PulpEye FIBER PROPERTIES ANALYZER

Online pulp quality data customized to your needs

ANDRITZ

What drives us forward?

ANDRITZ's aim is to make the fully autonomous mill a reality because of the measurable outcomes it brings to our customers' industrial plants. These outcomes impact four strategic pillars that directly influence operational performance: process, asset, human, and sustainability.

PROCESS

ASSET

HUMAN

SUSTAINABILITY

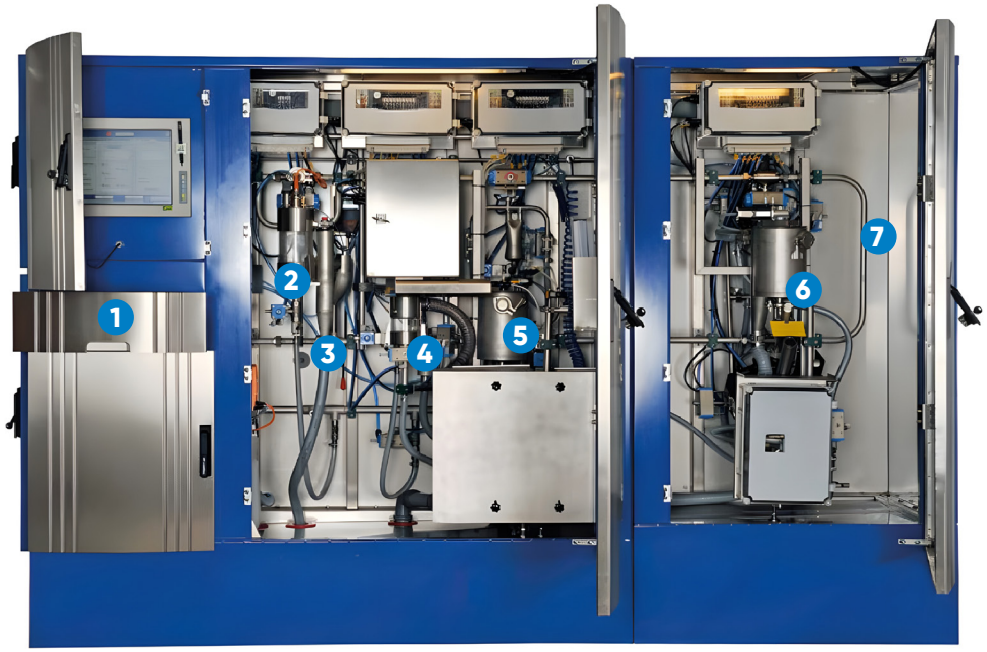
These pillars make our value tangible, connecting solutions to what truly matters to our clients: real, measurable results.

How can we make a difference in your mill?

This is the question that guides the development of every ANDRITZ automation and digitalization solution for the pulp and paper industries. More than delivering technology, our commitment is to generate real and measurable impact on our customers' operations. We believe that true value lies in results you can measure. That's why we focus on outcomes that are tangible, trackable, and aligned with our customers' goals. In practice, this means connecting solutions that can act on:

These are real gains, connected to each pillar, transforming technology into tangible results. By connecting solutions designed to solve specific industry challenges, we deliver new ways to make a difference and contribute to results. This is how we transform technology into real value.

