



Evaluation of ambient air quality  
by determining the PM 2.5 and PM 10  
mass concentration of suspended particulate matter



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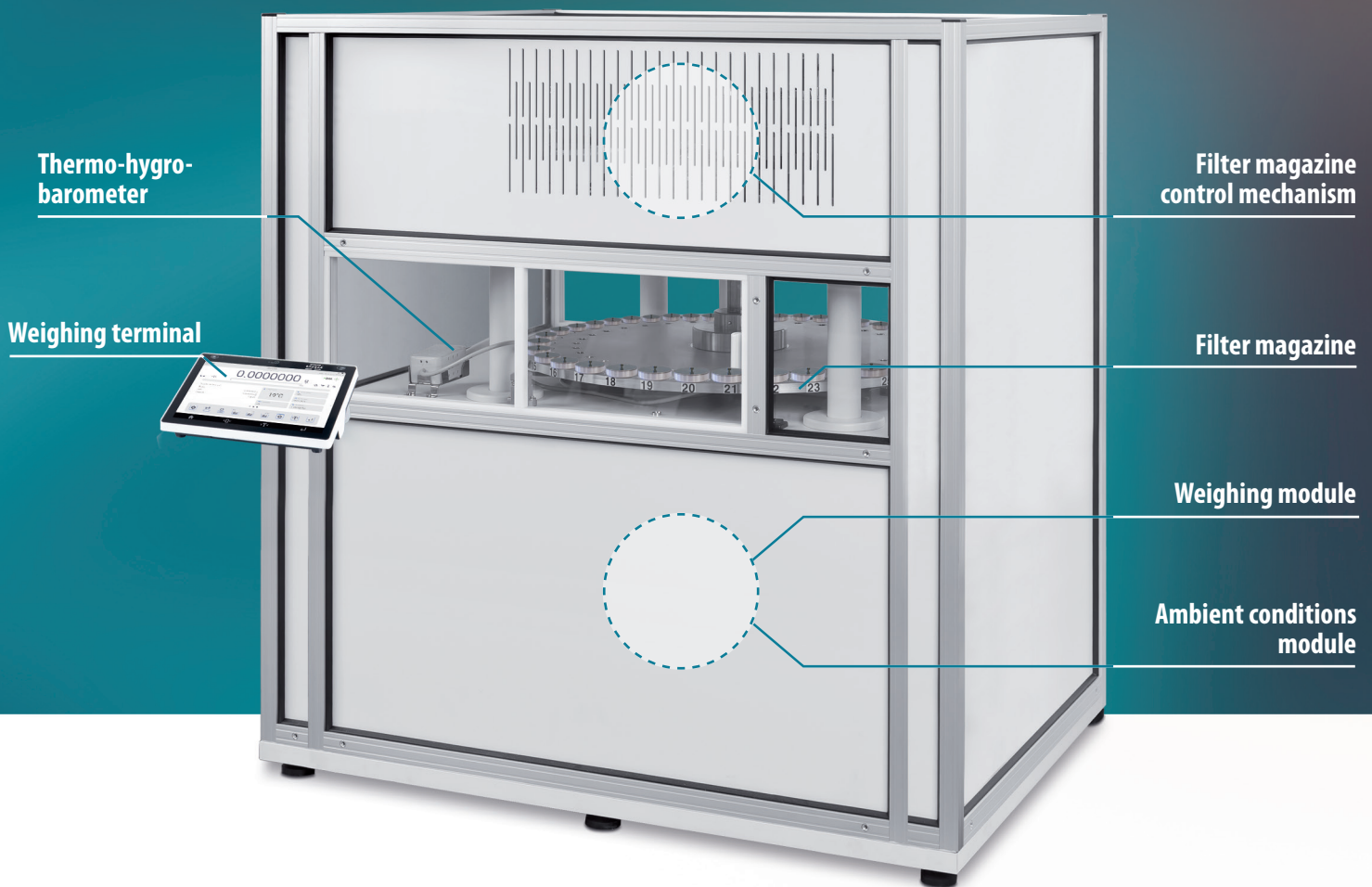
## UMA 2.5Y.FC

FILTER MASS MEASUREMENT AUTOMATION

# UMA | Automatic record of mass changes for max 24 filters

Automatic weighing system has been designed to test mass changes of filters made of quartz glass fibre, glass fibre, teflon and teflon covered with glass fibre. Mass measurement is carried out with readability of 1  $\mu\text{g}$  or 0.1  $\mu\text{g}$ . The weighing system enables conditioning filters in accordance with PN-EN 14907 and PN-EN 12341 standards.

