all industrial image processing, control and data output under the one software package.

### Interactive

The graphical front end provides interactive, quick development with real-time feedback from the system through our unique manual and automatic modes of operation. The latest generation of NeuroCheck software provides touch screen technology support.

### Scalable

All our systems can accommodate multiple cameras with multi-inspection criteria. The system can easily be extended in the future to increase quality checks or to dynamically change the inspection levels.

### Integrated

Our systems can integrate seamlessly into any manufacturing environment, with built-in PLC protocols, I/O, Ethernet, Profibus and Devicenet as standard – automatic control can be set-up quickly and efficiently.

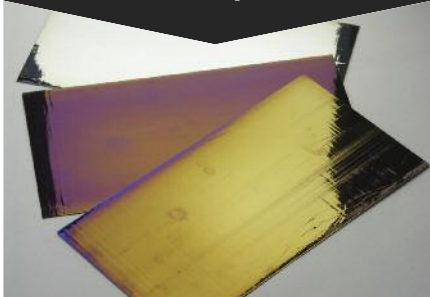
### Extendable

The integrated plug-in environment means the software can be extended for new or specific functionality required.

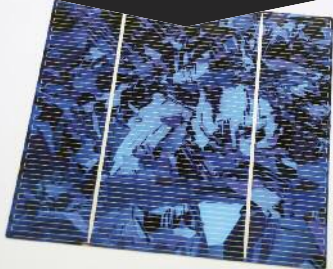


## NeuroCheck – Powerful solutions for your production process

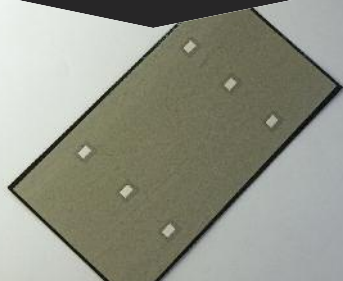
### Wafer inspection



### Frontprint inspection



### Backprint inspection



### String inspection



- Inspection of square and pseudo square wafer
- Mono- and multicrystalline wafer
- Wide range of camera modules up to 16 megapixels
- Classification of defects
- Geometry: Length, width, diagonal, rectangularity, chamfer (size and angle)
- Edge defects: Breakage, V-break, chipping
- Cracks and holes
- Contamination
- Position of wafer in x, y and angle

- Ultra homogenous illumination for optimum print contrast
- Wide range of camera modules up to 16 megapixels and linescan cameras up to 8 megapixels
- Classification of defects
- Inspection of print position
- Finger width and length
- Busbar width and length
- Print defects: Holes, interruptions, breakages, thinning
- Geometry, edge defects and crack check
- Contamination
- Color check

- Inspection of busbar, silver-dots and aluminium print
- Inspection of print position
- Busbar width and length
- Print defects: Holes, interruptions, breakages, thinning
- Geometry, edge defects and crack check
- Missing paste
- Contamination

- Inspection of square and pseudo square solar cells
- Wide range of camera modules up to 16 megapixels and linescan cameras up to 8 megapixels
- Dimension, position and crack check of solar cell strings
- Classification of defects
- Position of cells in x, y and angle
- Orientation of cells
- Position of strings
- Straightness of strings
- Presence and position of ribbons
- Cell defects



**NEURO  
CHECK**  
Industrial Vision Systems

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