Cost-efficient online measurements

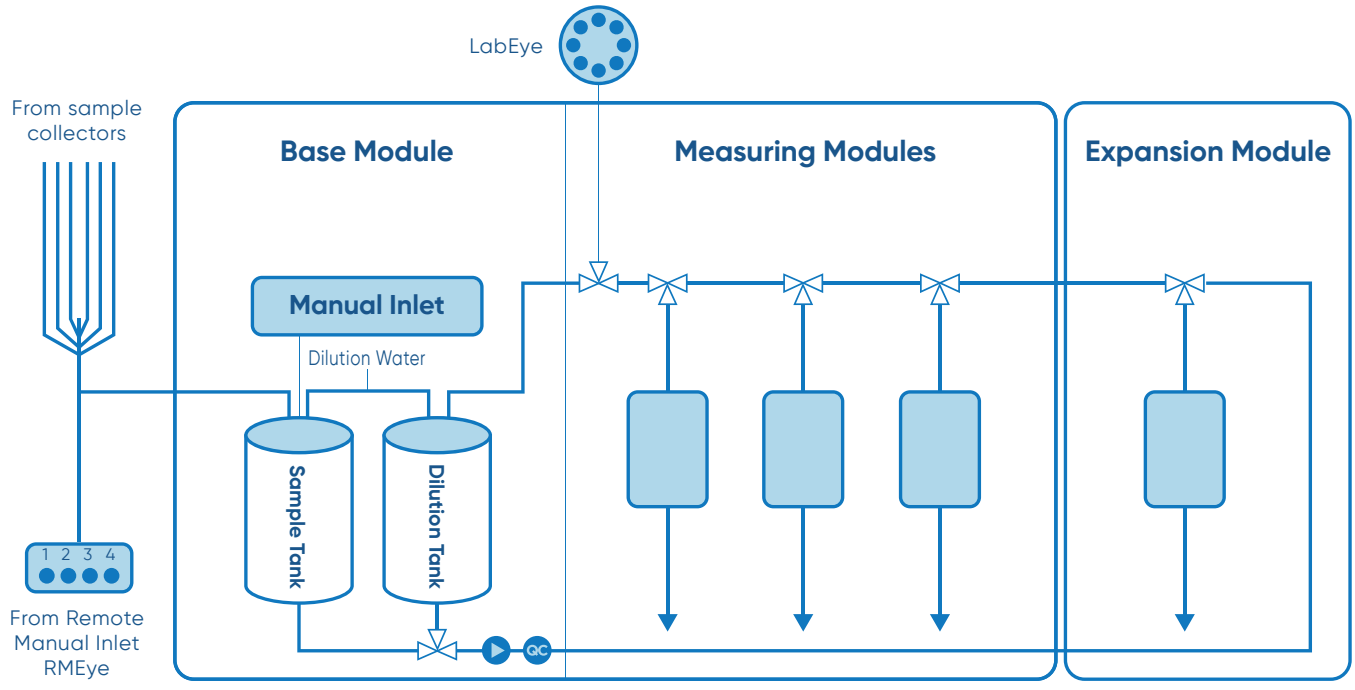


1. Manual inlet
2. Freeness module
3. pH module
4. Brightness module
5. Fiber/shives module
   Fiber wall thickness
   Vessel cell module
6. Kappa measurement
   Crill measurement
7. Dot measurement

BASIC FUNCTIONS

The PulpEye Fiber Properties Analyzer functions comprise modules for measuring fiber length, shives, dewatering (CSR, SR, MSR or EWD), kappa number, brightness, and pH according to standard methods. The unit contains sample and dilution tanks as well as manual inlet. The PulpEye life cycle costs are low with easy maintenance.

As far as possible, the PulpEye Fiber Properties Analyzer uses standard components, parts, and computer equipment that are easy to procure worldwide.



THE EQUIPMENT OFFERS USERS:

