

DESKTOP KAPPA ANALYZER

Duralyzer-NIR Reflective Technology

THE BENCH TOP KAPPA ANALYZER has been designed to overcome all of the issues associated with manual Kappa Quality testing, providing fast, reliable and accurate results with minimal operator involvement. The DURALYZER-NIR bench top reflective light analyzer provides the results of the standard lab test; providing measurements for Kappa values of pulp samples.

The DURALYZER-NIR bench top reflective analyzer uses the same NIR technology that is used in our online analyzers. This instrument provides many years of trouble free operations due to its specific design to withstand the somewhat harsh lab environments of the pulping area. The only required maintenance for the instrument is an annual replacement of the light source and occasional acid cleaning of the sample holders.

MANUAL KAPPA TESTING has to be performed routinely for quality control purposes. More often than not, lab testing is the only measurement procedure available for process control decisions. The tedious and cumbersome nature of the standard Kappa test for pulp does not lend itself well to rapid manual testing.



However, the nature of this testing procedure does lend itself well to induced errors if it is not performed with care and attention. As a result, Kappa testing frequency is low and potentially biased and is usually performed at most once or twice per shift. The result of this practice is that much of the process variation is missed as well as the opportunity to reduce process variations.

THE DURALYZER-NIR BENCH TOP REFLECTIVE ANALYZER completely eliminates all of the negative issues associated with manual and automated titrations by eliminating the chemical requirements, accurate volume measurement requirements, the effects of human errors and measurement requirements, and the effects of deadload variations.

The NIR Reflective technology allows very fast and easy sample preparation for Kappa quality laboratory tests. Samples are prepared and set on the special light and measurement source. Light is transmitted from the light source and at the same time measured for reflective NIR spectrum. Spectrum is compared to internal library of Kappa models and the test results are reported on LCD display and send to the mill database for further analysis. Analysis is fast and takes only about 20 seconds. Test itself is operator independent and gives reliable and repeatable analysis of the samples.



Characteristic	Lab Method	Duralyzer-NIR
Available Measurement	Kappa #, Other measurements require different testing methods	Brightness, Kappa #, Viscosity, Lignin Content
Measurement Technique	TAPPI standard. Reaction with KMnO4, KI and H2SO4 plus titration with Na2S2O3	Inferred - PLS regression technique based on TAPPI test method (Regression model relating spectral signature to chemical composition.)
Measurement Accuracy	Potential operator bias due to volume errors. Many opportunities to introduce errors.	All operator bias removed since an accurate volume of sample is not needed. Almost no opportunities for induced errors.
Analysis Speed	Slow - Minimum of 20 minutes	Medium - 6 minutes. Approximately 3 minutes for pulp pad preparation plus 3 minutes for analysis
Maintenance	High – Replacement chemicals, pH probe calibration, replacement glassware.	Very Low - Yearly light source replacement. Occasional lab verification.



Manufacturer: www.rehodes.com
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