



Nonwoven products using spunbond, spunlace, airlaid, thermal bonding, needlepunch, carding, etc. technologies for applications like hygiene, filtration, medical, geotextiles, automotive, compounds, and others are mainly characterized by their area weight, air permeability, thickness and visual appearance.

Deviations from standard values indicate changes or malfunctions in the production process which have to be corrected as quickly as possible. For final application or for further processing the nonwoven has to meet acceptance criteria to avoid interruptions in subsequent process stages, as well as defects in the finished goods. Instead of the traditional manual methods, the best, most economic and efficient way is 100% online monitoring of the nonwoven web every day all year round.

The Nonwovens Inspection System **NIS 300** offers automatic inspection of aesthetic appearance and physical defects along and across the production direction based on the principle of image processing technology in real time.

**NIS 300** allows immediate reaction to malfunctions and process irregularities. Its modular design enables individual and customized solutions and is proven with major producers in Europe.

The Nonwovens Inspection System **NIS 300** offers online detection of holes, thin and thick spots, cloudiness, optical density, homogeneity, dirt spots, contamination, printing defects, process drifts, etc. Evaluation parameters can easily be stored and recalled for different products. Detected defect images and deviations from set tolerances are displayed both in real time and as a live scanned product image.



## Scope:

Inspection system for continuous online and real time monitoring of aesthetical and physical defects on nonwoven webs.

## Method:

The inspected web is either illuminated by incident or transmitted light. Thereby, images of the passing web are generated by means of fast high resolution line-scan camera units in combination with the image processing software. Any defects or deviations from set tolerance limits for cloudiness or optical density are detected by means of comparison with stored material recipes of the server PC.

## Results:

Detected defect images and deviations from set tolerances are displayed both in real time and as a live scanned product image. The defect images and the corresponding detailed data are recorded and stored. The detailed data give feedback about defect type and position. Defect classification is given by customized settings in the quality matrix.

## System configuration:

- Modular inspection system for the inspection of different materials and different colours
- Inspection of physical defects and aesthetic appearance
- Camera modules with black and white or colour cameras
- Illumination modules for inspection utilizing transmission and/or remission
- Cluster of PCs for high inspection rates

## Material:

- Nonwoven material white or coloured
- Scalable in width and production speed

## Defects:

### *Physical defects:*

holes, thin spots, thick spots, cracks, folds, non homogeneities,...

### *Aesthetical defects:*

contamination, printing defects, coloured spots, dirt, ...

## Process monitoring:

- Optical density in cross and length direction
- Variance of fiber deposition
- Streakiness, cloudiness and homogeneity

## Software modules:

### *Inspection and sorting:*

- Easily adjustable sorting parameters
- Imaging of defects
- On screen statistics

### *Quality map:*

- Batch based documentation of defect type and defect location
- Quality grading of a production batch

## Process monitoring:

- Monitoring of any drift and deviation during production
- Alarm for serial defects
- Grading of defects
- Advanced statistics and remote control

## Dimensions:

May vary according to customer specifications

## Optionally available:

- Large letter display
- Defect marking system
- Remote maintenance
- LAN integration
- PLC interface
- Field bus interfaces

Technical data and pictures are subject to change.