

**Full-range moisture
analysis from a single
source**

MA 45

MA 50 | MA 100

MMA 30

Backweighers



Infrared, microwave, backweighing: The right analyzer for any application.

Now more than ever, rapid and accurate analysis of the moisture content plays a decisive role in the food, chemicals and pharmaceutical industries.

Fast production processes need analytical methods with shorter measuring times to enhance and even replace the traditional oven drying method.

For more than 25 years, Sartorius has been one of the leading suppliers of equipment for rapid gravimetric moisture analysis and has also made major contributions to the further development and propagation of this method.

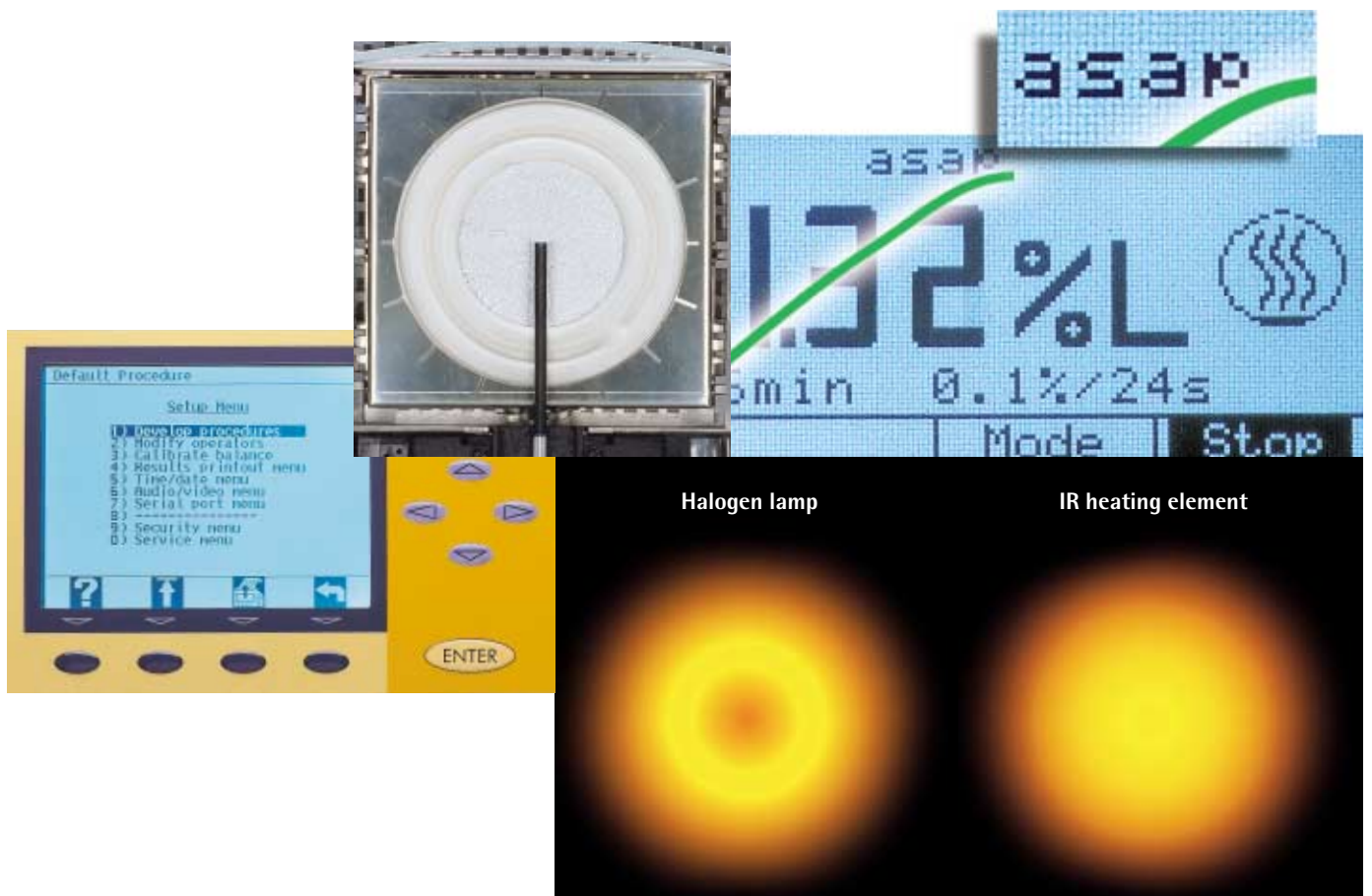
With its full range of products, Sartorius can offer the right solution for virtually any application:

Sartorius MA 45 –
The rugged infrared moisture analyzer: compact in shape and big in performance.