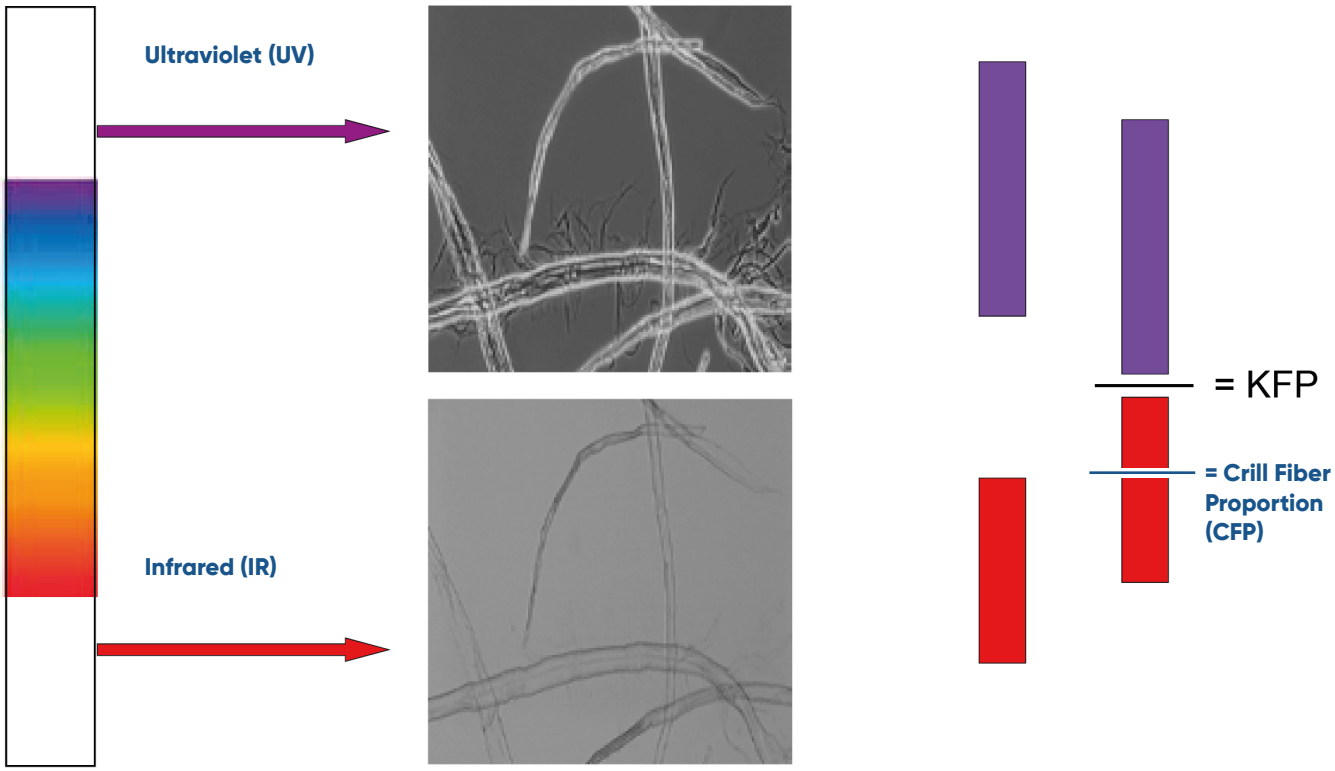
- Top performance thanks to clever sample preparation and unique measuring technology, delivering speed and accuracy.
- Minimum maintenance due to a robust and flexible design.
- Local service and technical support.
- Low life cycle costs due to high equipment quality.

MAXIMIZE YOUR BENEFITS WITH PulpEye FIBER PROPERTIES ANALYZER CONSULTING, OFFERING:

- Solutions for improved product stability and reduced production costs, i.e. an improved ROI.
- Support with process monitoring, property data calculation, and process control.
- Image analysis applications, and far more...

The PulpEye Fiber Properties Analyzer edge technology

The modules for measuring crill, fiber wall thickness, and vessel cells were partly developed together with PulpEye's partners.



