

Emission Testing



Filter Weighing

Compliant processes

Comprehensive solutions

Traceable results

Filter Weighing Solutions For Emission Testing

METTLER TOLEDO

Emission Testing To Control Environmental Quality

When complying with regulations, the smallest amount of Particulate Matter needs to be weighed accurately.

Air quality needs to be monitored and tested to ensure emissions do not exceed global standards.

METTLER TOLEDO's unmatched expertise and reputation offers you unique, comprehensive solutions to ensure your results are always accurate and in compliance with regulations.



Environmental Emissions

Why do we test for environmental emissions?
Studies have shown that over 1.6 million people die from respiratory diseases from air pollution each year.



Global Regulations

Nitrogen Oxides and Particulate Matter in the air caused by industrial emissions are linked to health hazards. Global regulations exist to ensure we are all working to improve the quality of the air we breathe.



Industries

Increased output from manufacturing, automotive and power generation plants has led to tighter regulations and more testing requirements.



Processes

Particulate Matter is captured on filters which have been pre-weighed in the laboratory, sent for processing and then back-weighed in the laboratory again. Sample and data integrity are paramount for accurate results.



Challenges

Fragile samples are difficult to weigh accurately, and often static charges can influence weighing results. The two-stage weighing process must be carefully monitored to ensure mistakes do not occur.



Clever Solutions

METTLER TOLEDO's dedicated filter kits and antistatic solutions provide optimum weighing conditions. LabX software prompts and guides you through your process, maintains sample identification and calculates results, securely storing your data.

Filter Weighing Solutions

From 25 to 70 mm

Smallest Particulate Matter samples demand the highest accuracy.

More stringent regulations mean smaller sample sizes which in turn require more accurate balances. Our micro and ultramicro balances with dedicated filter kits and accessories provide the optimum solution for compliance with the latest regulations.



Filters up to 70 mm diameter

Simply exchange the standard weighing pan for the 50 mm Filter Set or the Filter Kit Micro to convert the XPR microbalance into a dedicated filter weighing system.



Self-centering filter pan

To conform to certain regulations, filters must be centrally positioned when weighed. The micro filter kit includes two filter pans (47 & 70 mm) to accurately hold filters and eliminate eccentric errors.



Ergonomic operation

The glass lid allows full visibility to enable secure and precise placing and removal of the filter on the filter pan. Left or right hand motorized opening of the door can be operated by the hands-free SmartSens infrared sensors.



Antistatic solutions

Static charge can significantly affect weighing results, particularly when using PTFE filters. A comprehensive range of antistatic solutions enable you to weigh accurately and eliminate these potential errors.



SmartView Terminal

The conveniently-placed SmartView dual terminal allows you to concentrate on the weighing process. SmartView provides all the necessary functions for weighing: zero, tare, door opening/closing, and add result.



Secure Processes

The GWP Approved function actively monitors the balance status and ensures you always weigh within the safe weighing range. The on-screen icon is your reassurance of accurate, reproducible results.

Filter Weighing Solutions

From 50 to 150 mm

Quick and Easy Dust Mass or Particulate Matter Determination

High intensity dust samples, such as from in-stack industrial filtrations, are measured conveniently and efficiently with Excellence analytical balances. Easily convert your Excellence analytical balance into a dedicated filter weighing solution using the innovative 110 mm filter kit or 150 mm ErgoClip.



Integrated solutions

Improve the quality of your results – from stand-alone solutions to completely integrated systems:

- barcode data input
- electrostatic charge elimination
- LabX data processing



110 mm filter kit

The 110 mm filter kit for Excellence analytical balances enables easy and efficient weighing of larger filters. The filter grid pan acts as a faraday cage, reducing electrostatic influences and enabling fast and precise weighing results.



ErgoClip 150 mm

For larger filters, the 150 mm ErgoClip facilitates precise and consistent filter placement, thereby improving repeatability and quality of results.



Ergonomic operation

The two SmartSens infrared sensors can be programmed to zero or tare the balance, open the motorized doors or print results for hands-free operation.



