Comprehensive Security
Has no Alternative

Excellence Plus XP
High-performance
Micro and Analytical balances
from METTLER TOLEDO

Excellence Balances
We Understand Your Safety Concerns
And We Have the Solution

Three innovations provide comprehensive weighing security
- SmartSens
- SmartGrid
- SmartScreen

METTLER TOLEDO is changing the world of analytical balances. SmartSens, SmartGrid and SmartScreen – three innovations combined in a single balance – provide comprehensive weighing security. They provide maximum user protection, unparalleled measurement performance, full data security and seamless traceability.

The result is secure processes, higher speed and lower costs.

Excellence Plus XP: Improved performance with more security.

SmartSens for hands-free draft shield operation
Open sesame! Thanks to the SmartSens infrared sensors, you can weigh without touching the balance. Tare, open the door, close the door, weigh, print. Everything is done automatically with a wave of your hand. You can focus completely on the sample, and weigh valuable or toxic substances safely and without spilling.

Excellence Plus XP with SmartSens:
Keeping you as safe as your samples.
Height-adjustable inner draft shield:
The smaller the weighing chamber, the less air turbulence and the faster you get stable results. Samples can also be acclimatised in a protected area on top of the inner draft-shield.

Minimum risk of contamination, maximum protection for your sample:
Each panel of the draft shield can be removed easily and is cleaned in a flash.

SmartSens
Allows weighing without touching the balance. With complete focus on the sample, valuable or toxic substances are weighed safely and without spilling.
Assorted Tare Containers?
Weigh Directly and Fast.

SmartGrid is the key to high speed and secure sample handling
SmartGrid, the unique grid weighing pan, successfully minimizes the effects of air turbulence in the weighing chamber. Stabilization times are dramatically shorter so you receive measuring results faster. Overfilling is easily avoidable and minimum weights are even smaller, which pays off when it comes to valuable substances. The ErgoClips allow you to securely fasten any type of tare container so that none of your sample is wasted.

Excellence Plus XP with SmartGrid: Safe weighing and fast results. Double your savings thanks to higher sample yield and higher productivity.
But if anything ever does go wrong, SmartGrid ensures that spilled substances simply fall into the tray underneath. Spills will not falsify your weighing result and can simply be thrown away.

ErgoClips allow secure placement of volumetric and round-bottom flasks, glass and plastic test tubes as well as disposable weighing pans.

Distortion of the weight value due to statically charged tare containers is practically prevented by the Faraday-shield effect of the grid basket.
Secure Operation Guaranteed – for Smooth Processes and Flawless Data

**SmartScreen guarantees complete control**

SmartScreen is the brain behind the Excellence Plus XP. Multilingual and color-coded. Easy-to-use and self-explanatory. With touchscreen and profiles configured individually for up to eight users or jobs, SmartScreen saves time and helps prevent mistakes.

**Excellence Plus XP** with SmartScreen: Extremely easy to operate. For the highest data security and full regulatory compliance.
Clear documentation for perfect traceability. What is weighed, when, how and by who can be completely configured and documented, protecting users, data and processes.

More personalized in every way. Up to eight users can save their individual settings in their own languages, including color profile, and protect them against unauthorized access.

Preconfigure up to eight jobs. With defined fault tolerances for each job and password protection. We have eliminated the danger of unwanted modifications. You can also change quickly from job to job, to avoid unproductive time.
**XP Analytical Balance – Synergies par Excellence**

Measurement certainty, user safety and data security combined with high-speed and maximum operating convenience.

Communication is everything.
Menu guidance, input and output in seven languages:

- German
- English
- French
- Spanish
- Italian
- Russian
- Japanese

▶ [www.mt.com/XP-analytical](http://www.mt.com/XP-analytical)
Spills contained.
Spilled substances are caught by the tray underneath the weighing pan and are easy to dispose of.

Completely protected.
Thanks to the fastening of the grid weighing pan at the rear of the weighing chamber, the two adjustment weights are completely protected against contamination by a chrome steel cover.

Individual operation.
The top panel and each side panel of the glass draft shield is motorized and can be opened individually.

