PULP AND PAPER

L&W Fiber Tester Plus
Testing and industry-specific instruments

Overview
For all pulp and paper manufacturers, swiftly ensuring that the furnish has the correct properties is key to profitability. L&W Fiber Tester Plus measures fiber length, width, fines (P&S), shape factor, macrofibrils and coarseness by image analysis. It is fully automated and comes with a carousel with six glass beakers, eliminating the time-consuming, one-sample-at-a-time manual feeding.

Optional software and hardware modules are also available for crill, as well as software modules for vessel cells, minishives, local deformations (kink) and calculations of fiber mixes.

Ease of use and flexibility in reporting
The reports and statistics of the measured samples are flexible. For example, it is easy to select different weighing functions for averages and distributions of fiber properties. The report is also easy to specify for each sample type which is set up by the user.

All results from the measurement are presented on the screen and stored in a database. They can also be obtained as printed out reports and easily transferred to other computers or programs such as Excel for further analysis.

ABB’s L&W Fiber Tester Plus is an instrument for advanced, reliable analysis of fiber dimensions, measuring the pulp furnish composition quickly and easily. Not only does it determine common properties like length, width, coarseness and impurities, but it’s also the only instrument on the market that can analyze crill, the very small particles in a pulp suspension. The instrument, with its compact design, is intended and optimized for laboratories.

Two-dimensional imaging technology
A very small measurement gap between the glass plates, which aligns to ISO standards, ensures proper alignment of the fibers so that an entire fiber can be seen and detected by the camera. The images of the fibers and detected objects are displayed during measurements and can be saved for later viewing.

Features
• Integrated measurement of impurities
• Internal vacuum system for removal of air bubbles
• Measurement gap according to international standard
• Self-opening and cleaning measurement cell

Benefits
• Fast classification of pulp quality for quicker corrective action
• Applicable for multiple properties to determine the pulp quality
• Optimization of refining – thanks to measurement of macrofibril area and perimeter
• Only laboratory fiber analyzer that measures crill
Automated measurement technology enables frequent analysis of pulp quality:

Measurement for a wide variety of properties
The L&W Fiber Tester Plus offers the ability to measure almost a dozen different fiber properties, including:

- **Length:**
  Measure true fiber length with minimum impact from the degree of deformation.

- **Width:**
  Detect variations of parts of µm.

- **Shape factor:**
  Determine how straight the fiber is; a change of 1% in shape factor has a significant impact on Tensile Index.

- **Fines:**
  Measure coarse fines class (P) and a finer class (S); Fines can have a negative effect on dewatering and pressing.

- **Macro fibrillation area and perimeter:**
  Calculate two fibrillation indexes (fibril area and fibril perimeter) for different length classes to monitor if they behave differently.

- **Coarseness:**
  Defines weight per fiber length unit and is often related to fiber wall thickness and flexibility.

- **Number of fibers per gram:**
  Requires dry weight data for the sample and the same is valid for coarseness.

- **Impurities:**
  Kink, vessel cells, minishives, flocs and dirt are analyzed via special software, which has recommended settings for vessel cells and shives.

- **Blend:**
  Analyze the ratio of reference fiber species in a fiber mix in a software option; references are stored permanently in the database.

- **Crill:**
  Determine crill quota in a separate measuring cell, by a method based on how particle diameter interferes with different parts of the light spectra. Very small particles (fibrils) interfere with UV-light more than IR-light, and larger particles (fibers) interfere more with IR-light. L&W Crill is a software and hardware add-on to L&W Fiber Tester Plus.