Sartorius MA 50|MA 100 –
The new standard in infrared moisture analysis: pacesetter in technology and design.

Sartorius MMA 30 –
Microwave moisture analyzers of the second generation: unbeatably fast for measuring a high moisture content.

Sartorius precision balances –
Featuring a differential weighing program as the ideal enhancement to the conventional oven drying method: perfectly easy operation and data management.



Sartorius MA 45.
The new benchmark in the compact range of moisture analyzers.
Maximum performance with minimum space requirements.

The new MA 45 is the next generation of the best-selling, field-proven Sartorius MA 30 used by several ten thousands of customers. When the MA 45 was on the drawing board, we retained the successful, space-saving design concept while decisively extending the analyzer's range of performance features. Just like its predecessor, the MA 45 is a rugged unit designed to help you make short work of routine moisture analyses in quality control applications covering incoming inspection and in-process control.

The entire concept of the MA 45 features practical accessories, such as the dust cover that comes standard with the analyzer or a special version of the MA 45 to meet the stringent FDA and HACCP requirements that ban the use of glass in production.



Sartorius MA 50|MA 100.
Flexibility and dynamics for infrared moisture analysis.
Analytical precision during measurement.

The MA 100 is the only infrared dryer in the world that features an analytical weighing system with 0.1-mg resolution and an EC type-approval certificate. Moreover, a motorized heating unit moves over the sample to open or close the sample chamber. This reduces interfering effects when a sample is placed on the pan or a measurement is started.

The pacesetting design enables the MA 50|MA 100 to achieve a measuring accuracy well beyond that provided by conventional infrared dryers. The unique asap® search routine automatically optimizes the operating parameters of the MA 50|MA 100 – thus saving you time in developing your own drying programs.

A retrofittable printer, a choice of various heat sources that can be interchanged as needed and an extensive offer of integrated software provide you with an unprecedented level of flexibility. Moreover, the moisture analyzers log all measurements and calibration and adjustment runs in compliance with GLP/GMP.



Sartorius MMA 30.
New momentum in microwave technology.
Unbeatably fast for measuring a high moisture content.

A microwave moisture analyzer is preferably used to measure a moisture content ranging from 4 to 100%, as found in dairy products and pharmaceuticals, for instance. With measuring times averaging just 40 to 100 seconds, the MMA 30 needs only a fraction of the time it takes conventional laboratory microwave dryers to measure the moisture content.

This benefit is provided by the cylindrical shape of the sample chamber and a newly developed, patented sensor technology. To determine the end point, the MMA 30 does not monitor a sample's loss of weight, rather its ability to absorb microwave rays and transform these into heat energy.

Once all dipolar water molecules have evaporated, the sample can no longer absorb microwave rays – and the measurement ends. To calculate the moisture and dry weight with a weighing resolution of 0.1 mg.