Flexible interfaces.
Equipped as standard with a sealed RS232 interface and a slot for a second, optional interface:
- Bluetooth
- Ethernet
- LocalCan
- RS232
- PS/2
- USB (with USB Convertor cable)

30% smaller sample sizes.
Repeatability is increased by 30% thanks to the integrated temperature control system (ITC).

Status display.
The green illuminated symbol shows that SmartSens is activated and set to “Print”.

Flexible interfaces.
Equipped as standard with a sealed RS232 interface and a slot for a second, optional interface:
- Bluetooth
- Ethernet
- LocalCan
- RS232
- PS/2
- USB (with USB Convertor cable)
XP Micro Balance –
for the Smallest Sample Quantities

- World-leading measurement performance: 52 g x 1 µg
- Minimum sample weight according to USP as low as 2.1 mg
- Direct-dosing of small samples into large tare containers
- No sample transfer means no loss of valuable substances

When it comes to weighing small samples, we leave nothing to chance. Our XP56 micro balance, offering a world-leading capacity of 52 g with 1 µg readability, allows minimum sample weights according to USP as low as 2.1 mg – for maximum yield of your substances and substantial cost savings.

Moreover, XP Microbalances enable you to dose your samples directly into the tare container which helps avoid sample transfer errors. The result: maximum measurement certainty and reduced contamination risk.

Easy cleaning
The inner draft shield is quick and easy to dismantle.

www.mt.com/micro
ErgoClip Basket micro and ErgoClip Flask micro
For secure positioning of various reagent test tubes and measuring flasks. The ErgoClips can be turned to any angle on either side making it easier to dose directly into narrow container openings.

MinWeigh Door micro makes it possible to dose without opening the interior windbreak. Weighing directly in the required container via a narrow opening enables stable results to be achieved in the least possible time.
Regulatory Compliance
Through Built-in Warning Functions

- Eliminate risk factors with Balance Check
- User Management
- proFACT automatic internal adjustment
- MinWeigh
- LevelControl

Precise weighing is the backbone of many laboratory processes. Non-compliance with defined maximum limits can have disastrous consequences in regulated areas. Measurement series must be repeated, and valuable substances are wasted. Inaccurate values can even cause production to stop. Unnecessary costs are incurred.

Thanks to the built-in warning functions MinWeigh and LevelControl, the User Management function and proFACT automatic internal adjustment, risk factors are eliminated, keeping you within regulatory limits.

Excellence Plus XP: Ensuring your security.

Balance risk factor?
BalanceCheck and proFACT automatic adjustment.
Receive automatic prompts to validate the measuring accuracy with an external weight – whenever the SOP calls for it. Between test intervals, proFACT automatic adjustment ensures that you never exceed your maximum limits. It also stores the last 50 adjustments in the History File.

OIML weights
For the systematic control of inspection, measuring, and test equipment we offer a comprehensive assortment of METTLER TOLEDO OIML weights. (ASTM weights available in the USA.)

www.mt.com/weights
SOP device balances
Test, Maintain, Monitor
A. At least 60 min. before calibration
   Switch on balance
B. Clean weighing platform. Observe acclimatisation time
C. Allow certified control masses to acclimatise
D. Check and if necessary correct levelling
E. Close draft shield
F. Set display to “Zero”
G. Certified control mass

Human risk factor?
MiniWeigh warning function. Does your weighing result fall below the defined fault tolerance? MiniWeigh uses the unmistakable red-colored display to warn you that the result is invalid.

User Management
Individual access rights can be provided for each application and up to eight users. Applications and users that are not being used can be disabled. Faulty operation is ruled out.

ProFACT
Freely configurable time and/or temperature-controlled internal adjustment and lineearisation with two built-in weights.

Environment as a risk factor?
LevelControl warning function. Was the balance jarred when it was cleaned? Is it inaccurate because it’s no longer level? LevelControl gives off an acoustic warning signal and shows you, in the display, exactly what you need to do to level the balance.
LabX Software – the Weighing Assistant

- Easy data collection
- Full user guidance
- Calibration management
- Full traceability
- Export to Excel, LIMS…

LabX pro supports 21 CFR Part 11 and network integration

LabX pro balance is a powerful, PC-based solution for managing and controlling balances. The software allows all balances to be fully networked and enables seamless integration into laboratory information systems (LIMS). LabX pro collects all relevant data and allows access to the settings and status of all balances from any PC in the network. Thanks to rapid access, users can login to the system directly from the balance and carry out weighing jobs without touching a PC. Of course LabX also fully supports compliance with 21 CFR part 11.