Traceable results

From the LabX audit trail facility to user management, calibration management and CarePac calibration weights, secure and traceable results are guaranteed.



Smart accessories

A range of smart accessories are available:

- barcode scanning
- asymmetric filter tweezers
- Antistatic solutions
- dedicated filter kits
- CarePac calibration weights
- LabX software solutions

Traceable Results With LabX Software Solutions

Allow LabX to guide your process step by step on the balance terminal.

From barcode entry, LabX securely controls your samples, calculates your results including Air Buoyancy Correction, and prepares your customized reports. Data is securely stored, can be backed up and exported into LIMS systems.



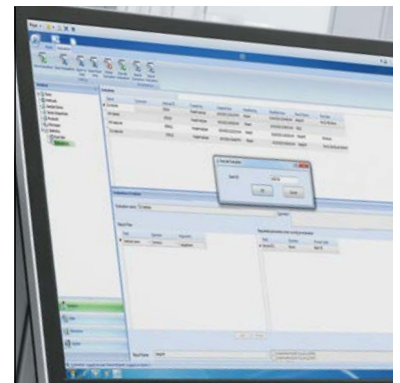
Data collection

Easily enter your samples into LabX with a barcode scanner. Automatic data capture means secure and efficient data handling and no transcription errors.

| Method name | Sample overall state | Sample tolerance range |
|-----------------------------------|----------------------|------------------------|
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d)144 | OK | 71+ |
| Alcohol Determination (d)144 | OK | 71+ |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d)144 | OK | 72+ |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Adjustment with Air and Water (d) | OK | Undefined |
| Alcohol Determination (d)144 | OK | 72+ |
| Alcohol Determination (d)144 | OK | Nominal value |
| Alcohol Determination (d) | OK | Nominal value |
| Alcohol Determination (d)144 | Not OK | 72+ |

Secure and traceable data

All data is automatically stored in a secure database to ensure traceability. Information is easily accessed to provide a full overview of activities at any time. Data can be automatically sent to other lab systems



Guided user process

Ensure process security with step-by-step user guidance on the instrument touchscreen. Full User Management allows Administrator control and traceability.



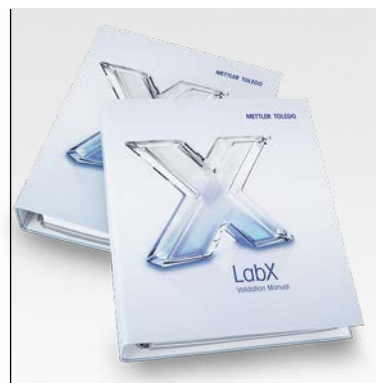
Secure results

Built-in security features such as electronic signatures and user management options assist you to comply with regulations and ensure your lab is audit-ready at any time.



Customized workflows

Your customized processes and methods can be automated by LabX. Results data can be integrated into your LIMS system maintaining complete data integrity and traceability.

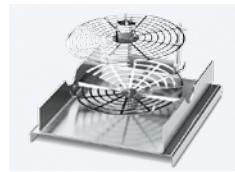


Software Validation

METTLER TOLEDO supports you in the regulated environment by installing and validating LabX® systems. Pre-written Validation packs and qualified technicians simplify regulatory compliance.

Accessories

For Professional Filter Weighing



| | Filter set 50 mm | Filter kit micro | Large Filter Weighing Kit | ErgoClip Filter |
|------------------------|---|-----------------------------------|----------------------------------|-------------------------------|
| Filter size | Ø 20–50 mm | Ø 30–70 mm | Ø max.110 mm | Ø 110–150 mm |
| Compatible with | XPR/XP/XS micro and ultra microbalances | XPR micro and ultra microbalances | XPE/XP/XS analytical balances | XPE/XP/XS analytical balances |
| Part number | 00211214 | 30300922 | 11140000 | 11140185 |



| | AntiStatic kit microbalance | Universal AntiStatic kit large | Compact Integrated AntiStatic kit | LabX Starter Pack Express |
|------------------------|---|---------------------------------------|--|----------------------------------|
| Compatible with | XPR/XP/XS micro and ultra microbalances | All micro and analytical balances | XPE analytical balances | XPR/XPE/XP/XS |
| Part number | Kit (stand plus one ionizer): 30215452 Optional second ionizer: 30300921 | 11107767 | 30090337 | 11153120 |