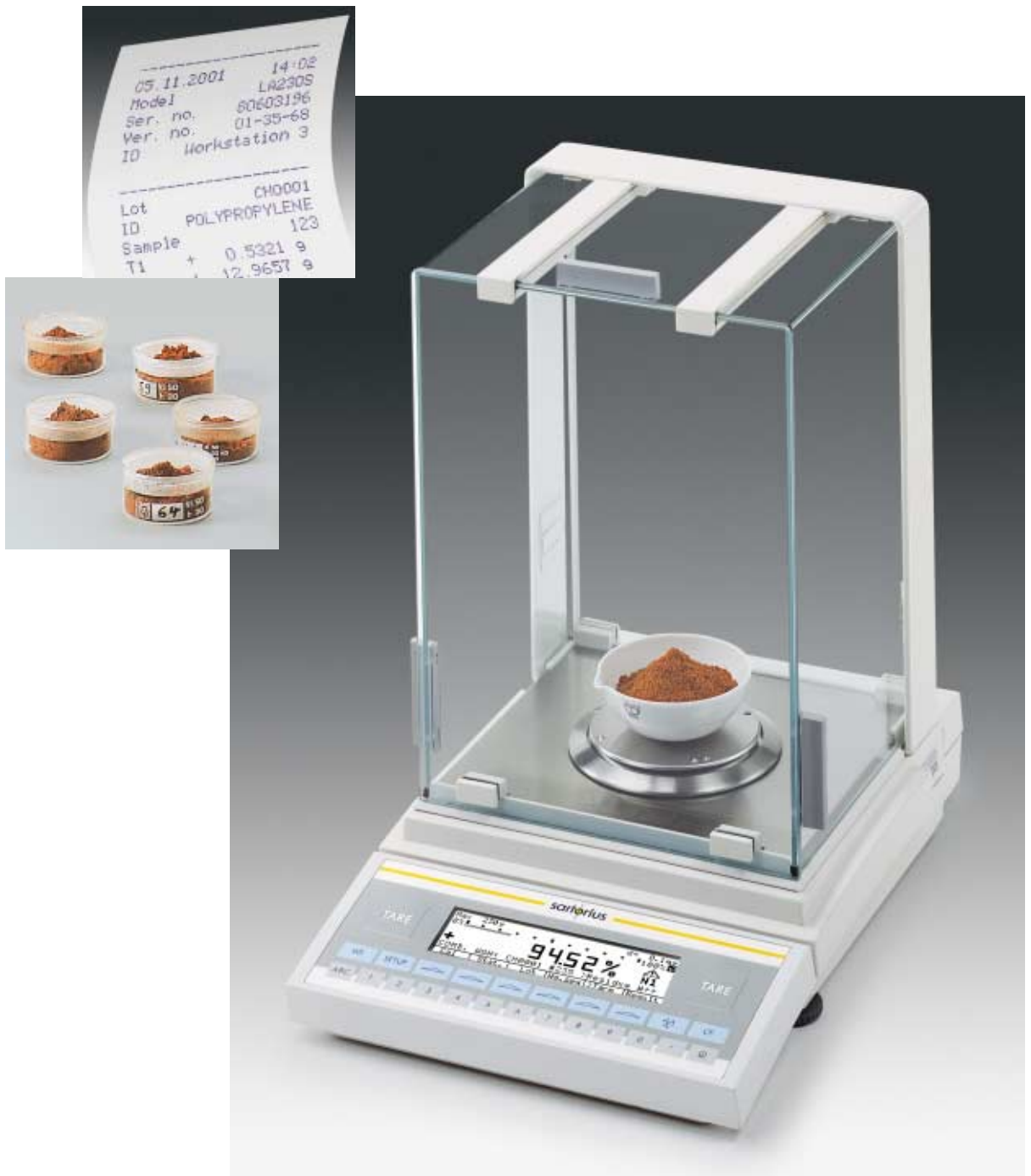


Sartorius Master^{pro} LA.
The ideal enhancement to the conventional oven drying method.
Perfectly easy operation and data management.

The Sartorius series of Master^{pro} LA balances with a built-in differential weighing program saves all data that are generated during taring, weighing-in and backweighing of samples.

These balances feature a memory capacity for managing the data of up to 999 samples. It does not matter in which sequence these measuring data are logged – Master^{pro} adapts to the individual needs of the user.

At the touch of a key, the results are calculated and a customized GLP/GMP-compliant printout is generated.