LabX light – Weighing data management made easy

LabX light balance is a user-friendly solution for connecting a single balance to a PC. In addition to the many data collection options, LabX light balance also offers convenient functions to set and control balance settings. If the collected data needs to be processed further in another application such as Excel, of course LabX offers the appropriate interfaces.
Integrable anti-static kit

The same weighing sample but different weight values in the display? The phenomenon is well-known and the explanation is usually a simple one: electrostatically-charged samples lead to inaccurate results. The integrable ioniser immediately neutralises the electrostatically-charged object. The forces that give false weighing results are eliminated.

Fully integrable, no swirling, extremely fast

The fully integrable ioniser generates positively and negatively-charged ions. These immediately eliminate the electrostatic charge that causes the interference. The system does not swirl any of the weighing material as may be the case with other products available in the market. Toxic substances no longer pose a threat to the user. Cross-contamination of samples is prevented. The anti-static kit guarantees precise weighing under the most severe conditions.

www.mt.com/labx
**Standard equipment**

- SmartSens, Sensor for hands free operation
- SmartGrid, grid weighing pan for fast and stable results
- SmartScreen, color display for safe and user-friendly operation
- ErgoClip Basket small, or ErgoClip Basket micro (with models XP56/XP26). Holder for tare containers for ergonomic weighing
- MiniWeigh warns if the minimum weight is not reached
- (Minimum weight determined on site by service technician)
- User Management for granting access rights
- LevelControl warns when the balance is not levelled
- BalanceCheck, prompts automatically for validation with external weights
- ProFACT, fully-automatic temperature and/or time-controlled internal adjustment and linearisation

- Seven different applications with user guidance (incl. density determination, statistical analysis, formulation and differential weighing)
- Individual reports can be defined with up to 4 IDs
- Built-in RS232 interface and two auxiliary outlets
- Slot for second interface (7 options)
- Height-adjustable inner draft shield
- Motor-driven draft shield doors
- Completely dismountable draft shield for easy cleaning
- Terminal can be positioned separately from the balance
- Protective cover for the terminal
- Production certificate

**ErgoClips for XP Analytical balances**

- ErgoClip Round Bottom Flask 11106746
- ErgoClip Basket Small 11106747
- ErgoClip Weighing Boat 11106748
- ErgoClip Flask 11106764
- ErgoClip Tube 11106784
- ErgoClip Titration Basket 11106883

**XP Analytical balances**

<table>
<thead>
<tr>
<th>Technical data (Limit Values)</th>
<th>XP105DR</th>
<th>XP205</th>
<th>XP205DR</th>
<th>XP204</th>
<th>XP504</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum capacity, fine range</td>
<td>120 g</td>
<td>220 g</td>
<td>220 g</td>
<td>220 g</td>
<td>520 g</td>
</tr>
<tr>
<td>Readability (sd)</td>
<td>0.1 mg</td>
<td>—</td>
<td>0.1 mg</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Readability, fine range</td>
<td>0.01 mg</td>
<td>—</td>
<td>0.01 mg</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Repeatability (of nominal load) (sd)</td>
<td>0.06 mg (100 g)</td>
<td>0.03 mg (200 g)</td>
<td>0.06 mg (200 g)</td>
<td>0.07 mg (200 g)</td>
<td>0.12 mg (500 g)</td>
</tr>
<tr>
<td>Repeatability (of low load)</td>
<td>0.05 mg (10 g)</td>
<td>0.015 mg (10 g)</td>
<td>0.05 mg (10 g)</td>
<td>0.05 mg (10 g)</td>
<td>0.1 mg (10 g)</td>
</tr>
<tr>
<td>Linearity</td>
<td>0.015 mg (10 g)</td>
<td>—</td>
<td>0.015 mg (10 g)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Excentric load deviation (test load) (sd)</td>
<td>0.2 mg (50 g)</td>
<td>0.2 mg (100 g)</td>
<td>0.25 mg (100 g)</td>
<td>0.25 mg (100 g)</td>
<td>0.4 mg (200 g)</td>
</tr>
<tr>
<td>Sensitivity offset</td>
<td>4x10⁻⁶ Rnt</td>
<td>2x10⁻⁶ Rnt</td>
<td>2,5x10⁻⁶ Rnt</td>
<td>3x10⁻⁶ Rnt</td>
<td>3x10⁻⁶ Rnt</td>
</tr>
<tr>
<td>Sensitivity temperature drift (°C)</td>
<td>1x10⁻⁵°C Rnt</td>
<td>1x10⁻⁵°C Rnt</td>
<td>1x10⁻⁵°C Rnt</td>
<td>1x10⁻⁵°C Rnt</td>
<td>1x10⁻⁵°C Rnt</td>
</tr>
<tr>
<td>Sensitivity stability (a)</td>
<td>1x10⁻⁴ Rnt</td>
<td>1x10⁻⁴ Rnt</td>
<td>1x10⁻¹ Rnt</td>
<td>1x10⁻¹ Rnt</td>
<td>1x10⁻¹ Rnt</td>
</tr>
</tbody>
</table>