| | Asymmetric tweezers | CarePac | 2 g E2 class cylindrical calibration weight | ClimaLog30 Climate Station |
|------------------------|----------------------------|----------------|--|-----------------------------------|
| Compatible with | All | All | Micro and ultra microbalances | All |
| Part number | 11122131 | on request | 11122167 | 30078423 |



| Balance | XPR2U | XPR6UD5 | XPE105 | XS105DU |
|-----------------------------------|-----------------|----------------|-----------------|-------------------|
| Article Number | 30279196 | 30279285 | 30087635 | 11106009 |
| Maximum load | 2.1 g | 6.1 g | 120 g | 120 g (41 g fine) |
| Readability | 0.1 µg | 0.5 µg | 0.01 mg | 0.1/0.01 mg |
| Repeatability (nominal) (sd) | 0.25 µg (2 g) | 0.7 µg (5 g) | 0.03 mg (100 g) | 0.1 mg (100 g) |
| Repeatability (5% load) (sd) | 0.2 µg | 0.5 µg | 0.015 mg | 0.02 mg |
| Linearity deviation | 1.5 µg | 4 µg | 0.1 mg | 0.2 mg |
| Eccentricity (test load) | 0.0025 mg (1 g) | 0.003 mg (2 g) | 0.12 mg (50 g) | 0.3 mg (50 g) |
| Typical repeatability with filter | 0.4 µg | 1.0 µg | 0.03 mg | 0.04 mg |

Features

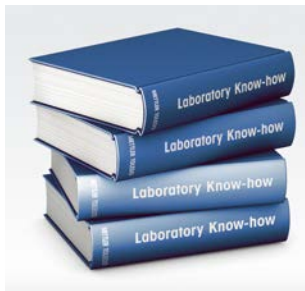
| | | | | |
|----------------------------|---|---|---|---|
| StatusLight™ | • | • | • | – |
| SmartSens infrared sensors | • | • | • | – |
| LevelControl | • | • | • | – |
| Motorized door | • | • | • | – |
| LabX compatible | • | • | • | • |
| Internal adjustment | • | • | • | • |

Filter kit compatibility

| | | | | |
|------------------------------|---|---|---|---|
| Filter set 50 mm | • | • | – | – |
| Filter kit micro 30–70 mm | • | • | – | – |
| Filter kit analytical 110 mm | – | – | • | • |
| ErgoClip filter 150 mm | – | – | • | • |

Benefit From Our Weighing Expertise

With decades of experience in laboratory weighing, METTLER TOLEDO can offer you a wide range of online learning resources. Take advantage of our expertise to enhance your weighing know-how and make the most of your balance. Check out the documentation on our internet page for a range of relevant materials.



Laboratory Expertise

Valuable know-how is at your fingertips on our competence pages. Learn about:

- USP Revisions
- Electrostatic Influences
- Calibrating Your Weighing Device

► www.mt.com/lab-expertise

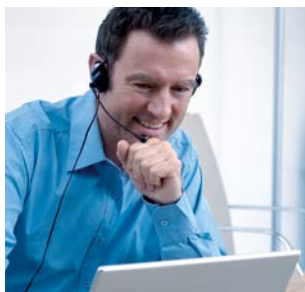


eLearning

Online training is a cost effective way to train new employees and fulfill GLP/GMP/ISO re-training requirements. Get going with:

- USP Compliance
- Lab Balances – External Influences and Cleaning

► www.mt.com/lab-elearning



On-demand Webinars

Learn directly from our weighing experts and guest speakers. It's easy to register.

For starters, we recommend:

- Minimizing Out-of-Specification Errors
- Good Weighing Practice
- Calibration of Laboratory Instruments

► www.mt.com/webinars

www.mt.com/filter

For more Information

METTLER TOLEDO Group

Laboratory Division

Local contact: www.mt.com/contacts

Subject to technical changes

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