The UMA weighing systems, due to the elimination of the human factor, temperature changes and air drafts, guarantee excellent measurement repeatability.



## Direct Measurement of Ambient Conditions in a Weighing Chamber

The UMA weighing system is equipped with a high-class thermo-hygro-barometer allowing to test ambient conditions in real time. The characteristic feature of the device is high readability of pressure (0.001 hPa), humidity (0.01%) and temperature (0.001  $^{\circ}\text{C}$ ).

## Real-Time Measurement of Vibrations

With vibration sensor placed inside the electronics, the UMA weighing systems analyse and identify vibration sources. The sensor helps to determine whether the recorded vibrations influence the measurement result or not.



*Each filter during conditioning is stored in a steel container*



*Filter identification is realised using a combination of a digital code of a measuring workstation, and the EAN code of a weighing container (option).*



*Mass measurement accuracy is periodically controlled using certified mass standard.*

## Weighing range up to 2.1 g Repeatability of 0.2 µg

### Effective and Excellent Measurement

The UMA weighing system is a first-class solution for professional mass measurement. Dynamic control and correction of mass indications both ensure fast and stable weighing regardless of the weighed filter type.

### Weighing Analysis Stability

Uncompensated electrostatic charges are removed from the filter structure using DJ-02 ionizer integrated with the construction of the UMA weighing system. Multi-step regulation of ion emission optimizes ionizer operation to the real needs of weighing analysis.

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### Effective Weighing Analysis

Full automation of the weighing cycle, thanks to the elimination of the 'human factor', is a guarantee of measurement repeatability impossible to be obtained in case of manual weighing. Remote programming of measurement processes significantly increases operation efficiency.

### Dedicated Software

Ergonomic software supported by an independent RMCS application allows to manage time and comparison test plans of each filter or filter series. Summary reports and report components are defined by the system administrator.

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### Metrological Control

Periodically, correctness of weighing system operation may be verified via a certified mass standard of weight similar to the weight of test filters.

### Stable Mechanical Design

The UMA 2.5Y.FC automatic weighing system is equipped with an integrated anti-vibration table ensuring the greatest stability of mass measurements.

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### Ambient Conditions Module

The ambient conditions module is housed inside the bottom part of the weighing system. This results with a laminar air flow that does not disturb the ongoing filter mass measurement. The range of temperature and humidity changes is automatically forced in accordance with the values programmed via device terminal.



The weighing system is controlled using modern terminal with 10" colour graphic touch screen.



Special light system inside the chamber facilitates precise loading of mass standards and helps to find and remove potential impurities.



## UMA 2.5Y.FC

Maximum capacity [Max]	2.1 g
Readability [d]	0.1 µg
Repeatability for small load *	0.2 µg (1 mg ÷ 1 g); 0.3 µg (1 g ÷ 2 g)
Repeatability for nominal load *	0.4 µg
Stabilization time	30 s
Adjustment	Internal
Electric compensation range	0 g ÷ +2.1 g
Internal supplementary weights	–
Eccentricity (for test weight)	0 µg
Filter magazine	24
Display	10" colour touch screen
Communication interfaces	USB-A ×2, USB-C, HDMI, Ethernet, Wi-Fi®, Hotspot
Operating temperature	+15 ÷ +30 °C
Operating temperature change rate	±0.5 °C / 12 h (± 0.3 °C / 4 h)
Relative humidity change rate	±2% / 4h
Relative humidity **	40 ÷ 60%
Transport and storage temperature	–20 ÷ +50 °C
Weighing pan dimensions	ø 20 mm
Overall dimensions (D×S×W)	900 × 535 × 585 mm

\*Repeatability is expressed as a standard deviation from 10 cycles of mass standard weighing. | \*\*Non-condensing conditions | Wi-Fi® is a registered trademark of Wi-Fi Alliance.