Typical values for calculating the measurement uncertainty

- Repeatability (sd) | 0.04 mg ± 1x10⁻⁵ Rgr | 0.007 mg ± 6,4x10⁻⁶ Rgr | 0.04 mg ± 5x10⁻⁶ Rgr | 0.04 mg ± 5x10⁻⁶ Rgr | 0.04 mg ± 6,4x10⁻⁶ Rgr |
- Repeatability, fine range (sd) | 0.007 mg ± 1,5x10⁻⁷ Rgr | — | — | — | — |
- Differential linearity deviation (sd) | √(2x5x10⁻⁷ g Rnt) | √(2x5x10⁻⁷ g Rnt) | √(1x2x10⁻⁷ g Rnt) | √(2x10⁻⁷ g Rnt) | √(5x10⁻⁷ g Rnt) |
- Differential eccentric load deviation (sd) | 1x10⁻⁶ Rnt | 5x10⁻⁷ Rnt | 5x10⁻⁷ Rnt | 6x10⁻⁷ Rnt | 5x10⁻⁷ Rnt |
- Sensitivity offset (sd) | 1x10⁻⁶ Rnt | 5x10⁻⁷ Rnt | 8x10⁻⁷ Rnt | 8x10⁻⁷ Rnt | 6x10⁻⁷ Rnt |
- Minimum weight (according to USP) | 21 mg ± 4,5x10⁻⁶ Rgr | 21 mg ± 1,8x10⁻⁶ Rgr | 21 mg ± 3,8x10⁻⁶ Rgr | 120 mg ± 1,5x10⁻⁶ Rgr | 120 mg ± 1,8x10⁻⁶ Rgr |
- Minimum weight (a) | 1,4 mg ± 3,0x10⁻⁶ Rgr | 1,4 mg ± 1,2x10⁻⁶ Rgr | 1,4 mg ± 2,4x10⁻⁶ Rgr | 8 mg ± 1x10⁻⁶ Rgr | 8 mg ± 1,2x10⁻⁶ Rgr |
- Setting time | 1.5s | 2.5s | 1.5s | 1.5s | 1.5s |
- Setting time, fine range | 4s | 6s | 4s | 4s | 4s |

1) According to OIML R76
2) In temperature range 10 – 30 °C
3) Stability of sensitivity as from first installation with proFACT

sd: Standard deviation
Rgr: Gross weight
Rnt: Net weight (of sample)
a: Year (annum)

**For more information visit**
- [www.mt.com/XP-analytical](http://www.mt.com/XP-analytical)
- [www.mt.com/micro](http://www.mt.com/micro)

**Connection guaranteed**

Whether Bluetooth, Ethernet or simply RS232. The XP guarantees connectivity.

