ML-T Analytical Balances
Compact, Intuitive, Reliable

Comfortable touchscreen for easy operation

The easy-to-read 4.5" color capacitive touchscreen with clear icons and straightforward guidance enables users to operate the balance quickly even while wearing cloth or rubber gloves. Multilingual text options and graphics walk you through every step of your weighing process.

Convenient applications increase productivity

10 built-in applications including density determination and formulation support your weighing and data-management procedures to increase productivity and reduce errors.

Simplified balance leveling

The built-in LevelControl function issues a warning when the balance is not leveled and provides onscreen guidance to help you level the balance correctly within seconds.

Flexible connectivity for simplified data management

Multiple interfaces including LAN and optional WLAN enable simple data handling. Transfer data to PC, FTP server, memory stick or printer in formats including XML and CSV files.

ML-T Analytical Balances
Convenient Weighing

The very compact design of the ML-T Analytical Balances makes the most of your workspace while offering powerful functionalities via an intuitive user interface to support you in your daily tasks. And if once power is unavailable, simply operate the balance with batteries.

The high-performance MonoBloc weighing cell in combination with fully automatic internal adjustment delivers the accuracy you need at any time.

The ML-T delivers consistently reliable results, which you can easily transfer to wherever needed thanks to future-proof connectivity and data-management functionalities.

METTLER TOLEDO

ML-T Analytical Balances, 0.1 mg Readability

Technical Specifications	ML54T	ML104T	ML204T	ML304T
Limit Values				
Capacity	52 g	120 g	220 g	320 g
Nominal load	50 g	100 g	200 g	300 g
Readability	0.1 mg	0.1 mg	0.1 mg	0.1 mg
Repeatability	0.1 mg	0.1 mg	0.1 mg	0.1 mg
Linearity deviation	0.2 mg	0.2 mg	0.2 mg	0.2 mg
Typical Value				
Repeatability	0.08 mg	0.08 mg	0.08 mg	0.08 mg
Linearity deviation	0.06 mg	0.06 mg	0.06 mg	0.06 mg
Sensitivity offset (at nominal load) [1]	0.5 mg	0.6 mg	0.8 mg	1.5 mg
Minimum weight (USP, tolerance = 0.10%) [2]	160 mg	160 mg	160 mg	160 mg
Minimum weight (tolerance = 1%) [2]	16 mg	16 mg	16 mg	16 mg
Settling time	2 s	2 s	2 s	3 s
Dimensions				
Weighing pan dimension $\varnothing$	90 mm	90 mm	90 mm	90 mm

[1] after adjustment with internal weight

[2] determined at 5% load, k = 2

Accurate Results

- Capacity from 52 to 320 g
- Readability 0.1 mg
- Minimum sample weight 16 mg (tolerance = 1%)
- MonoBloc weighing cell

Efficient and Intuitive Operation

- 4.5" color capacitive touchscreen, glove compatible
- 10 different applications (weighing, counting, check weighing, dynamic weighing, percent weighing, formulation, totaling, back-weighing, density, factor weighing)
- Statistics option
- Target and tolerance setting including weighing-in aid
- Battery operation

Quality Assurance

- Temperature and time controlled automatic internal adjustment (FACT)
- LevelControl: Level warning with leveling guide
- Configurable sample and task IDs
- User management for up to 10 users
- ISO Log for adjustments, tests and setting changes

Easy Data Transfer

- Easy connectivity and data export: LAN, USB, RS232 and optional WLAN/Bluetooth
- Easy connection of peripheral devices: Printer, PC, USB memory stick, barcode reader and keyboard
- Advanced reporting and publishing capabilities
- Export of measurement results to USB memory stick or FTP server as XML, CSV or TXT file
- PC-Direct to easily transfer weight values to PC
- Comprehensive data management in connection with EasyDirect™ Balance software

Sustainable Value

- Metal bottom housing
- Overload protection
- Glass panels with QuickLock release for easy cleaning

Accessories

Accessories like EasyDirect™ Balance data management software, printers, calibration weights, a density determination kit and a wireless dongle help you enhance performance, improve ergonomics and handle your data efficiently.

▶ **www.mt.com/lab-accessories**

www.mt.com/mlt-analytical

For more information

MS-TS Analytical Balances
Reliable, Intuitive, Robust

Proven weighing cell delivers reliable results

Our renowned MonoBloc weighing cell, with automatic internal adjustment delivers consistently reliable results. Built-in overload protection ensures a long balance lifetime.