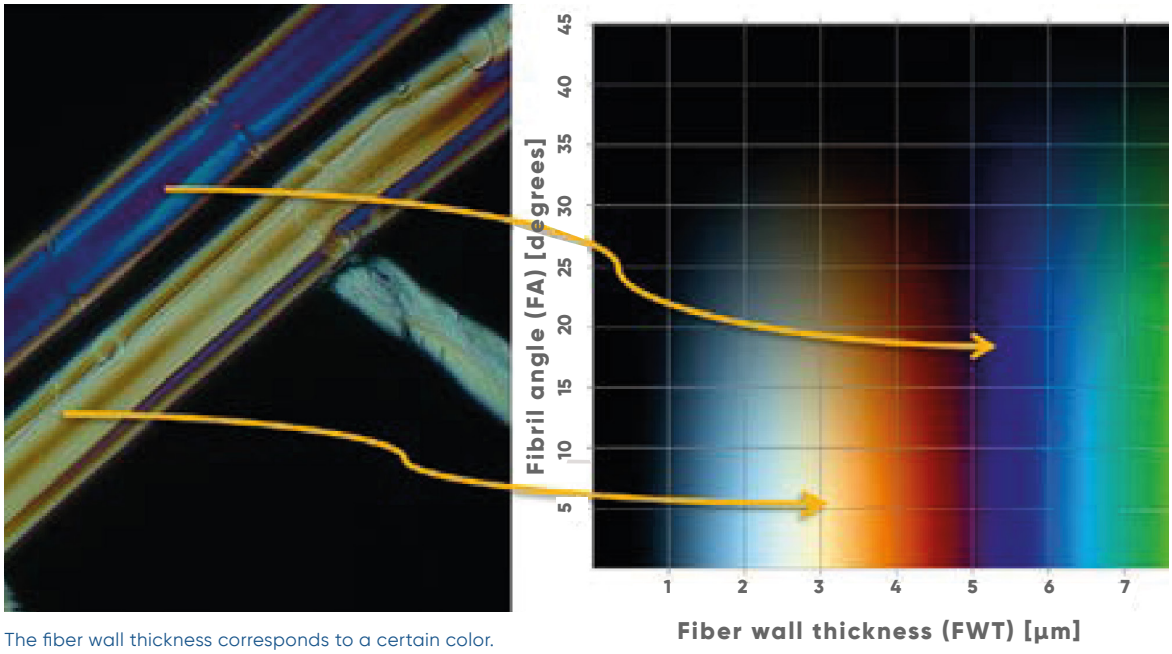
Crill measurement is based on comparing two optically-measured surface areas (light absorption).

CRILL MEASUREMENT

Bulk is an increasingly important board and paper property when it comes to reducing grammage without losing bulk and stiffness. Tensile strength, tear resistance, Scott Bond, porosity, and burst strength are important properties for product quality and consistency, and for tasks such as optimizing stock preparation and refining. Data from the crill measurement (see image on page 4) is essential for optimizing pulp quality based on technologies from Innventia, part of RISE Research Institutes of Sweden.

FIBER WALL THICKNESS (FWT)

The PulpEye Fiber Properties Analyzer offers the world's first online measurement of fiber wall thickness – a powerful tool to minimize variability in pulp quality. Processing can destroy the fiber integrity of thinner-walled fibers, which threatens the quality of paper and board. Knowing the thickness of the fiber wall allows more processing control in order to achieve optimal paper and board strength properties. FWT data can be used for raw material control, fractionation, product development, and quality assurance certification for customers, based on patented technology by FPInnovations, a private, not-for-profit R&D organization.

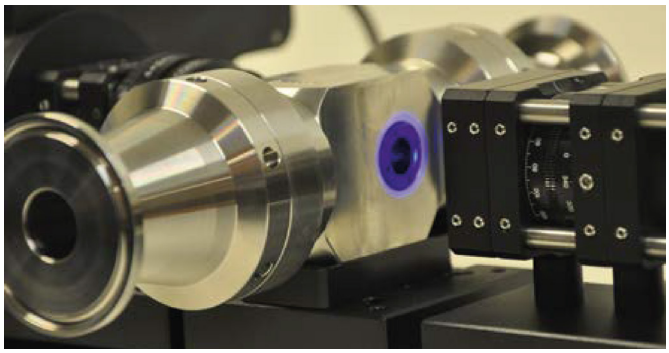


The fiber wall thickness corresponds to a certain color.

