

product specification

ATS Absorption System



Description

This absorbency testing system measures the absorption/desorption rate and total capacity of absorbent materials in real-time. This compact and rugged table-top instrument is ideal for research and development and quality control applications both in the laboratory and within the production area.

Absorption measurements are based on time and the amount of fluid displaced from a fluid reservoir. The desorption test, which can be run after the absorption test, measures the amount of fluid that is removed from the sample.

Specific sample applications include paper products, tissue, napkins, sanitary products, super absorbers, non-wovens, textiles and diapers.

Operation

A sample is placed on the test table, which is connected to a liquid reservoir by tube. A highly accurate and reliable optical sensor checks and zeroes the fluid level at the beginning of each test to ensure accuracy. The optical system also monitors the fluid reservoir during the test and maintains a constant fluid level, at a pre-set differential head, ensuring high sample throughput and virtually limitless absorption capacity.

Once the fluid level is zeroed, a small pulse of fluid is emitted through the tube and is absorbed by the sample. The test cycle can be time limited or terminated when a pre-set rate of absorption is reached.

Features

- Powerful software, designed for easy operation and with an intuitive Windows 2000/XP® interface for defining test parameters and running tests. During the test, the data are displayed clearly and stored. They can then be downloaded to a computer for storage and analysis. Integrated data analysis is calculated automatically and the raw data can be exported to other spreadsheets. A test result summary page is produced for each test providing a total overview of a test at a glance
- Absorption and desorption rate and capacity measurements
- Fully automatic operation helps eliminate operator variation
- Results available in absolute grams, grams/gram or g/m²
- High sample throughput
- Modular, self-contained design



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Physical specifications

Dimensions

46 x 38 x 41 cm (W x D x H)

Net weight

12 kg

Options

- Directional Flow Rate Orientation System – provides directional absorption rate, sheet orientation information and MD/CD index measurement. This information provides a complete picture of the sheet absorption properties and structure. Directional absorption rate is determined by measuring the time required for a fluid to travel from the introduction point to the eight equally spaced electrodes positioned every 45° around the centre
- Static/dynamic pressure testing – provides absorption rate and capacity measurements under static or dynamic pressure. There is operator control over the amount of pressure applied to the sample at all times. This option requires compressed air and can be combined with the Directional Flow Rate Orientation System, to provide directional absorption/sample orientation information, under pressure. Originally developed for battery separators, it has several applications in other industries including sanitary products

Performance data

Test types

Timed and programmable slope

Time range

51–999 s

Absorption slope range

0.005 g/s–0.005 g/53 min

Maximum sample absorption capacity

Virtually unlimited

Weight sensitivity

0.005 g

Power supply

120 V, 60 Hz/220 V, 50 Hz