Convenient applications to increase productivity

11 built-in applications, including differential weighing, formulation and density determination support your weighing process and data management to increase productivity and reduce errors.

Metal housing ensures long service life

The full die-cast aluminum housing not only protects the weighing cell from environmental influences and impacts, it is also resistant to harsh chemicals, including acetone.

Get connected for easy data management

Multiple interfaces including LAN and optional WLAN enable simple data handling. Transfer data to PC, FTP server, memory stick or printer in formats including PDF reports and XML/CSV files.

MS-TS Analytical Balances
Convenient Weighing

The high-performance MonoBloc weighing cell in combination with the fully automatic internal adjustment delivers the accuracy you need at any time.

The 7 inch extra-large color capacitive touchscreen display with its intuitive user interface and 18 millimeter high digits brings comfort and convenience to daily weighing tasks.

The MS-TS Analytical Balances are designed to deliver consistently reliable results. These results can be easily transferred wherever needed thanks to future-proof connectivity and data-management functionalities.

METTLER TOLEDO

MS-TS Analytical Balances, 0.1 mg Readability

Technical Specifications	MS104TS	MS204TS	MS304TS
Limit Values			
Capacity	120 g	220 g	320 g
Nominal load	100 g	200 g	300 g
Readability	0.1 mg	0.1 mg	0.1 mg
Repeatability	0.1 mg	0.1 mg	0.1 mg
Linearity deviation	0.2 mg	0.2 mg	0.2 mg
Typical Values			
Repeatability	0.08 mg	0.08 mg	0.08 mg
Linearity deviation	0.06 mg	0.06 mg	0.06 mg
Sensitivity offset (at nominal load) [1]	0.6 mg	0.8 mg	1.5 mg
Minimum weight (USP, tolerance = 0.10%) [2]	160 mg	160 mg	160 mg
Minimum weight (tolerance = 1%) [2]	16 mg	16 mg	16 mg
Settling time	2 s	2 s	3 s
Dimensions			
Weighing pan dimension ⌀	90 mm	90 mm	90 mm

[1] after adjustment with internal weight

[2] determined at 5% load, k = 2

Accurate Results

- Capacity from 120 to 320 g
- Readability 0.1 mg
- Minimum sample weight 16 mg (tolerance = 1%)
- MonoBloc weighing cell

Efficient and Intuitive Operation

- 7" color capacitive touchscreen, glove compatible
- 18 mm high digits
- 11 different applications (weighing, counting, check weighing, dynamic weighing, percent weighing, formulation, totaling, back-weighing, differential weighing, density, factor weighing)
- Statistics option and graphical results representation
- Target and tolerance setting including weighing-in aid

Quality Assurance

- Temperature and time controlled automatic internal adjustment (FACT)
- LevelControl: Level warning with leveling guide
- Configurable sample and task IDs
- User management for up to 20 users
- ISO Log for adjustments, tests and setting changes

Easy Data Transfer

- Easy connectivity and data export: LAN, USB, RS232 and optional WLAN/Bluetooth
- Easy connection of peripheral devices: Printer, PC, USB memory stick, barcode reader and keyboard
- Advanced reporting and publishing capabilities
- Web access for remote control and second screen from any web browser
- Export of measurement results to USB memory stick or FTP server as XML, PDF, CSV or TXT file
- PC-Direct to easily transfer weight values to PC
- Comprehensive data management in connection with EasyDirect™ Balance software

Sustainable Value

- Robust and chemical-resistant full metal housing
- Overload protection
- Draft shield and glass panels with QuickLock release for easy cleaning

Accessories

Accessories like EasyDirect™ Balance data management software, printers, calibration weights, and a wireless dongle help you enhance performance, improve ergonomics and handle your data efficiently.

▶ **www.mt.com/lab-accessories**

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For more information

MS Semi-Microbalances
0.01 mg and 0.1 mg

Precise Results
The High Resolution Technology (HRT) weighing cell provides up to 5-place readability. With two built-in weights, combined with FACT (fully automatic time and temperature-controlled internal adjustment), the balance carries out adjustment and linearization automatically.

Efficient Handling
Reduce the number of movements needed for every weighing. E.g. open the draft shield ErgoDoor with your left hand whilst dosing your sample with the right.

