

Mark 3 HP Moisture Analyzer

Modular Infrared Moisture Analyzer
with Quartz Heater

Advantages

- The alternative to the Karl-Fischer titration and oven drying methods
- Intuitive operation for fast learning
- Easy one-button measurement
- Robust and fast; optimal for routine operation
- Extended multi-module operation for parallel measurements



Product Description

Mark 3 is a flexible moisture analyzer system for labs and production facilities. Its high-resolution weighing system also makes the Mark 3 HP suitable for precisely analyzing the moisture and water content of very dry samples. As a result of this feature, the system is an economical and reliable alternative to Karl-Fisher titration.

Fast

Quick analysis times give you greater efficiency and let you adapt your production processes fast. On top of this, the Mark 3 will even meet the highest requirements of difficult materials. Its integrated two-phase drying allows the combination and separate evaluation of two different temperatures to determine, for example, the surface and total moisture content of a sample in just one measurement.

Reliable

The fully automatic calibration function ensures optimal measurement conditions – every time. In addition, an extensive range of security settings guarantees reliable results and 100% traceability.

Flexible

Whether your samples are solid, liquid or pasty, the Mark 3 HP provides optimal flexibility in analyzing a variety of samples with moisture contents ranging from 0.001% to 99.999%. With its optional modular add-ons of up to four heating units, it provides the best solution for every measuring task, as it enables even parallel

measurements of different samples – regardless of whether you need to perform three or 300 measurements a day.

Easy

Even inexperienced users can reliably operate the Mark 3 intuitively and easily. Thanks to effective password protection, access can be restricted to strictly measuring functions. One touch of a button is all it takes to start a measurement.

Areas of Application

- Foods
- Pharmaceutical products
- Plastics
- Chemical products
- Sugar
- Biomass & water purification
- Building materials
- Paper, pulp and composites
- Cosmetics
- Paints and coatings

Technical Specifications

Display of results	0.1 mg; 0.001%
Weighing capacity	100 g
Typical reproducibility of the weighing system	Starting at an initial sample weight of approx. 1 g: $\pm 0.1\%$ Starting at an initial sample weight of approx. 5 g: $\pm 0.02\%$
Method of measurement	Thermogravimetric; loss on drying
Recommended moisture range	0.001 – 99.999%
Heat source	Four parallel infrared quartz cylinders
Modular extension	Optional; up to 4 heater modules connectable
Data printer	Integrated thermal printer; 40 characters
Temperature range and adjustment	30 – 210°C in one-degree increments
Temperature steps	Programmable; one or two with selectable ramp rate
Standby temperature	Standby temperature selectable from 30 – 160°C
Temperature display	Display of target temperature and actual temperature during the measurement and in standby mode
Display modes	Weight loss in mg % moisture % dry weight % volatiles ppm moisture ppm dry weight concentration mg/L
Modes of operation	Standard, syringe, concentration or 2-phase drying mode
Endpoint determination	Timer mode; when value falls below a defined weight loss per time unit (%/min); trend shutoff
Program	300 programs; battery-backed memory
Data storage	Results with statistics of the last 999 measurements: average, SD, RSD, min and max
Temperature adjustment	Optional set for internal electronic two-point adjustment
Adjustment of the weighing system	Internal calibration weight or manual calibration and adjustment using an external weight
Ideal initial weight	Audio and visual display for programmable weighing of a sample to an initial target
Initial sample weight lock	Lockable initial sample weight for optimal repeatability
Pass-fail function	Programmable target value including limits; pass-fail information at the end of a measurement

Sample ID	Numeric, consecutive numbering, alphanumeric or turned off
User management	20 users can be stored with password protection
Password protection	Password protection against undesired adjustment of parameters
Languages	English, French, German, Italian, Portuguese, Spanish
Date and time settings	dd mm yy, mm dd yy, 12 h- or 24 h-format
Energy-saving mode	Integrated timer to switch the analyzer on and off; programmable sleep mode after a longer period of non-use
Display	Backlit VGA display
Parameter and data input	Sealed membrane keypad overlay with audible tactile feedback
Real-time curves	Real-time curves of the loss in weight (% or grams) as well of the temperature curve during and after the measurement
Acoustic signals	Key beeps; signal when ideal sample weight is reached; and end-of-measurement signal; selectable as On Off
System status indicator lights	Two tricolor LEDs (balance & heater) on front of heater module
Data input output	Serial and Ethernet; USB for service
Printout format	Configurable printout: selectable header (3 lines), analyzer info, operator, sample ID, calibration info, program name, program parameters, interval print, weight info, result and signature line
Weighing system	Monolithic weighing system for high-precision results
Balance spill protection	Reservoir under draft shield to collect liquids, powders or granules
Operating range	15 – 30°C (59 – 86°F) 10 – 85% rel. humidity; non-condensing
Power requirements	90 – 250 VAC 50 60 Hz, self-adjusting power supply
Housing dimensions (W × D × H)	41.3 × 49.5 × 23.5 cm (164" × 191" × 94"), modules combined
Weight	10 kg (22 lbs.), modules combined
Warranty	2 years

Order Numbers

LMA100-SET-P	Mark 3 HP moisture analyzer with printer, consisting of <ul style="list-style-type: none">– LMA100PA control module, incl. printer– LMA100PQ heater module for measurement (0.1 mg, 100 g)
Add-ons: LMA100PQ-000U	Mark 3 HP heater module for measurement (0.1 mg, 100 g) as a modular add-on to a Mark 3 HP (max. 4 heater modules)

Equipment Supplied

- Inter-module cable
- Power module cable
- Power cord
- Tweezers
- Sample pans
- Operating instruction manual
- Roll of paper

Accessories

A variety of consumables, cables and inspection, measuring and test equipment are available for the Mark 3 moisture analyzer, along with other accessories. We will be glad to advise you in the selection of appropriate accessories.



Mark 3 HP in parallel operation with 3 measuring units

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For further contacts, visit www.sartorius.com

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