

# SIGNUM

## WEBLINE

### Tape Inspection



Tape on transport device

Reference point for light intensity

#### Application Fields

##### Inspection of:

- Holes
- Inclusions
- Thin areas

In-Line inspection for „endless“ production of tapes; e.g. ceramic tapes, multi-layered plastic foils

#### Main Features

Using backlight illumination, line cameras generate images, which are analyzed in a special procedure customized for tape inspection.

The number of line cameras to be used depends on tape width, required resolution and transportation velocity.

Adjacent to the tape, reference devices for light intensity are located supplying standardized transparency. The difference of light intensity between reference and tape allows to detect deviations in thickness and density.

By automatic adjustment of illumination intensity and exposure time, a reference tape is used to calibrate the system during set-up mode.

Retrieving previously calibrated parameters the system can be adjusted to different tape types. Quality criteria may be determined by the user specifying thresholds for contrast and defect size.

In order to detect surface errors on high opaque tapes frontlight illumination may be supplemented.

Detected defects are displayed onscreen, forwarded to a marker device and listed in a statistics file.

#### Application example: Inspection of green tapes

Prior to cutting, the tape material -located on a coil- is inspected for defects like holes, cracks, thin areas, inclusions, et cetera. Defective tape areas are discharged. Using a resolution of 21  $\mu\text{m}$  defects may be detected starting from 50  $\mu\text{m}$  in diameter.



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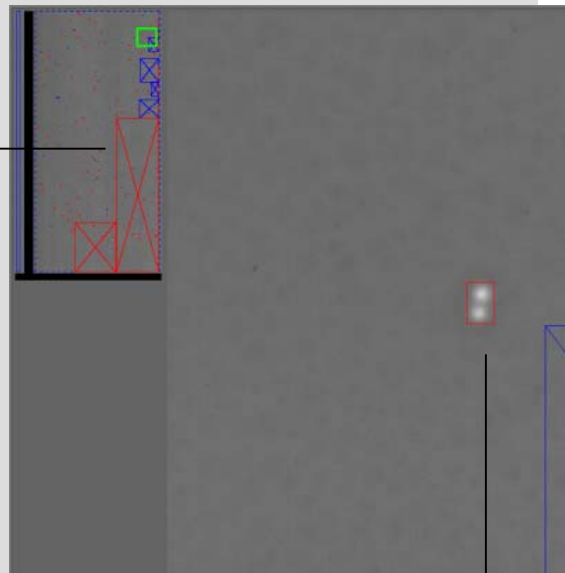
Inspection module (housing removed) with 2 line cameras

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### Inspection System

- Networked PCs with Windows operating system
- Connection of multiple line cameras capable of simultaneous image acquisition
- Inspection module with cameras and illumination
- Rotary encoder evaluation and precise marker control
- Opto-isolated digital interface card to communicate to facility PLC
- Ethernet access for log files and data storage.

Display of large areas with deviations in density



Display of 2 small holes, inner diameter approx. 60  $\mu\text{m}$



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