

Water Activity Monitor



Features of the Fast1

- Fast chilled mirror dew point technology.
- Unique air tight sample chamber independent of the sample cup.
- Ventilation control for powders.
- Dynamic studies - measure water activity vs time.
- Output plots for dynamic studies aw vs time.
- Built in 240 x 128 illuminated LCD display.
- Optional data storage on built in floppy disk.
- Optional built in printer prints aw, surface temperature, sample ID and time vs aw plots.
- User replaceable modular sensor for easy maintenance.
- 'Remote' head extension cable for large samples such as whole cheeses.
- Automatic calibration routine.

Water Activity Measurement

Water activity a_w indicates how tightly water is bound in a product. It is a direct measurement of the free, unbound or 'active' water that is available to participate in the chemical reactions that influence many product qualities such as shelf life, nutrient stability and microbial safety. Water activity is defined as the Equilibrium Relative Humidity - ERH divided by 100. For pure water $a_w = 1.00$

The water activity of a substance can be calculated by placing a sample in an airtight enclosure and measuring the dew point in the enclosure and the sample temperature. The Fast1 is a high speed water activity measurement meter that uses this principle to produce water activity data in a user friendly way.

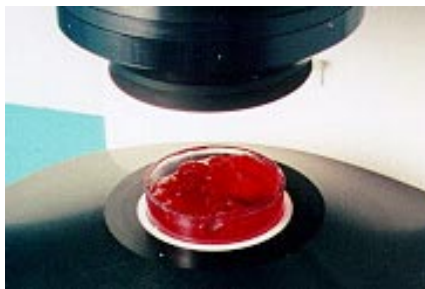


Tabulation of results in display

Principle of operation

The Fast1 uses chilled mirror dew point technology. The sensor includes a Peltier cooled gold mirror to measure the dew point and a high precision IR detector to measure the sample surface temperature. The sample is placed in a small cup which is then positioned in the sample chamber. The chamber is then closed to form an air tight compartment. In the basic unit the measurement is initiated automatically and the *aw* appears on the LCD display within a minute or two depending on the sample type. The addition of the key board accessory gives you access to the user menu and the set up and control functions of the instrument. This allows you to select the fan speed, adjust the timing, enter a sample ID, store data on a disk, print to the printer and set up time intervals for dynamic studies.

Advanced measurement chamber



The Fast1 uses a newly designed measuring chamber which has distinct advantages over existing technology. The chamber seal is not part of the sample holder so that the seal cannot be

contaminated by product. This ensures a reliable air tight seal for every sample. Also there is a variable speed circulation fan in the chamber which is used to quickly bring the environment into equilibrium. The variable speed makes the Fast1 particularly useful for powder products as the fan can be adjusted so as not to blow the product around the chamber.

Unique modular design

The measuring head of the Fast1 is an integrated module, it can be used with an extension cable so that the head with its built in suction seal can be applied to large samples, such as whole cheeses. The modular design also makes the head easy to clean and service.

Easy to use

The Fast1 one is very easy to use. The sample is place in a small stainless steel or plastic cup which is placed onto the base of the air tight test chamber. The measuring head slides down from above and forms an airtight seal to the base, enclosing the sample. Measurement can be initiated automatically or with a key stroke.

Specifications

Precision	+/- 0.003
Response time	5 mins or less
Display	illuminated LCD
Cup size	40mm diameter x 17 mm deep
Output	RS232 data output
Power	115 / 220 Volts AC



Ordering Information

Model	Description
FAST1	Standard unit displays aw. Automatic initiation on closing chamber. RS232 data output.
FAST2	Standard instrument as above with keyboard giving access to internal menu for custom set up of fan speed, aw vs time, equilibrium time, special calibrations, plot, display and tabulate results.
FASTP	Thermal printer attaches to back of unit
FASTC	Reusable/disposable sample cups



Instruments for Food Technology

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