**Wireless connection**

to balance with the Bluetooth Printer BT-P42.
### Technical data (Limit Values)

<table>
<thead>
<tr>
<th></th>
<th>XP26</th>
<th>XP26DR</th>
<th>XP56</th>
<th>XP56DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum weight (according to USP)</td>
<td>21 mg</td>
<td>4.5 mg</td>
<td>0.01 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Sensitivity offset (sd)</td>
<td>0.005 mg (20 g)</td>
<td>0.008 mg (20 g)</td>
<td>0.006 mg (50 g)</td>
<td>0.014 mg (50 g)</td>
</tr>
<tr>
<td>- (at nominal load)</td>
<td>0.015 mg (1 g)</td>
<td>0.005 mg (1 g)</td>
<td>0.0015 mg (1 g)</td>
<td>0.006 mg (1 g)</td>
</tr>
<tr>
<td>- (at low load, fine range)</td>
<td>0.002 mg (1 g)</td>
<td>0.002 mg (1 g)</td>
<td>0.002 mg (1 g)</td>
<td>0.002 mg (1 g)</td>
</tr>
<tr>
<td>Readability</td>
<td>0.001 mg</td>
<td>0.01 mg</td>
<td>0.001 mg</td>
<td>0.01 mg</td>
</tr>
<tr>
<td>Readability, fine range</td>
<td>0.002 mg</td>
<td>0.002 mg</td>
<td>0.002 mg</td>
<td>0.002 mg</td>
</tr>
<tr>
<td>Readability*</td>
<td>0.04 mg (50 g)</td>
<td>0.05 mg (10 g)</td>
<td>0.05 mg (10 g)</td>
<td>0.05 mg (10 g)</td>
</tr>
<tr>
<td>- (at low load)</td>
<td>0.1 mg (10 g)</td>
<td>0.1 mg (10 g)</td>
<td>0.1 mg (10 g)</td>
<td>0.1 mg (10 g)</td>
</tr>
<tr>
<td>- (at low load, fine range)</td>
<td>0.0012 mg (20 g)</td>
<td>0.004 mg (50 g)</td>
<td>0.007 mg (50 g)</td>
<td>0.004 mg (50 g)</td>
</tr>
</tbody>
</table>

### Accessories:

- **XP504DR**
  - 520 g
  - 101 g
  - 1 mg
  - 0.1 mg
  - 0.1 mg (500 g)
  - 0.5 mg (10 g)
  - 0.1 mg (10 g)
  - 0.5 mg (100 g)
  - 0.5 mg (200 g)
  - 4x10^4 Rnt
  - 1x10^5°C-Rnt
  - 1x10^4°C-Rnt
  - 23/s
  - 0.0007 mg+4x10^-8 Rgr
  - 0.004 mg+5x10^-8 Rgr
  - 0.0007 mg+6x10^-8 Rgr
  - 0.004 mg+6x10^-8 Rgr

- **XP505**
  - 4.5 m
  - 23/s
  - 0.0007 mg+4x10^-8 Rgr
  - 0.004 mg+5x10^-8 Rgr
  - 0.0007 mg+6x10^-8 Rgr
  - 0.004 mg+6x10^-8 Rgr

- **XP506**
  - 520 g
  - 11 g
  - 23/s
  - 0.0007 mg+4x10^-8 Rgr
  - 0.004 mg+5x10^-8 Rgr
  - 0.0007 mg+6x10^-8 Rgr
  - 0.004 mg+6x10^-8 Rgr

- **XP507**
  - 520 g
  - 11 g
  - 23/s
  - 0.0007 mg+4x10^-8 Rgr
  - 0.004 mg+5x10^-8 Rgr
  - 0.0007 mg+6x10^-8 Rgr
  - 0.004 mg+6x10^-8 Rgr

- **XP508**
  - 520 g
  - 11 g
  - 23/s
  - 0.0007 mg+4x10^-8 Rgr
  - 0.004 mg+5x10^-8 Rgr
  - 0.0007 mg+6x10^-8 Rgr
  - 0.004 mg+6x10^-8 Rgr

### Readability and Sensitivity

- **Readability**
  - 0.001 mg
  - 0.01 mg
  - 0.001 mg
  - 0.01 mg

- **Sensitivity offset**
  - 0.002 mg (1 g)
  - 0.002 mg (1 g)
  - 0.002 mg (1 g)
  - 0.002 mg (1 g)