GET AN OVERVIEW
PulpEye Fiber
Properties Analyzer

VESSEL CELLS

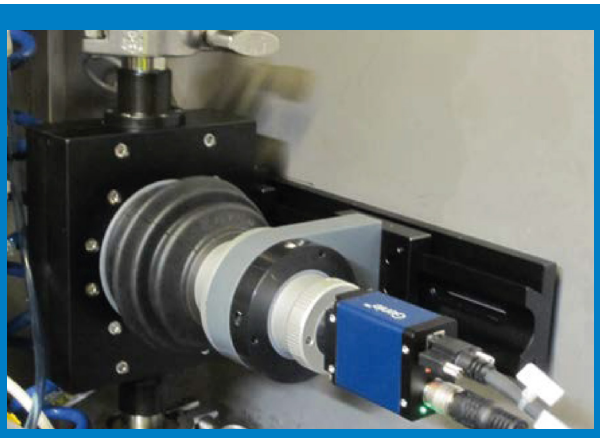
This module measures the quantity and size of vessel elements in hardwood pulps. Vessel cells can reduce print quality by acting like flakes or failing to absorb ink in the same way as the surrounding fibers. Dust problems can also occur due to vessel elements becoming loose during printing. The module uses circularized polarized light so that the images of fibers and vessel cells can be clearly distinguished from the background. PulpEye vessel cells is based on patented technology for measuring fiber wall thickness.



The measurement cell for PulpEye vessel cells.

DOT MEASUREMENT

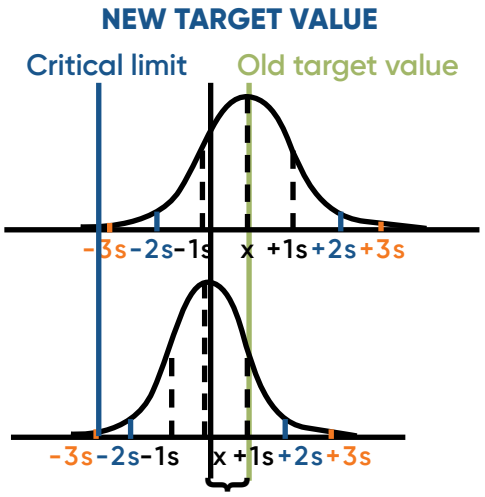
It is of utmost importance to keep the amount of dots and other impurities to an absolute minimum, whether in pulp suspension flows or dry powder flows. Instead of detecting and identifying impurities manually, which limits the possible number of samples that can be taken and analyzed, dot measurement for pulp flows and dot measurement for powder flows can do this online. Impurities are therefore spotted at an early stage, which minimizes risk and the amount of rejected products.