Specifications for MA 45 | MA 50 | MA 100

	MA 45	MA 50	MA 100
Max. weighing capacity (g)	45	50	100
Accuracy of the weighing system (mg)	1	1	0.1
Weighing system with EC type-approval certificate			•
Repeatability, average (%)			
for initial sample weight approx. ≥ 1 g	± 0.2	± 0.2	± 0.1
for initial sample weight approx. ≥ 5 g	± 0.05	± 0.05	± 0.02
Readability (%)	0.01	0.01	0.001
Display mode for results			
% moisture	•	•	•
% dry weight (solids)	•	•	•
% RATIO	•	•	•
g residue	•	•	•
g/kg residue		•	•
mg weight loss			•
Calculated value (measured value \times factor)			•
Analysis mode			
Fully automatic	•	•	•
Semi-automatic	•	•	•
Timer settings	1 \times 0.1–99 min.	1 \times 0.1–999 min.	3 \times 0.1–999 min.
Timer mode + fully/semi-automatic			2 \times time settings + automatic
asap® mode for parameter recognition		•	•
Heating unit			
Ceramic IR heating element (infrared)	•	• (optional)	• (optional)
Halogen lamp (infrared)		• (optional)	• (optional)
Later exchange of the heating unit based on the Plug & Dry® design		•	•
Access to the sample chamber via hinged cover		•	
Access to the sample chamber via motorized cover		•	•
Special version compliant with FDA/HACCP regulations with aluminum panels instead of glass panels	•		
Temperature range and settings			
from 30°C–230°C, adjustable in 1-degree increments		•	•
from 40°C–230°C, adjustable in 1-degree increments	•		
from 40°C–160°C, adjustable in 1-degree increments	• (MA 30 heating mode)		
Heating mode			
Standard drying	•	•	•
Quick drying		•	•
Gentle drying			•
Phase drying		1 time interval	3 phases
MA 30-compatible	•		
Built-in calibration weight			•
Operator guidance features			
Context-sensitive menu with alphanumeric interactive prompts and symbols	•	•	•
Text input for sample identification using soft-key prompts		•	•
Numeric keypad for sample identification and parameter input		•	•
Parameter input using soft-key prompts	•		
reproTEST for determining the repeatability of the weighing system			•
Number of program memories	3	5	30
Memory for data storage			
Statistics of the last 9,999 measurements		•	•
End point up to the next moisture analysis run	•	•	•
Parameter settings password-protected against unauthorized access	•	•	•
Manual input of tare weights		•	•
Data printer			
Integratable (optionally retrofittable)		•	•
External (optional)	•	•	•
GLP-compliant printout			
User-configurable		•	•
Inalterable standard configuration template	•		
Data interface port	RS-232C unidirectional	RS-232C bidirectional RS-485 optional	RS-232C bidirectional RS-485 optional
Bar code scanner can be connected		•	•
Digital input, adjustable function		1	1
Dust cover for keypad	•	•	•
Housing dimensions (mm)			
Width	213	350	350
Depth	320	453	453
Height	180.5	156	156
Weight, approx. (kg)	5.5	6.5	8.0

Accessories for MA 45 | MA 50 | MA 100

Order No.	MA 45	MA 50	MA 100
Disposable sample pans 80 units, aluminum, round, 90 mm Ø	6965542	6965542	6965542
Glass fiber filters for analysis of liquid, pasty and fatty samples, 80 units	6906940	6906940	6906940
Panel replacement set Aluminum panels for replacing glass panels to meet FDA/HACCP regulations (conversion kit)	YDS04MA	YDS03MA	YDS03MA
Windows®-compatible MoistureConnect software for data collection and for programming drying programs incl. interface cable, 9/25-pin	YMW02MA	YMW02MA	YMW02MA
Carrying case	YDB05MA	YDB03MA	YDB03MA
RS-485 data interface		Available on request	Available on request
Data printer Integratable External	YDP03-OCE	YDP01MA YDP03-OCE	YDP01MA YDP03-OCE
Ink ribbon cartridge for data printer	6906918	6906918	6906918
Paper rolls for data printer, 5 rolls, 50 m each	6906937	6906937	6906937
External calibration weight	1×30 g ± 0.3 mg YSS43-00	1×50 g (E2) YCW4528-00	1×50 g (E2) YCW4528-00
Temperature adjustment set with manufacturer's certificate	YTM03MA	YTM03MA	YTM03MA
Standard operating procedure (SOP)	YSL02MA	YSL02MA	YSL02MA

