PulpEye FIBER PROPERTIES ANALYZER

Dot measurement

ANDRITZ

Dot measurement module for frequent and reliable quality inspection

Dot measurement is an online pulp dirt counting and classification module working according to TAPPI/ISO standards, developed in close cooperation with pulp and paper producers.

RAW MATERIAL CONTROL
The dot measurement module detects bark or other types of contaminant, as well as those from other raw materials in the pulp output.

REPLACING SUBJECTIVE VISUAL INSPECTION
With an analysis frequency of up to every three minutes, the dot measurement module continuously analyzes all samples using the same method and under the same conditions. This allows the dot measurement module to provide frequent and reliable results.
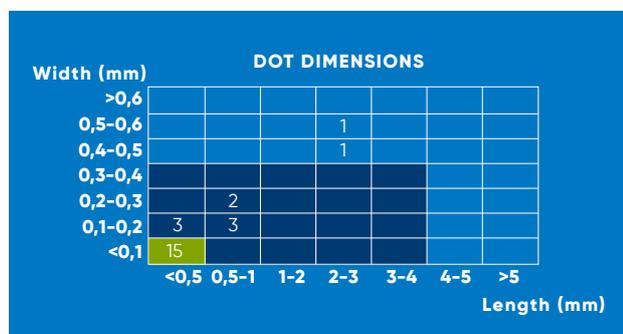
CONTINUOUS SAMPLE THROUGHPUT
The dot measurement module analyzes a total area of about 12 m^2/h. Manual inspections normally comprise a few sheets of pulp per shift.

MARKET PULP PRODUCERS
The dot measurement module continuously inspects the quality of the final pulp before transfer to the pulp dryer, which minimizes the risk of degradation.

EARLY FAULT DETECTION BEFORE TRANSFER TO THE PAPER MACHINE

Width (mm)	DOT DIMENSIONS						
>0,6							
0,5-0,6			1				
0,4-0,5			1				
0,3-0,4							
0,2-0,3		2					
0,1-0,2	3	3					
<0,1	15						
	<0,5	0,5-1	1-2	2-3	3-4	4-5	>5
							Length (mm)

The "dot matrix" shows accepted and unaccepted dots.

Problems with dirt can be detected as early as the pulp mill and resolved before reaching the paper or board machine. This allows many quality issues to be fixed or eliminated more quickly.

IMPROVED STANDARD "DOT MATRIX"
Along with average values and dot distributions, each result also contains a dot matrix, which gives a good overview of the current pulp quality. Alarm limits can easily be set to detect off-grade pulp.

The dot measurement module is integrated in PulpEye Fiber Properties Analyzer cabinet.

DOT MEASUREMENT MODULE

Data from the dot measurement module can be used separately or combined with data from other PulpEye Fiber Properties Analyzer modules like the fiber and shive module to classify pulp quality accurately and frequently.

OPERATION

The dot measurement module is integrated into the PulpEye Fiber Properties Analyzer as a separate module. The module can easily be controlled from the PulpEye Fiber Properties Analyzer user interface.
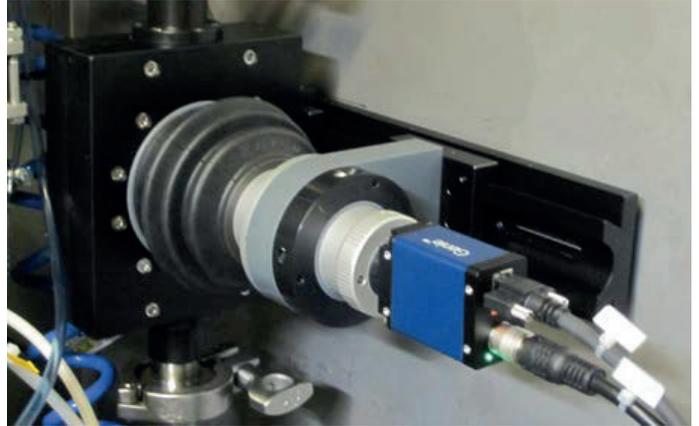
FUNCTIONS AND FEATURES

The dot measurement module dirt counter measures small impurities in pulp suspensions. An advanced vision system scans the whole pulp sample, and any impurities are recorded. The dot measurement module scans an area of up to about 12 m^2/hour.
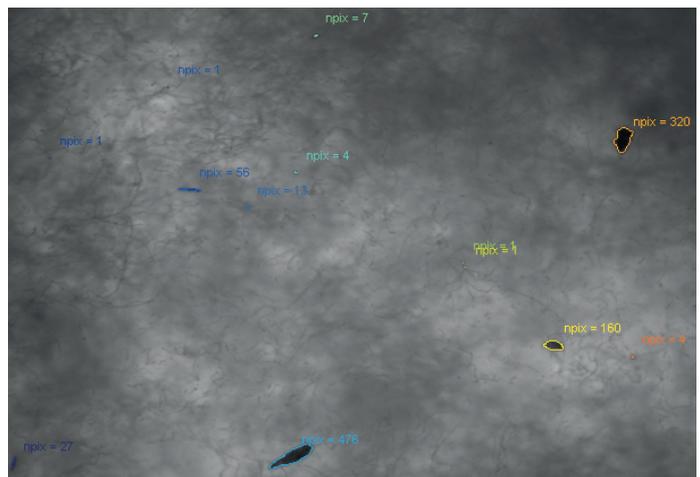
OUTPUT

- Dot area/kg pulp (mm^2/kg)
- Number of dots/kg pulp
- Average dot size (length, width, area, etc.)
- Dot size distributions according to standards
- Grayscale of each dot
- "Dox matrix" for easy classification
- Detailed information about every detected dirt object for further classification use

PARTS

- Optical unit including camera, LED light source, optics, and flow cell
- Electronics box
- All parts are mounted into the PulpEye Fiber Properties Analyzer base unit

Dot measurement uses an optical method for continuous dot measuring.

Grayscale image with classified dots.

CONTACT US FOR MORE INFORMATION

Advancing autonomous operations is our vision and is becoming an integral part of industrial processes. ANDRITZ is at the forefront of this transformation, leveraging digital innovations along with deep operational and technical expertise to improve process efficiency, quality management, and production reliability and availability.

We focus on developing autonomous pulp mills and process optimization, to support efficient and sustainable operations by combining automation, electrification, intelligent instrumentation, and digitalization to create measurable value throughout the full life cycle and the entire value stream.

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