Space Saving
Save working space thanks to split draft shield doors that do not project beyond the balance, and sideways mounted connectors at the back of the balance.

Easy Cleaning
Cleaning has never been this easy: dismantle the QuickLock draft shield in a few short steps, then wash all glass panels and the drip tray in the dishwasher.

Designed for You
Right Down to the Last Detail

Whether you are carrying out a simple routine task or a complicated weighing procedure, every little detail has been thought about to ensure your weighing tasks are comfortable and efficient so that you can maximize your productivity.

MS semi-microbalances provide you with fast settling times and consistently reliable results. The Swiss high precision HRT weighing cell guarantees accuracy over the entire weighing range. The built-in date and time function enables GLP/GMP compliant printouts, ensuring full control and traceability.

METTLER TOLEDO

Semi-Microbalances

Technical data	MS105	MS105DU	MS205DU	MS204
Limit values				
Maximum capacity	120 g	120 g	220 g	220 g
Maximum capacity, fine range	-	42 g	82 g	-
Readability	0.01 mg	0.1 mg	0.1 mg	0.1 mg
Readability, fine range	-	0.01 mg	0.01 mg	-
Repeatability (at nominal load)	0.04 mg	0.08 mg	0.08 mg	0.09 mg
Repeatability (at low load)	0.02 mg (20 g)	-	-	0.07 mg (20 g)
Repeatability, fine range (at nominal load)	-	0.03 mg	0.05 mg	-
Repeatability, fine range (at low load)	-	0.02 mg (20 mg)	0.02 mg (20 mg)	-
Linearity deviation	0.1 mg	0.15 mg	0.2 mg	0.2 mg
Sensitivity offset (test weight)	0.4 mg (100 g)	0.4 mg (100 g)	0.8 mg (200 g)	0.8 mg (200 g)
Typical values				
Repeatability (at nominal load)	0.03 mg	0.06 mg	0.07 mg	0.07 mg
Repeatability (at low load)	0.015 mg (20 g)	0.015 mg (20 g)	0.015 mg (20 g)	0.05 mg (20 g)
Linearity deviation (within 10 g)	0.02 mg	0.02 mg	0.02 mg	-
USP Minimum Weight [1]	30 mg	30 mg	30 mg	100 mg
Minimum sample weight (U=1 %, k=2)	3 mg	3 mg	3 mg	10 mg
Settling time	8 s	4 s	4 s	2 s
Settling time, fine range	-	8 s	8 s	-
Balance dimensions (WxDxH)	247x358x331 mm	247x358x331 mm	247x358x331 mm	247x358x331 mm
Weighing pan dimensions	$\varnothing$ 80 mm	$\varnothing$ 80 mm	$\varnothing$ 80 mm	$\varnothing$ 80 mm
Usable height of draft shield	234 mm	234 mm	234 mm	234 mm
Weight of balance	6.8 kg	6.8 kg	6.8 kg	6.8 kg

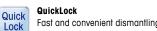[1] Typical minimum sample weight according to USP <41>; measurement at ≤ 5% load

Features

HRT HRT weighing cell
With two built-in weights, for constant accuracy over the entire weighing range

ErgoDoor
The right door can be opened from the left side and vice versa

QuickLock
Fast and convenient dismantling of the draft shield

ErgoSens
For touch-free operation of the balance

FACT
Fully automatic time- and temperature-controlled internal adjustment

SmartTrac
Shows how much of the entire weighing range has been used

Protection
Balance settings can be password protected

Connectivity
RS232 to connect to PC, printer or bar code reader; USB to connect to PC

Diagnostics
Easy execution of balance diagnostics e.g. keypad and repeatability tests

SmartKeys
Programmable keys for shortcut access to preferred applications

Protective cover
Encloses the entire balance housing to protect against stains and scratches

Green MT
Just 1 Watt in standby, PVC and mercury free, energy efficient manufacture

Approval

Approved versions of all models available

Applications

Formulation, piece counting, percent weighing, statistics, totaling, free factor, density, pipette check, dosing, recall

Accessories

Fast, smart printers
Archive quality printouts on paper, labels and continuous labels: P-58, P-56.

Density kit
For determining the density of solids and liquids.

PipetteCheck
Balance and stand-alone pipette check-station combined, for checking pipette accuracy.

www.mt.com/ms-analytical

For more information