Specifications | Accessories for MMA 30

Capacity of the weighing system (g)	30
Accuracy of the weighing system (mg)	0.1
Repeatability, depends on sample (%) starting at an initial sample weight of approx. 3 g	up to ± 0.05
Readability (%)	0.01
Display mode for results	% moisture % dry weight % volatile components g residue calculated value (measured value \times factor)
Measuring range, average	4–100 % moisture
Analysis method	Timer + semi-automatic modes
Duration of analysis (depends on sample)	40–100 seconds on average
Sample heating	By microwave radiation, max. 450 W, adjustable from 40 to 100% in 10% increments
Operator guidance	Menu-driven, with alphanumeric prompts; alphanumeric sample identification and parameter input using soft-key prompts
Number of program memories	30
Memory for data storage	Storage of final value until next measurement Statistics of the last 300 measurements
Password protection against unauthorized changes to the program memories	Yes
Numeric keypad for sample identification and parameter input	Yes
Screen	Liquid crystal display (LCD) with backlighting, 5.9-inch VGA resolution
Data printer	Built-in thermal printer
GLP-compliant printout	User-configurable
Data interface ports	1 \times RS-232C, DB 9-pin, unidirectional 1 \times RS-232C, DB 25-pin, bidirectional for data transfer between two MMA 30s
Housing dimensions (mm)	Width 571 Depth 571 Height 304
Weight, approx. (kg)	30
Calibration weight	External, 50 g (included with the MMA 30)
Glass fiber filters for analysis of liquid, pasty and fatty samples (80 /pkg.)	6906940
Paper rolls for data printer, 5 rolls/pkg.	69M30100
Carrying case	YDB04MA
Standard operating procedure (SOP)	YSL02MA

Specifications | Accessories for Master^{PRO} LA

Model	Readability	Weighing capacity
LA120S	0.1 mg	120 g
LA230S	0.1 mg	230 g
LA230P	0.1/0.2/0.5 mg	60/120/230 g
LA310S	0.1 mg	310 g
LA130S-F balance for weighing filters	0.1 mg	150 g
LA1200S	0.001 g	1,200 g
LA620S	0.001 g	620 g
LA220S	0.001 g	200 g
LA620P	0.001/0.002/0.005 g	120/240/620 g
LA3200D	0.001/0.01 g	1,000/3,200 g
LA6200S	0.01 g	6,200 g
LA4200S	0.01 g	4,200 g
LA2200S	0.01 g	2,200 g
LA820	0.01 g	820 g
LA420	0.01 g	420 g
LA2200P	0.01/0.02/0.05 g	400/800/2,200 g
LA5200P	0.01/0.02/0.05/0.1 g	1,200/2,400/3,800/5,200 g

Moreover, all Master^{PRO} LA balances offer the following features:

- Backlit graphic display with full text support and variable digit sizes
- Fully automatic calibration/adjustment function, isoCAL
- Memory for ISO/GLP-compliant calibration/adjustment records
- 4 user-programmable lines, e.g., for entering the company's address
- Standard equipped with application programs for counting, weighing in percent, checkweighing, animal weighing, formulation, totalizing, calculation of weight values, density determination and statistics
- Time-controlled functions, such as automatic data printout at intervals according to a preset time

Performance features of the differential weighing program:

- Memory capacity for 999 samples in up to 100 lots
- Alphanumeric input of lot and sample names
- Taring, sample weighing and backweighing with up to 30 backweighs per sample
- Automatic and manual weight storage
- Evaluation of results with residue and loss (weight unit and %), calculation factor, RATIO values
- List function with display pages for lots, samples, values and results
- Statistical evaluation with statistics display page
- Printout as individual, backweighing or statistics record
- User-specific, configurable printout
- Interface port for bar code scanner

Accessories	Order No.
Data printer with date, time, statistics functions	YDP03-OCE
Ink ribbon cartridge for data printer	6906918
Paper rolls for data printer, 5 rolls, 50 m each	690693

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