



Paper & Paperboard

Your benefits from Dr. Schenk's unique solutions

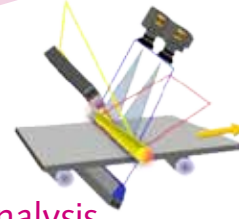
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The Inspection Expert

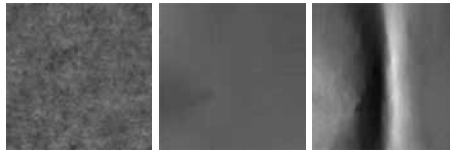
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1. MIDA - Multiple Image Defect Analysis



Multiplexing between illumination sources MIDA enables joint use of different optical channels - each dedicated to a specific inspection task.

Transmission Bright Field	Reflection Dark Field	Oblique Illumination
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Three optical channels provide optimized detection of all defects, e.g. folds in machine direction

Dr. Schenk MIDA:
Defects are revealed more clearly and with greater detail by combining different viewing angles - in a single camera row.

Use Virtual X-Ray's high-intensity illumination or Double Dark Field with Oblique Light Inspection e.g. for paper structure analysis or coating streak evaluation.

Your advantages from Dr. Schenk MIDA are:

- Savings in line space and reduced investment
- Better detection, classification & paper structure analysis
- Data can be linked to WMS (web monitoring systems)



2. Virtual X-Ray & Sirius Light Technology - powerful LEDs for optimized inspection

Unaffected by background noise, Dr. Schenk Virtual X-Ray perfectly detects and distinguishes e.g. small foreign material inclusions and neps.

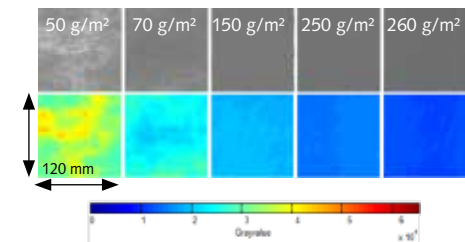


Same defect as seen with a conventional system (left) and Dr. Schenk Virtual X-Ray (right)

Dr. Schenk Virtual X-Ray:
High-power LEDs ensure clear defect images with unparalleled signal-to-noise ratio.

Your advantages from Virtual X-Ray & SLT are:

- No false hits through highly improved detection & classification
- Precise material quality information
- Intelligent, closed-loop fluid cooling for uniform light intensity and very long LED lifetime

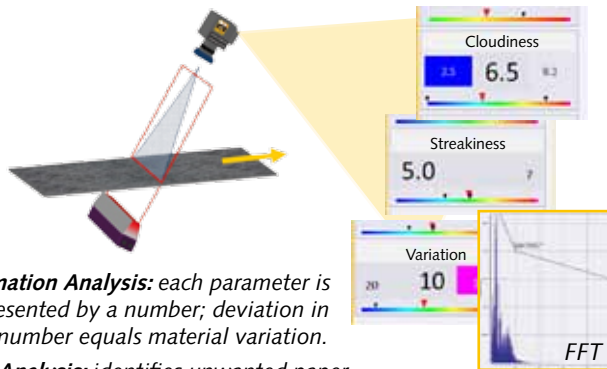


Dr. Schenk Sirius Light Technology:

Inspection in transmission even for high grammage paper material with up to 15 meters material width.

3. Formation Analysis and FFT - optimum control of quality & process

Expand Dr. Schenk EasyInspect with EasyMeasure for complete material quality control through formation analysis.

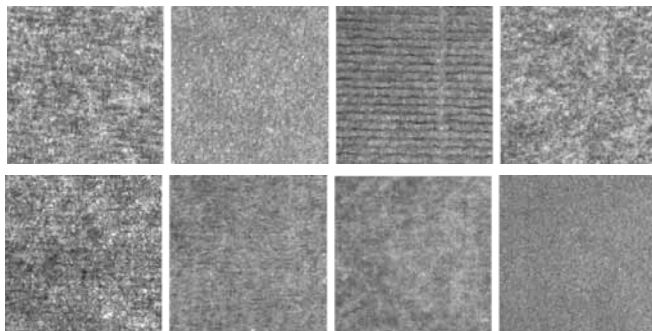


Formation Analysis: each parameter is represented by a number; deviation in this number equals material variation.

FFT Analysis: identifies unwanted paper regularities in-line and in real time.

Your advantages from formation analysis are:

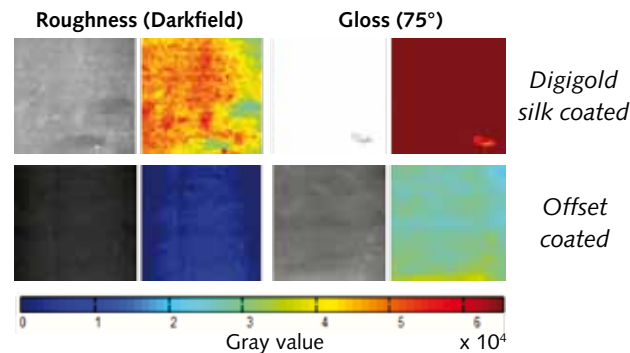
- For the first time ever: in-line, real time full paper roll formation analysis
- Waste reduction and fast product change through instant feedback loop to production parameter setting
- Low investment: no additional hardware needed



Examples of different paper formations

4. Roughness and Gloss Measurement - real-time full surface control

Constant and reproducible roughness and gloss value is essential for homogeneous impression of paper and paper-board.



EasyMeasure: full surface standard in-line roughness and gloss measurement, 16 bit gray value resolution.

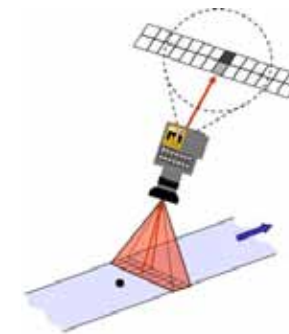
Your advantages from roughness and gloss measurement are:

- Full in-line/real-time control of complete paper roll
- Alarm triggered by area and/or peak thresholds
- Roughness and gloss trend control



5. Ultra-fast TDI cameras with CMOS technology

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



Ultra-fast 8K cameras pick up every defect twice with up to 70.000 or 140.000 scans/sec = 120 μm @ 1.000 m/min optical resolution in machine direction.

Your advantages from Dr. Schenk TDI cameras are:

- Ultimate defect detection in rough material through highly improved sensitivity, esp. for low-contrast defects
- Camera with built-in, high power PC for simultaneous MIDA-driven defect inspection, paper formation & roughness and gloss measurement

