

Sartorius LMA200PM

Speed meets analytical precision

Moisture Analysis



- Can be used for liquid and pasty samples with a moisture content of approx. 8 - 100%
- Analysis time takes just 40 - 120 seconds (depends on sample and moisture content)
- Easy two-key operation in the routine mode
- Endpoint determination
 - Fully automatic; sensors for mass and moisture
 - User-defined as a loss of weight/time
 - Timer mode
- Built-in analytical weighing system with 70 g capacity and 0.1 mg resolution

If the sample contains a high moisture content, microwave drying is the fastest and most effective thermogravimetric method (loss-on-drying principle) for moisture analysis. Developed for measuring moisture content ranging from approx. 8% to 100%, the LMA200PM performs moisture analysis in a fraction of the time it takes for other thermogravimetric methods. It delivers results between approx. 40-120 seconds on average. With a cylindrical design, a focused emission of microwave energy is channeled vertically through dual apertures at the bottom of the chamber. This concentrates the microwave energy specifically to the sample. During the test, a carousel spins the sample, permitting an even distribution of microwave energy. This prevents hot and cold spots from occurring, a familiar problem with conventional microwave analyzers.

Built-in analytical weighing system

The moist and dry weight of the sample required for calculating the loss of moisture is measured by a built-in analytical weighing system featuring 0.1 mg resolution. Thanks to its monolithic design (the cell is robotically etched from a single block), this system is particularly suitable for use in a moisture analyzer, because it considerably reduces zero point drift during heat exposure compared with classic weighing systems.

Intelligent endpoint determination

A moisture sensor integrated in the exhaust system of the sample chamber monitors the progress of drying. When the measurement begins, the moisture of the air inside the sample chamber continuously increases as water evaporates from the sample. Once the sample has dried and no longer releases water, the air moisture content drops back to its original level - a clear indication of the end point. At the same time, the built-in weighing system monitors the weight progression and confirms when the sample reaches a constant weight. This dual monitoring system ensures optimal moisture analysis results.

High speed

Two factors play a major role for ultra-fast measurements. First, the sample must absorb microwave energy within the shortest time possible and transform this into heat energy. For this purpose, the LMA200PM has a cylindrically shaped sample chamber that optimally focuses the microwave radiation on the sample. Second, the resulting water vapor must be transported away from the sample as fast as possible to obtain fast analysis results. To accomplish this, a sample is applied to a glass fiber pad that allows water vapor to evaporate not only from top of the pad and upward through the sample, but also from the bottom of the pad. An exhaust system draws water vapor out of the sample chamber, thus preventing the effects of condensation.

Technical specifications | accessories

Model	LMA200PM
Weighing capacity (g)	70
Measuring accuracy of the weighing system (g)	0.0001
Reproducibility on average for initial sample weight starting at approx. 1 g (%)	± 0.05
Sample carriers	90 mm Ø (3½") glass fiber pads
Display modes	% moisture, ppm moisture, % volatile components, % dry weight (solids), ppm dry weight, g dry weight, mg loss on drying, % RATIO
Measuring range	Approx. 8–100% moisture
Sample heating	Microwave generator with 1,000 W input power
Power control for heating	2–100%, adjustable in 1% increments
Endpoint determination	– Fully automatic, by means of sensors for mass and moisture – User-defined as loss of weight/time: 1–50 mg/1–99 sec. 0.1–9.9 %/1–99 sec. – Timer mode: 0.1–99.9 min.
Analysis time (in seconds)	Approx. 40–120 (depends on sample and moisture)
Programs	320 saved to non-volatile memory
Data printer	Thermal printer, built-in
Moisture analysis report	– User-configured GLP record – The report can be printed on non-fading paper by the built-in thermal printer.
Operator guidance	– Menu-driven, alphanumeric dialogue text (English, French, German, Italian and Spanish selectable) – 5 pre-programmed function keys
Data interfaces	– 1 × RS-232 port for PC – 1 × Ethernet port
Housing dimensions (mm in.) W×D×H	510×535×304 20×21×12
Weight, approx. (kg lb)	22 48.5
Power source	230 V, 50 Hz, 1,200 VA (LMA200PM-000EU) 120 V, 60 Hz, 1,200 VA (LMA200PM-000US)
Power consumption (VA)	1,200 max.

Accessories	Order no.
80 glass fiber pads	6906940
500 disposable pipettes	YAT01MA
5 rolls of printer paper, each with 20 m (65 ft.)	69MA30100

www.sartorius-mechatronics.com

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