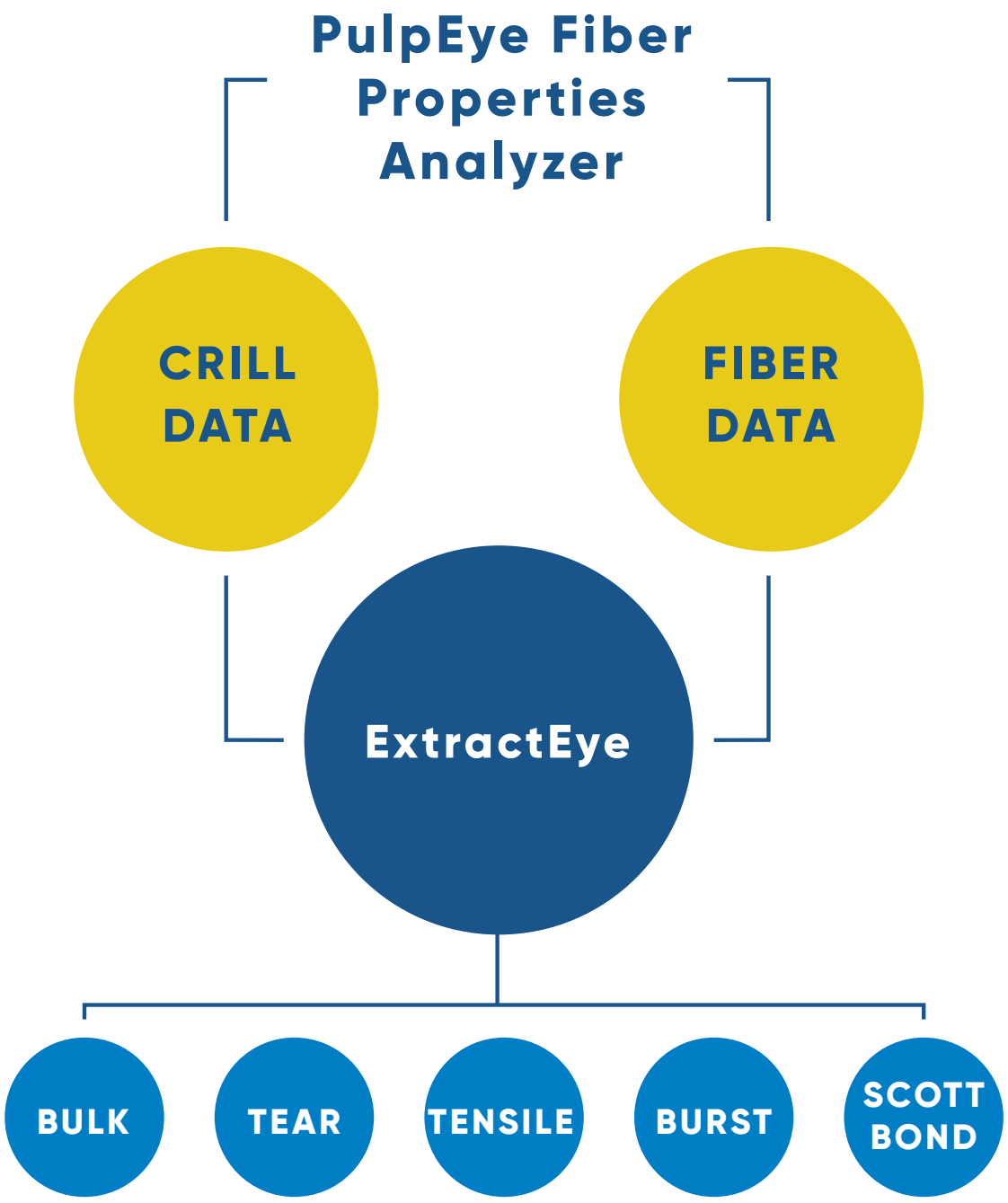
Dot measurement optical unit for online measurements.

PulpOnTarget

The PulpOnTarget combines data from PulpEye Fiber Properties with the ExtractEye software to calculate pulp properties. Fiber data from the PulpEye Fiber Properties Analyzer and crill data from the crill measurement module are fed into the ExtractEye program every five minutes, where bulk, tear, tensile, Scott Bond, and burst strength properties are calculated.



Potential savings can be achieved by setting the target value closer to the critical limit, which results in smaller variations.



BENEFITS

- Real-time, online data for bulk, tear, tensile, burst index, and Scott Bond values are continuously available to process operators.
- Batch quality can be compiled for each order and easily communicated to customers.
- Strength values are updated every five minutes, and there is no need to wait for laboratory results.
- Less time is required for laboratory work.
- The process can be run closer to specifications, improving quality consistency and saving energy.
- The modules are robust and reliable for measurements and calculations.
- ANDRITZ can handle follow-up and maintenance.

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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