

Your benefits from Dr. Schenk's unique inspection solutions

Dr. Schenk GmbH Industriemesstechnik
 Headquarters
 Bussardstr. 2
 82166 Graefelfing
 GERMANY

www.drschenk.com/contact.html

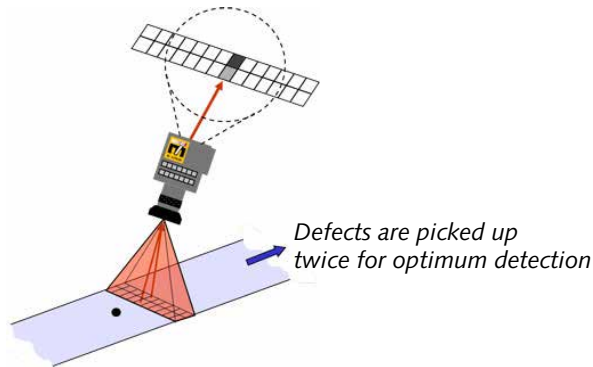
The Inspection Expert

1. Ultra-fast TDI cameras with CMOS technology

Dr. Schenk TDI cameras offer the unique combination of high resolution defect images with superior down and cross web resolution - particularly at high production speeds.

Your benefits from Dr. Schenk TDI cameras are:

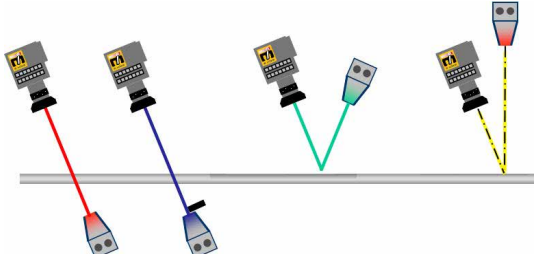
- Optimum defect detection
- Highly improved sensitivity (especially for low-contrast defect detection)
- Facilitation of high-speed production



2. MIDA - Multiple Image Defect Analysis

Dr. Schenk's MIDA allows combining different viewing angles in a single camera row. Using MIDA, you can move from the conventional

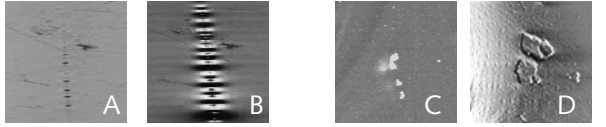
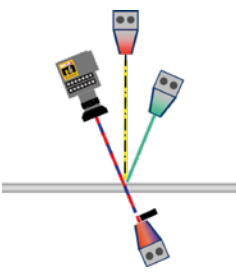
...one view per camera row solution



...to multiple views per camera row.

Your benefits from MIDA are:

- Savings in required line space
- Reduced investment
- Improved detection & classification



MIDA: see defects from all perspectives

Left: same gel defect in packaging base film using regular illumination (A) and Dr. Schenk's dedicated gels optics (B).

Right: same metal void in metallized packaging film using regular illumination (C) and Dr. Schenk's dedicated voids optics (D).

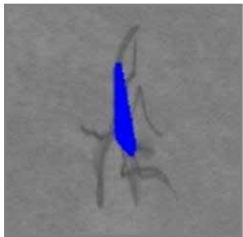
3. MIDA X: best defect detection and classification through visual intelligence

MIDA X is the next generation of defect detection and classification. It uses highly scalable software running on proprietary Dr. Schenk multi-core CPUs/GPUs to push the limits of defect analysis: neighboring defect areas are also examined to retrieve further information, for example a defect's true form.

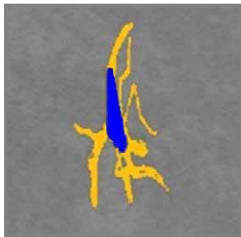
The MIDA X advanced image processing tools and full contextual defect analysis work just like the human eye and brain – only better. MIDA X is faster and offers consistent results 24/7.

Your benefits from MIDA X are:

- Differentiating defects from background noise in highly structured or irregular materials
- Preventing detection of pseudo-defects
- Clearly identifying defect areas and no-care areas
- Merging long, fragmented defects, such as fibers, into one



Defect detection **without** analysis of neighboring areas: defect is detected (blue area), but true shape remains unclear.



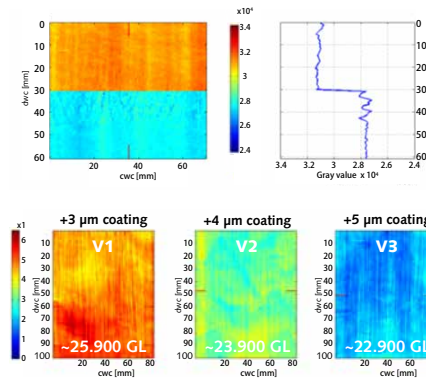
Defect detection **with** analysis of neighboring areas: defect is detected (blue area) and its true shape (yellow area) reliably identified.

4. EasyMeasure - look beyond local defect detection

Expand Dr. Schenk's EasyInspect for local defect detection with EasyMeasure for complete material monitoring to optimize your quality control as well as your production process. EasyMeasure continuously monitors optical material properties, including homogeneity of coating, opacity, breathability, HAZE, optical density and many more. Optical density for example can be represented as a numerical value for increased quality assurance.

Your benefits from EasyMeasure are:

- Monitoring of optical material properties for the complete width of the material
- No additional hardware required, thus keeping investment low
- Savings on expensive finishing processes & time



Examples: monitoring porosity of breathable film (above) and coating layer thickness variations (below) with EasyMeasure (false color representation of gray values).

5. Rigid hardware - adjust once and rely on perfect positioning from then on

German engineering has earned a reputation for excellence. This commitment is apparent in Dr. Schenk solutions, resulting in precise positioning of camera and illumination units. All hardware is designed to be unaffected by machine or line vibrations to ensure optimum inspection results.

Your benefits from rigid hardware are:

- Precise positioning for perfect inspection results
- Perfect position maintained over years for consistent inspection results
- Vibration resilience
- Economic retrofitting/expanding possible any time due to modular concept

