

L&W Crill

Lorentzen & Wettre Products | Pulp Measurements

L&W Crill is an optional measurement to ABB's pulp analyzer L&W Fiber Tester Plus. It uses a non-imaged based method for detecting very small particles in a pulp suspension. Crill is an important variable to measure in pulp mixtures, as these tiny fibers contribute to overall paper strength and end product quality.

L&W Crill analyzes pulp suspensions to monitor refining and dewatering. Refining the pulp increases the L&W Crill quota, which is the result of the measurement. During the refining process, the fibers are affected in different ways. For example, the fibrils of the fiber walls are exposed to a certain degree; these fibrillary particles on the fiber wall are described by crill. The L&W Crill measurement requires hardware and software installation. The result, L&W Crill quota, is not an absolute value, and to truly understand pulp suspension other fiber properties like fiber length, width and fines content should also be analyzed. Therefore the same sample that is analyzed by L&W Crill is analyzed through image analysis in L&W Fiber Tester Plus. With this added capability, the L&W Fiber Tester Plus can now provide all information needed to understand pulp composition, including fiber length, fiber width, shape factor, fines content, fibril index and crill.

L&W Crill analyzes how particles with different diameters absorb and scatter light of different wave lengths. By sending UV-light and IR-light through a pulp suspension, it detects if small particles are present in the solution. Small particles (crill) will scatter and absorb light from the UV-light source to a larger extent than the IR-light source, and the larger fibers will impact the light coming from the IR-light source more. Figure 1 illustrates how L&W Crill measures and calculates crill quota. The crill particles have a diameter that is approximately one hundred times smaller than the fiber diameter. The crill quota correlates to fibril perimeter for different types of pulps refining curves. Figure 2 shows the measuring principle in the measuring cell of L&W Crill.

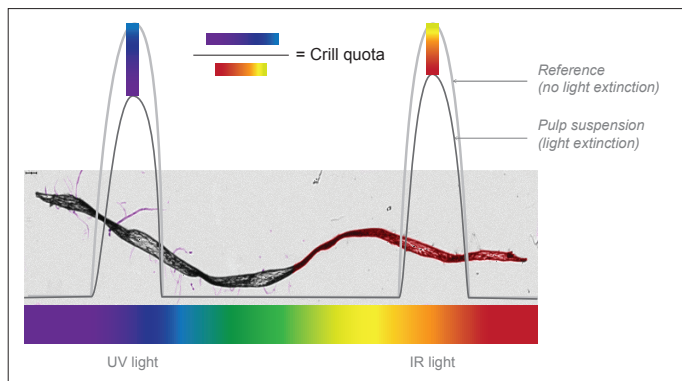


Figure 1 – The crill quota is calculated by detecting light extinction of UV- and IR-light, which are effected by particle of different sizes.

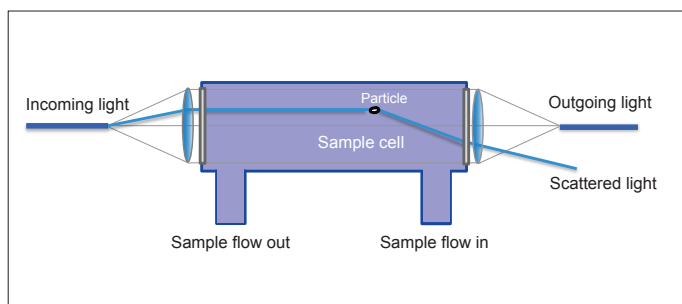


Figure 2 – Measurement principle in L&W Crill.

Technical specifications

L&W Crill – code 935

Software and hardware to be installed with L&W Fiber Tester Plus

Results	L&W Crill quota
Typical measurement range for L&W Crill quota	0.7–2.0
Typical repeatability of measurement within the same sample	+/- 0.015

Installation requirements

Power	L&W Crill software and hardware is integrated in L&W Fiber Tester Plus
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