### Interface Update Rate

- 23/s

### Sensitivity Temperature Drift

- 0.05 mg (10 g)
- 0.015 mg (10 g)
- 0.05 mg (10 g)
- 0.05 mg (10 g)
- 0.1 mg (10 g)
- 0.5 mg (10 g)

### Maximum Capacity

- 120 g
- 220 g
- 220 g
- 220 g
- 520 g
- 520 g

### LocalCAN (interface)

- 487 mm
- 78 x 73 mm
- 268 mm
- 235 mm
- 73 mm
- 40 x 40 mm

### ErgoClips for XP Micro balances

- ErgoClip Basket micro
- ErgoClip Flask micro, including extension
- MiniWeigh Door micro for inner draft shield

### XP Micro balances

- 11107869
- 11107869
- 11107869
- 11106749

### Accessories:

- Printer RS-422 with RS232 connection
- Printer BT-P422 with wireless Bluetooth connection
- Footswitch: switch for balance functions
- Ergoscale: hands free sensor for balance functions
- Terminal extension cable 4.5 m
- Density determination add-on
- RS232-C (interface)
- Bluetooth® Single point (interface)
- Bluetooth® Multi point (interface)
- Ethernet (interface)
- PS/2 keyboard connection (interface)
- LocalCAN (interface)
- Cable RS9-5m (myr), 1m
- Cable LC-RS9 for LocalCAN
- Weighing Kit – ErgoClip Set
- PC-Volume Option 1
- PC-Volume Option 2, XSXP
- PC-Volume Option 3 XS/XP
- Printer stand
- SE-KIT XP-A separate electronics
- USB Converter cable

### Typical values for calculating the measurement uncertainty

<table>
<thead>
<tr>
<th>Repeatability*</th>
<th>0.0007 mg+4x10^-8 Rgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity offset (sd)</td>
<td>0.0012 mg+1x10^-7 Rgr</td>
</tr>
<tr>
<td>Differential linearity deviation (sd)</td>
<td>1x10^-6 Rnt</td>
</tr>
<tr>
<td>Differential weight deviation (sd)</td>
<td>1x10^-6 Rnt</td>
</tr>
<tr>
<td>Sensitivity (sd)</td>
<td>1x10^-6 Rnt</td>
</tr>
<tr>
<td>Minimum weight (according to USP)</td>
<td>2.1 mg+1.2x10^-6 Rgr</td>
</tr>
<tr>
<td>Minimum weight* (2x10^-6 Rgr)</td>
<td>0.14 mg+5x10^-6 Rgr</td>
</tr>
<tr>
<td>Setting time</td>
<td>3.5 s</td>
</tr>
<tr>
<td>Setting time, fine range</td>
<td>3.5 s</td>
</tr>
</tbody>
</table>

* Repeatability and minimum weight capacity can be improved by the following measures:
- Select suitable weighing parameters, choose a better location, use smaller weighing containers.
Conformity and Operational Reliability
With Service XXL

Qualify your balances and work efficiently and safely from day one. METTLER TOLEDO offers customized solutions for working in a regulated environment.

EQ-Pac – Conformity and efficiency all inclusive
The complete Equipment Qualification solution. All relevant IQ/OQ/PQ/MQ processes, the associated services and the necessary documentation are combined in a complete package. In order to perform the preliminary Design Qualification (DQ) competently and quickly, we recommend the use of the METTLER TOLEDO DQ protocol in addition to the EQ Pac.

IPac – to ensure qualified installation
Ready for use straight away. With IPac, you ensure a professional installation and initial qualification. IPacs are ideal for integrating the weighing unit into an existing quality management system.

XXL Service – more than just service
METTLER TOLEDO offers custom services for day-to-day operational reliability, to maintain the value and ensure fault-free operation of your weighing unit. Our global service network comprises over 1200 highly-trained and local engineers offering cost-effective service solutions. Contact your local METTLER TOLEDO partner.

www.mt.com/micro
www.mt.com/XP-Analytical

For more information