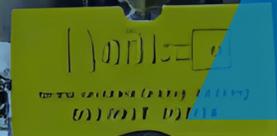




# PulpEye FIBER PROPERTIES ANALYZER

Kappa measurement



**ANDRITZ**

# Reliable and robust Kappa measurement

The Kappa measurement module is based on proven technology with measurement functions and components that offer robust and reliable Kappa measurement, year after year. The Kappa module is based on the original Svenska Träforskinings Institutet (STFI), nowadays RISE, Research Institute of Sweden method and quickly generates reliable analysis results from each sample point for closed-loop control.

As the Kappa number is approximately proportional to the residual lignin content of chemical and semi-chemical pulps, it is essential to monitor and track Kappa number data. With online access to Kappa number data, cooking effectiveness and oxygen delignification and bleaching can be controlled and actions taken.

Depending on the mill's processes and pulp grades, sample points can be anywhere in the fiber line from the digester blow line to the finished bleached or unbleached pulp.

## **BETTER MANAGEMENT OF PROCESS VARIABLES**

Online measurements help reduce Kappa number variations. The amount of bleaching chemicals needed is related to the lignin content of the unbleached pulp.

## **REDUCED PRODUCTION COSTS**

By frequently measuring a pulp's Kappa number in cooking, delignification, and bleaching processes, deviations from target values can be minimized in production. Smaller variations mean lower usage of cooking and bleaching chemicals, which means lower production costs.

## **LOWER ENVIRONMENTAL LOAD**

A fiberline running with less variation is more stable and therefore causes a lower environmental load.

## **PulpEye KAPPA MEASUREMENT FOR ALL PULP TYPES**

Producers of unbleached pulps for kraftliner products, sack papers, other kraft papers, and speciality papers have the same needs as producers of bleached pulps to monitor the post-digester Kappa number of the pulp. This is to make sure that the digester or digesters deliver pulp of the right quality, which also helps reduce costs and environmental load.



The Kappa module is based on the original STFI method for Kappa number measurements.



# Operation and compatibility of the PulpEye Kappa measurement

The PulpEye Fiber Properties Analyzer's reliable Kappa measurement module was introduced in 2010 and has since been a great success. In all deliveries of PulpEye Fiber Properties Analyzers to chemical pulp mills since then, a Kappa module has been a part of the installed PulpEye Fiber Properties Analyzer unit. The construction is robust with proven performance and low maintenance needs and costs.

## OPERATION

Samples are automatically taken frequently from each sampling point and analyzed in the Kappa measurement module. Samples can also be fed to the module via manual sampling station or the manual inlet.

## OUTPUT

The Kappa number for the pulp from each sampling point is presented on a screen in the process operators' control room. The Kappa number is calibrated according to the laboratory standard method ISO 302 or T-236.

## PARTS

The Kappa measurement module consists of a wash tank, dilution tank, agitator, optical unit, level transmitter, and a de-aeration tank. Aside from these components there are a few pneumatic and electric valves. The optical unit is based on proven technology with UV and IR light sources, but with state-of-the-art components.

## AUTOMATIC LABORATORY SAMPLING

The automatic sample collector can be programmed to take samples at certain times. Each sample is collected in a bottle, and the collector can hold up to eight bottles. The samples can thereafter be analyzed at a suitable time. It is a simple and flexible way to automatically collect samples without any manual labor required. Each sample is numbered to prevent mix-ups and to record the sampling time.

## SCREENING MODULE

The pulp stream in the blow line is a tough mixture of chemicals and pulp, making this unique screening module a recommended add-on to the Kappa measurement module. The screening module is a screening and washing unit that is installed close to the sampling point in the blow line. It screens and washes the pulp before transferring it to the Kappa measurement module. This reduces the cleaning and maintenance required for the measurement module, as all the black liquor and big wood particles are removed.

## COMBINATION WITH OTHER PulpEye MODULES ENSURES A GOOD PROCESS CONTROL

The Kappa measurement module can be combined with all other PulpEye Fiber Properties Analyzer modules. A typical fiber line would be equipped with modules measuring critical properties like lignin content, brightness, fiber properties, drainage, and shives as well as dots, from the digester blow line up to the final pulp – bleached or unbleached.

**GET AN OVERVIEW**  
PulpEye Fiber  
Properties Analyzer





## 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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